

## APPENDICES

### APPENDIX 1 Comparison of value estimates: CVM vs other Methods

Study	Method	Value estimate	Ratio	Comments
Bishop and Heberlein (1980)	simulated market	US\$63	0.333	CVM under-estimates value
	CV scenario	US\$21		
Carson et al (1996)	RP	*	0.736 to 0.960	CVM under-estimates value
	CVM	*		
Brookshire et al (1982)	HPM	***	0.5**	Authors state that this ratio is close to that obtained by Bishop & Heberlein (1979)
	CVM	***		
Bishop and Heberlein (1979)	TCM	US\$45	0.467	Value of travel time use is 0.5 of hourly wage rate
	CVM	US\$21		
Bishop, Heberlein & Kealy (1983)	Simulated market	US\$101	0.624	The values indicate the stronger effect of dollar changes on the probability of saying yes in the simulated market. (Truncation at \$200)
	CVM	US\$63		

\* Monetary values not available

\*\* Ratio based on average of comparisons

\*\*\*See article for values

APPENDIX 2.1a Pre-test cover letter

15 October 2008

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958-137

*Name and address of respondent*

Dear Householder

**Re: Pekapeka Swamp Survey**

I am a postgraduate student in the Department of Economics and Finance at Massey University. I am carrying out research as part of my thesis for Master of Philosophy (MPhil) in Economics. The research is an economic study of the value that people place on the restoration and preservation of the Pekapeka Swamp, the second most important wetland in the Hawke's Bay Region. I am collecting information from a sample of households in your region, and your name was randomly selected from the telephone directory to participate in the survey.

Completing the survey questionnaire will take approximately 15 to 20 minutes. Your household's participation in this survey is anonymous and voluntary. The information you provide will be considered strictly confidential and will only be used for the purposes of this research. The number on the questionnaire form is for administrative purposes only. The link between your household's identity and this number will be destroyed once the study has been completed.

Most questions are aimed at collecting information on your household's attitude and opinions, and there are no wrong answers; what is sought is that you answer these questions truthfully, remembering that your responses will remain completely anonymous through and through. Your household's response is valuable to ensure that a representative sample of opinions is obtained from residents in your region. This is essential for my research.

Thank you for your willingness to participate in this survey. Once you have completed the questionnaire please return it before October 22, 2008 by using the free post envelope provided. For further information contact me at the address provided below.

Yours faithfully

Tom Ndebele  
Student Researcher  
E-mail: [ndebelet@landcareresearch.co.nz](mailto:ndebelet@landcareresearch.co.nz)

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New Zealand

APPENDIX 2.1b      Pre-test survey questionnaire

Form #: 958-137

**Valuing the Pekapeka Swamp: A Survey of the Value of  
Restoring and Preserving the Pekapeka Wetland System**

## Pekapeka Swamp Survey questionnaire

### PART I. Introduction and background information

Natural resources such as wetlands are important to any community because of the free benefits that may be derived, directly or indirectly, from them. The Pekapeka Swamp is considered by the Hawke's Bay Regional Council to be the second most important wetland system in the Hawke's Bay region. If the Pekapeka Swamp is to be managed for the maximum benefit of the Hawke's Bay community, the regional council's policies and programme for the Pekapeka Swamp should reflect the community's interests and preferences. Knowledge of how valuable a resource is to the community helps the regional authorities in prioritizing and deciding how to allocate funding among alternative projects. This knowledge can only be obtained through surveys such as this one.

#### Definition of a wetland

A wetland may be defined as an area of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters. Wetlands are often referred to by such names as marshes, swamps, bogs, wet meadows, potholes, sloughs, and river-overflow lands.

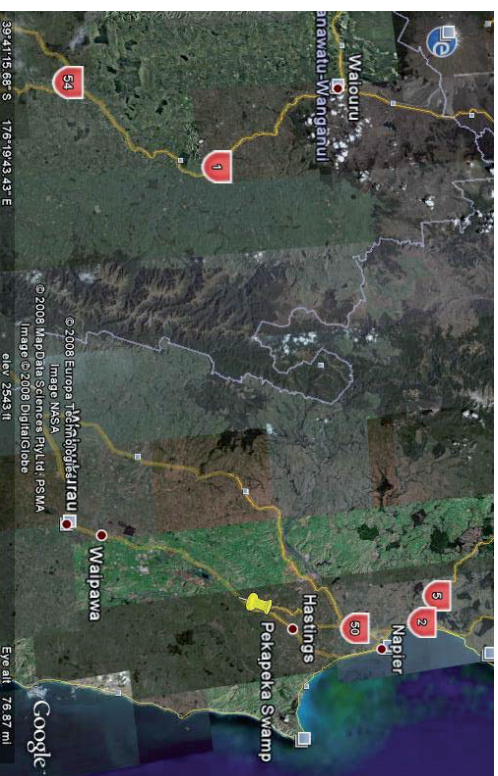
#### Benefits from wetlands

Wetlands are valuable to people for the following reasons:

- Wetlands provide recreational opportunities, such as fishing, boating, swimming, gamebird hunting, bird watching, photography, nature appreciation and wildlife viewing.
- Wetlands provide flood control and storm protection by reducing the damage floods and storms would have on farmland and urbanized areas.
- Wetlands provide a habitat (living place) for fish, insects, plants, birds, animals and other living things.
- Wetlands purify water by filtering chemicals and nutrients from waterways. They are also a source of water supply for irrigating nearby farmland.
- Wetlands reduce global warming through carbon storage.

### Pekapeka Swamp

The map below shows the location of Pekapeka Swamp adjacent to state highway 2 (SH2), 12 km southwest of Hastings.



Instructions: Please answer the following questions by either ticking a box or writing in the space provided. If you are unsure as to the meaning of the question please explain your answer by writing in the margin.

### PART II: Awareness and use of wetlands in general

Q-1. Before reading part one of this survey, was your household aware of the existence of the Pekapeka Swamp? (Please tick relevant answer).

(✓)  
☐ YES  
☐ NO

The following questions do not refer to the Pekapeka Swamp. The objective is to establish your household's current and potential future participation in wetland recreational activities in general.

Q-2. How many days in the last 12 months have all or any members of your household spent in recreation at wetlands in New Zealand?

-----days

- Q-3. For each of the activities listed below, indicate in column A which wetland activities are important to you and members of your household. (Please tick relevant ones).

Activity	A	B	C
	( )	( )	( )
Game bird hunting			
Gundog trails			
Fishing			
Photography			
Bird-watching			
Scientific research			
Teaching and education			
Nature appreciation			
Walking			
Picnics			
Swimming			
Boating			
Camping			
Don't undertake activity in wetlands			
Others (please specify)			

- Q-4. What is the main activity for which your household uses wetlands? (Tick the one that applies in column B).

- Q-5. Show any activities that your household may use wetlands for in the future.  
(Tick those that apply in column C).

### PART III: Valuing the Pekapeka Swamp

Many reasons have been given for valuing existing wetlands. For each of the possible reasons below tick the box which best describes how important it is to your household:

Reason for Valuing	Importance					No Opinion
	Not Important	Moderately Important	Very Important	Extremely Important		
Q-6. Protecting rare wildlife	( )	( )	( )	( )		( )
Q-7. Protecting wildlife living areas						
Q-8. Conserving natural areas for educational and scientific study						
Q-9. Providing scenic beauty						
Q-10. Providing commercial income (e.g. tourism, eeling ect)						
Q-11. Providing recreational opportunities such as hunting, fishing & wildlife viewing						
Q-12. Providing flood control and storm buffering						
Q-13. Providing water purification. Wetlands filter chemicals and nutrients from waterways						
Q-14. Providing ground water recharge and discharge						
Q-15. Knowing that in the future you have the option to go there if you choose to						
Q-16. Knowing the wetland exists						
Q-17. Knowing that future generations will have the wetland						
Q-18. Other (specify)						
Q-19. Other (specify)						
Q-20. Other (specify)						

Q-21. Over the years there has been increasing pressure to convert the Pekapeka Swamp and its immediate environs into pasture and crop land. The benefits of this include increased income and jobs for the local people, while the disadvantages have been the damage to the wetland system making the wetland less suitable for leisure, fishing, wildlife and scientific uses. The size of the wetland has shrunk considerably, and water canals draining water from the wetland have reduced its water level significantly. Neglect of the wetland area since the late 1960s saw the grey and crack willow spread and cover over 90% of the wetland.

In 1998, the Hawke's Bay Regional Council Management Plan provided for the long term restoration and preservation of the Pekapeka Swamp. So far about 90 hectares out of a possible total of 98 hectares have been fenced off and considerable progress has been made in terms of reducing the willows which previously clogged the swamp, and re-introducing a number of native trees, grasses, insects and bird species.

Would your household support an environmental programme that seeks to restore and preserve natural resources if it doesn't directly cost your household anything? (Please tick appropriate answer)

- ☒ YES because.....
- ☐ NO because.....
- ☐ NOT SURE because.....

Q-22. Please keep in mind that the following question is a hypothetical experiment intended to provide an economic measure of how you value the restoration and preservation of the Pekapeka Swamp. Suppose that the Hawke's Bay Regional Council abandons the current Pekapeka Swamp restoration programme because their budget no longer permits the continued funding of the programme; and that the abandonment of the restoration programme would allow for agricultural development that could drain and fill the wetland. This would boost the local economy in terms of employment, services to agriculture, agricultural output, and flow on effects. However, this wetland type and its benefits (including economic) would be lost in this region.

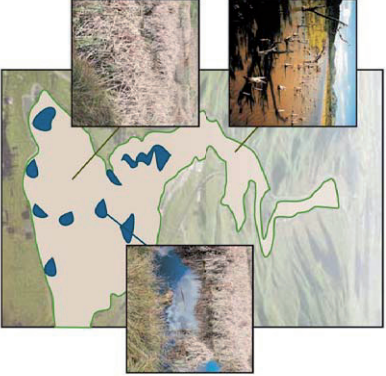
Please also assume that a new programme is proposed to establish a special fund to be financed through a levy that will be included in your monthly power bill and that the special fund will be administered by a committee whose members are elected by the Hawke's Bay community. The revenue will be earmarked for the purchase, restoration and preservation of the entire Pekapeka wetland area covering 98 hectares. This new program would ensure:

- (i) the restoration of the wetland to its natural condition,
- (ii) the construction of a walking track right round the circumference of the wetland,
- (iii) the development of picnic, educational and cultural areas within the wetland area,
- (iv) the construction of a weir that will maintain adequate water levels year round, and,
- (v) the preservation of a fully functional wetland system that will guarantee the continued existence of the wetland for current and future generations to enjoy.

Below, picture A shows the current state of the wetland. Picture B shows how the area might look like if the restoration program is not voted for. Picture C shows how the restored and preserved wetland would potentially look, if the hypothetical programme is voted for.

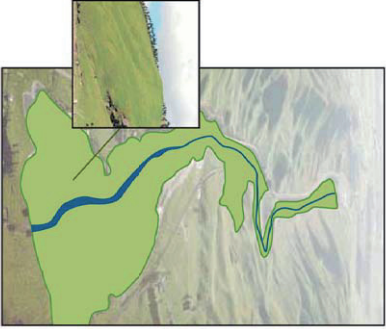
The green line marks the approximate boundary of the Pekapeka swamp

**A**



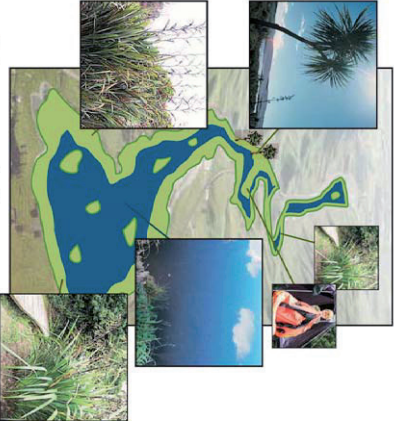
**Status quo scenario**  
The wetland is mainly covered in flax, weeds, dead willow stumps and raupo.

**B**



**Future scenario 1**  
The wetland has been drained, filled, and converted into farmland. Only a small stream/canal remains in what was once a functional wetland.

**C**



**Future scenario 2**  
At least 50% of the wetland area is clear water. Water level is close to its natural level. Native plants, insects, birds and small animals have been re-introduced.



Q-23. The following questions refer to your potential use of the restored Pekapeka Swamp as depicted in picture C (Future scenario 2).

- a. How many days on average in any calendar year are members of your household likely to spend at the restored Pekapeka Swamp? -----days
- b. For each of the activities listed below, indicate in column A which ones would be important to you and members of your household. (Please tick relevant ones).

Activity	A	B	C
Game bird hunting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gundog trails			
Fishing			
Photography			
Bird-watching			
Scientific research			
Teaching and education			
Nature appreciation			
Walking			
Picnics			
Swimming			
Boating			
Camping			
Don't undertake activity in wetlands			
Others (please specify)			

- c. What is likely to be the main activity for which your household would use the restored Pekapeka Swamp? (Tick the one that applies in column B).
- d. Show any activities that your household may use the restored Pekapeka Swamp for in the future. (Tick those that apply in column C).

Q-24. Now, assume that the only way to restore and preserve the Pekapeka Swamp is for all households to pay into the special fund mentioned on page 5, to be used exclusively for this purpose. Keeping in mind your household income and other financial commitments, and that similar wetlands will continue to exist elsewhere in New Zealand, what is the maximum amount of money your household is prepared to pay per year for five years? (Please write the amount in the space provided below). In making your decision also remember the importance you and your household attach to the mere existence of Pekapeka Swamp; the fact that with restoration and preservation, the wetland will be available to your children and their children (future generations) to enjoy; all recreational benefits that you may enjoy and all the other services provided by a fully functional wetland as described on page 1. Before you answer this question please review pictures A, B, and C on page 6, and discuss with members of your household.

MY HOUSEHOLD IS WILLING TO PAY A MAXIMUM AMOUNT OF  
NZ\$.....PER YEAR FOR 5 YEARS. (Please write amount in the space  
provided)

Q-25. Referring to your answer to Q-24 above, I would like to find out how certain you are of the amount you stated as the maximum amount your household is willing to pay. Please tick the statement you think is relevant to you.

- ☒ [ ] QUITE CERTAIN
- [ ] THERE IS NO WAY WE CAN BE CERTAIN ABOUT THE AMOUNT
- [ ] THE AMOUNT IS JUST A GUESS
- [ ] NOT SURE WHAT TO THINK
- [ ] OTHER (SPECIFY).....

#### PART IV: Information about your household

The following questions ask for some information that will be confidential and will not personally identify in the study. I need this information to make sure that the sample is representative of the population in the Hawke's Bay region and also because the information provides important statistics for the study.

Q-26. Please describe yourself and members of your family in terms of the following characteristics:

Household member	Male ( )	Female ( )	Age (years)	Education – High School and above (years)	Main Occupation
Yourselves					
Family member 1					
Family member 2					
Family member 3					
Family member 4					
Family member 5					
Family member 6					
Family member 7					

Q-27. Which of the following best describes your ethnicity? (Please tick relevant box)

- ( )
- ☐ NZ EUROPEAN
- ☐ MAORI
- ☐ ASIAN
- ☐ OTHER EUROPEAN
- ☐ PACIFIC ISLANDER
- ☐ AFRICAN
- ☐ OTHER (specify) .....

Q-28. Do you or any member of your household belong to an environmental group? (Please tick relevant box).

- ( )
- ☐ YES
- ☐ NO

Q-29. Do you or any member of your household belong to a water-based recreation club? (Please tick relevant box).

- ( )
- ☐ ANGLERS' ASSOCIATION
- ☐ GAMEBIRD SHOOTERS' ASSOCIATION
- ☐ BOTH ANGLERS' & SHOOTERS' ASSOCIATION
- ☐ BOATING CLUB
- ☐ NOT A MEMBER OF ANY
- ☐ OTHER (please specify) .....

Q-30. Do you or any member of your household currently hold fishing or shooting licences? (Please tick relevant box).

- ( )
- ☐ YES (Please state type of licence) .....
- ☐ NO

Q-31. What was the total annual income of everyone in your household (before tax) in 2007? Select only one appropriate option for your household.

Annual income ( )
Less than 10,000 <input type="checkbox"/>
10,000 – 19,999 <input type="checkbox"/>
20,000 – 29,999 <input type="checkbox"/>
30,000 – 39,999 <input type="checkbox"/>
40,000 – 49,999 <input type="checkbox"/>
50,000 – 59,999 <input type="checkbox"/>
60,000 – 69,999 <input type="checkbox"/>
70,000 – 79,999 <input type="checkbox"/>
80,000 – 89,999 <input type="checkbox"/>
90,000 – 99,999 <input type="checkbox"/>
100,000 – 109,999 <input type="checkbox"/>
110,000 and over <input type="checkbox"/>

Q-32. Finally, we would be interested in your opinions about this questionnaire.

Please indicate whether you agree or disagree with each of these statements about the questionnaire:

	Agree ( )	Disagree ( )	No Opinion ( )
(a) Some of the questions were hard to understand			
(b) Some parts of the questionnaire were hard to follow			
(c) The questionnaire was too long			

Do you have any other comments?

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Thank you for your help.

Please return your completed questionnaire in the envelope provided. No stamp is needed.



APPENDIX 2.2a      Final cover letter

# Massey University

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES  
Te Kura Pūkenga Tangata

7 November 2008

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885-062

Dear Householder

**Re: Pekapeka Swamp Survey**

I am a postgraduate student in the Department of Economics and Finance at Massey University. I am carrying out research as part of my thesis for Master of Philosophy (MPhil) in Economics. The research is an economic study of the value that people place on the restoration and preservation of the Pekapeka Swamp, the second most important wetland in the Hawke's Bay Region. I am collecting information from a sample of households in your region, and your name was randomly selected from the telephone directory to participate in the survey.

Completing the survey questionnaire will take approximately 15 to 20 minutes. Your household's participation in this survey is anonymous and voluntary. The information you provide will be considered strictly confidential and will only be used for the purposes of this research. The number on the questionnaire form is for administrative purposes only. The link between your household's identity and this number will be destroyed once the study has been completed.

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Thank you for your willingness to participate in this survey. Once you have completed the questionnaire please return it before November 21, 2008 by using the free post envelope provided. For further information contact me at the address provided below.

Yours faithfully

Tom Ndebele  
Student Researcher  
E-mail: [ndebele@landcareresearch.co.nz](mailto:ndebele@landcareresearch.co.nz)

Vicky Forgie  
Supervisor  
New Zealand Centre for Ecological Economics  
Private Bag 11-052  
Palmerston North 4442  
New Zealand

**Valuing the Pekapeka Swamp: A Survey of the Value of  
Restoring and Preserving the Pekapeka Wetland System**

Today, nearly every New Zealander is concerned with the way government and local authorities manage our natural resources because of their importance in sustaining life and the fact that some of the resources are not renewable. Management of these resources for the maximum benefit of society requires knowledge of values people like you and your household place on these resources. Unfortunately these values are not known to policy makers and there is no market price to guide them. The only reasonable way to obtain this information is to consult people like you.

This survey seeks to collect information on your views and opinions on the restoration and preservation of the Pekapeka Swamp. Please answer all the questions even if you have never heard of or been to the Pekapeka Swamp.

Thank you for your help.

New Zealand Centre for Ecological Economics  
Massey University, Palmerston North 4442

November 2008

**Pekapeka Swamp Survey Questionnaire**

PART I. Introduction and background information

Natural resources such as wetlands are important to any community because of the free benefits that may be derived, directly or indirectly, from them. The Pekapeka Swamp is considered by the Hawke’s Bay Regional Council to be the second most important wetland system in the Hawke’s Bay region. If the Pekapeka Swamp is to be managed for the maximum benefit of the Hawke’s Bay community, the regional council’s policies and programme for the Pekapeka Swamp should reflect the community’s interests and preferences. Knowledge of how valuable a resource is to the community helps the regional authorities in prioritizing and deciding how to allocate funding among alternative projects. This knowledge can only be obtained through surveys such as this one.

Definition of a wetland

A wetland may be defined as an area of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters. Wetlands are often referred to by such names as marshes, swamps, bogs, wet meadows, potholes, sloughs, and river-overflow lands.

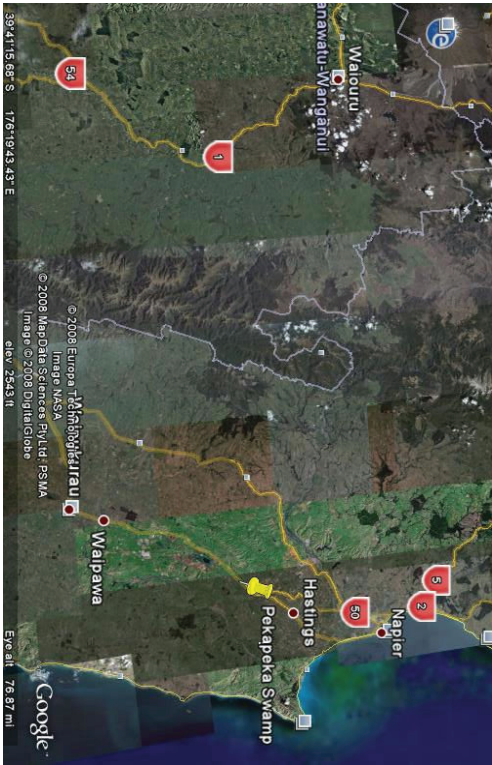
Benefits from wetlands

Wetlands are valuable to people for the following reasons:

- i. Wetlands provide recreational opportunities, such as fishing, boating, swimming, gamebird hunting, bird watching, photography, nature appreciation and wildlife viewing.
- ii. Wetlands provide flood control and storm protection by reducing the damage floods and storms would have on farmland and urbanized areas.
- iii. Wetlands provide a habitat (living place) for fish, insects, plants, birds, animals and other living things.
- iv. Wetlands purify water by filtering chemicals and nutrients from waterways. They are also a source of water supply for irrigating nearby farmland.
- v. Wetlands reduce global warming through carbon storage.

Pekapeka Swamp

The map below shows the location of Pekapeka Swamp adjacent to State Highway 2 (SH2), 12 km southwest of Hastings.



Instructions: Please answer the following questions by either ticking a box or writing in the space provided. If you are unsure as to the meaning of the question please explain your answer by writing in the margin.

PART II: Awareness and use of wetlands in general

Q-1. Before reading part one of this survey, was your household aware of the existence of the Pekapeka Swamp? (Please tick relevant answer).

☒ YES  
☐ NO

The following questions do not refer to the Pekapeka Swamp. The objective is to establish your household’s current and potential future participation in wetland recreational activities in general.

Q-2. How many days in the last 12 months have all or any members of your household spent in recreation at wetlands in New Zealand?

-----days

Q-3. For each of the activities listed below, indicate in column A which wetland activities are important to you and members of your household. (Please tick relevant ones).

Activity	A	B	C
	(👉)	(👉)	(👉)
1. Game bird hunting			
2. Gundog trails			
3. Fishing			
4. Photography			
5. Bird-watching			
6. Scientific research			
7. Teaching and education			
8. Nature appreciation			
9. Walking			
10. Picnics			
11. Swimming			
12. Boating			
13. Camping			
14. Don't undertake activity in wetlands			
15. Others (please specify)			

Q-4. What is the main activity for which your household uses wetlands? (Tick the one that applies in column B).

Q-5. Show any activities that your household may use wetlands for in the future. (Tick those that apply in column C).

3

### PART III: Valuing the Pekapeka Swamp

Many reasons have been given for valuing existing wetlands. For each of the possible reasons below tick the box which best describes how important it is to your household:

Reason for Valuing	Importance				
	No Opinion	Not Important	Moderately Important	Very Important	Extremely Important
	(👉)	(👉)	(👉)	(👉)	(👉)
Q-6. Protecting rare wildlife					
Q-7. Protecting wildlife living areas					
Q-8. Conserving natural areas for educational and scientific study					
Q-9. Providing scenic beauty					
Q-10. Providing commercial income (e.g. tourism, eeling ect)					
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Q-13. Providing water purification. Wetlands filter chemicals and nutrients from waterways					
Q-14. Providing ground water recharge and discharge					
Q-15. Knowing that in the future you have the option to go there if you choose to.					
Q-16. Knowing the wetland exists					
Q-17. Knowing that future generations will have the wetland					
Q-18. Other (specify)					
Q-19. Other (specify)					
Q-20. Other (specify)					

4



Q-21. Over the years there has been increasing pressure to convert the Pekapeka Swamp and its immediate environs into pasture and crop land. The benefits of this include increased income and jobs for the local people, while the disadvantages have been the damage to the wetland system making the wetland less suitable for leisure, fishing, wildlife and scientific uses. The size of the wetland has shrunk considerably, and water canals draining water from the wetland have reduced its water level significantly. Neglect of the wetland area since the late 1960s saw the grey and crack willow spread and cover over 90% of the wetland.

In 1998, the Hawke's Bay Regional Council Management Plan provided for the long term restoration and preservation of the Pekapeka Swamp. So far about 90 hectares out of a possible total of 98 hectares have been fenced off and considerable progress has been made in terms of reducing the willows which previously clogged the swamp, and re-introducing a number of native trees, grasses, insects and bird species.

Would your household support an environmental programme that seeks to restore and preserve natural resources if it doesn't directly cost your household anything? (Please tick appropriate answer and write your reason in the space provided)

- ☐ YES because.....
- ☐ NO because.....
- ☐ NOT SURE because.....

Hypothetical Scenario

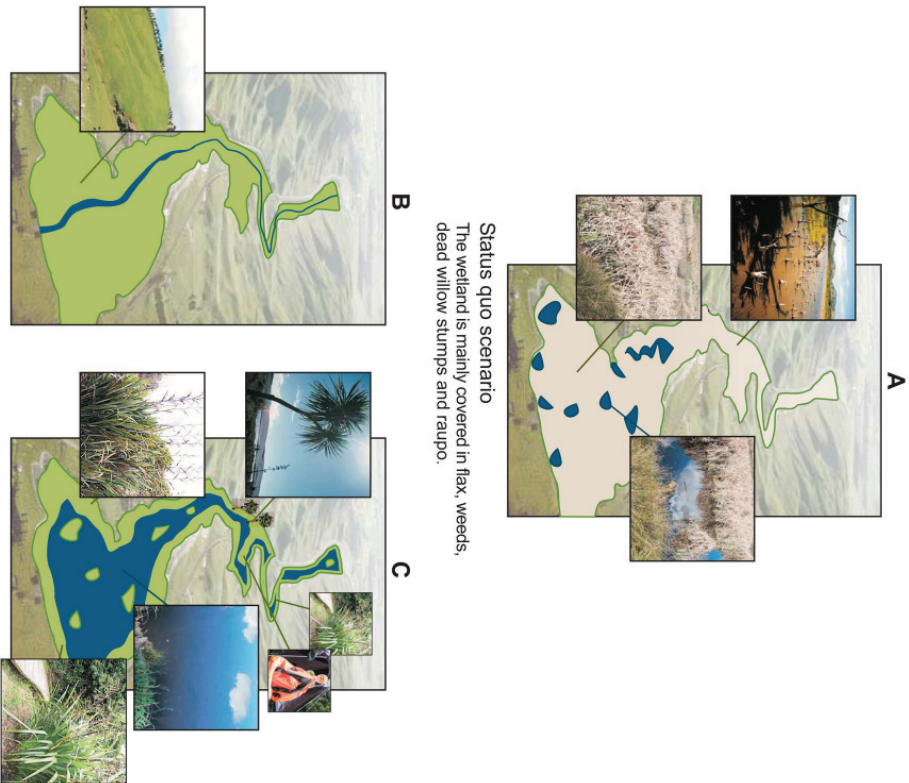
Please keep in mind that the following question is a hypothetical experiment intended to provide an economic measure of how you and your household value the restoration and preservation of the Pekapeka Swamp. Suppose that the Hawke's Bay Regional Council abandons the current Pekapeka Swamp restoration programme because their budget no longer permits the continued funding of the programme; and that the abandonment of the restoration programme would allow for agricultural development that could drain and fill the wetland. This would boost the local economy in terms of employment, services to agriculture, agricultural output, and flow-on effects. However, this wetland type and its benefits (including economic) would be lost in this region.

Please also assume that a new programme is proposed to establish a special fund to be financed through a household levy that will be included in your monthly power bill and that the special fund will be administered by a committee whose members are elected by the Hawke's Bay community. The revenue will be earmarked for the purchase, restoration and preservation of the entire Pekapeka wetland area covering 98 hectares. This new program would ensure:

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- (ii) the construction of a walking track right round the circumference of the wetland,
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- (iv) the construction of a weir that will maintain adequate water levels year round, and,
- (v) the preservation of a fully functional wetland system that will guarantee the continued existence of the wetland for current and future generations to enjoy.

Below, picture A shows the current state of the wetland. Picture B shows how the area might look like if the restoration programme is not voted for. Picture C shows how the restored and preserved wetland would potentially look, if the hypothetical programme is voted for.

The green line marks the approximate boundary of the Pekapeka swamp



Q-22. The following questions refer to your potential use of the restored Pekapeka Swamp as depicted in picture C (Future scenario 2).

- a. How many days on average in any calendar year are members of your household likely to spend at the restored Pekapeka Swamp? -----days
- b. For each of the activities listed below, indicate in column A which ones would be important to you and members of your household. (Please tick relevant ones).

Activity	A	B	C
	(✓)	(✓)	(✓)
1. Game bird hunting			
2. Gundog trails			
3. Fishing			
4. Photography			
5. Bird-watching			
6. Scientific research			
7. Teaching and education			
8. Nature appreciation			
9. Walking			
10. Picnics			
11. Swimming			
12. Boating			
13. Camping			
14. Don't undertake activity in wetlands			
15. Others (please specify)			

- c. What is likely to be the main activity for which your household would use the restored Pekapeka Swamp? (Tick the one that applies in column B).
- d. Show any activities that your household may use the restored Pekapeka Swamp for in the future. (Tick those that apply in column C).

Q- 23. Before you answer the following question, please remember the importance you and your household attach to the mere existence of Pekapeka Swamp; the fact that with restoration and preservation, the wetland will be available to your children and their children (future generations) to enjoy; all recreational benefits that you may enjoy and all the other services provided by a fully functional wetland as described on page 1. Also, review pictures A, B, and C on page 6 and discuss with members of your household before you decide on your final answer.

Now, assume that the only way to restore and preserve the Pekapeka Swamp is for all households to pay into the special fund, mentioned on page 5, to be used exclusively for this purpose. Now suppose that this program would cost your household \$[seed] each year for the next five years. Keeping in mind your household income and other financial commitments, and that similar wetlands will continue to exist elsewhere in New Zealand, would your household vote in favour of this program? (Please tick one answer only and write the amount in the space provided.)

1. ☐ YES. IN FACT MY HOUSEHOLD WOULD VOTE TO SUPPORT THIS PROGRAMME EVEN IF IT COST US UP TO \$..... PER YEAR. (Please write in the space provided the maximum amount your household would pay).
2. ☐ NO. WE WOULD NOT VOTE IN FAVOUR OF THIS PROGRAMME BECAUSE THE AMOUNT IS TOO MUCH. WE WOULD, HOWEVER, VOTE TO SUPPORT THIS PROGRAMME IF IT COST MY HOUSEHOLD \$..... PER YEAR. (Please write in the maximum amount that your household would pay).
3. ☐ NO. WE WOULD NOT VOTE IN FAVOUR OF THIS PROGRAMME BECAUSE (Please tick one):
- a. ☐ WETLANDS ARE NOT WORTH ANYTHING TO US.
- b. ☐ WE REFUSE TO PLACE A DOLLAR VALUE ON WETLANDS.
- c. ☐ WE DO NOT APPROVE OF THE LEVY
- d. ☐ WE CANNOT AFFORD TO PAY ANYTHING
- e. ☐ OTHER (Please specify): .....
4. ☐ WE HAVE NO OPINION BECAUSE (please tick one):
- a. ☐ WE DON'T REALLY CARE ABOUT WETLANDS.
- b. ☐ WE CAN'T MAKE A DECISION WITHOUT MORE INFORMATION.
- c. ☐ OUR OPINION WON'T MAKE ANY DIFFERENCE.
- d. ☐ OTHER (Please specify): .....



PART IV: Information about your household

The following questions ask for some information which will be confidential and will not personally identify you in the study. This information is important in ensuring that the sample is representative of the regional population and also provides important statistics for the study.

Q-24. Please describe yourself and members of your family in terms of the following characteristics:

Household member	Male (✓)	Female (✓)	Age (years)	Education – High School and above (number of years)	Main Occupation
Yourself					
Family member 1					
Family member 2					
Family member 3					
Family member 4					
Family member 5					
Family member 6					
Family member 7					

Q-25. Which of the following best describes your ethnicity? (Please tick relevant box)

- (✓)
- ☐ NZ EUROPEAN
- ☐ MAORI
- ☐ ASIAN
- ☐ OTHER EUROPEAN
- ☐ PACIFIC ISLANDER
- ☐ AFRICAN
- ☐ OTHER (specify).....

Q-26. Do you or any member of your household belong to an environmental group?  
(Please tick relevant box).

- (✓)
- ☐ YES
- ☐ NO

Q-27. Do you or any member of your household belong to a water-based recreation club?  
(Please tick relevant box).

- (✓)
- ☐ ANGLERS' ASSOCIATION
- ☐ GAMEBIRD SHOOTERS' ASSOCIATION
- ☐ BOTH ANGLERS' & SHOOTERS' ASSOCIATION
- ☐ BOATING CLUB
- ☐ NOT A MEMBER OF ANY
- ☐ OTHER (please specify) .....

Q-28. Do you or any member of your household currently hold fishing or shooting licences? (Please tick relevant box).

- (✓)
- ☐ YES (Please state type of licence) .....
- ☐ NO

Q-29. What was the total annual income of everyone in your household (before tax) in 2007? Select only one appropriate option for your household.

Annual income	(✓)
Less than 10,000	<input type="checkbox"/>
10,000 – 19,999	<input type="checkbox"/>
20,000 – 29,999	<input type="checkbox"/>
30,000 – 39,999	<input type="checkbox"/>
40,000 – 49,999	<input type="checkbox"/>
50,000 – 59,999	<input type="checkbox"/>
60,000 – 69,999	<input type="checkbox"/>
70,000 – 79,999	<input type="checkbox"/>
80,000 – 89,999	<input type="checkbox"/>
90,000 – 99,999	<input type="checkbox"/>
100,000 – 109,999	<input type="checkbox"/>
110,000 - and over	<input type="checkbox"/>

Q-30. Do you have any comments about this survey questionnaire?

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Thank you for your help.

Please return your completed questionnaire in the envelope provided. No stamp is needed.

## APPENDIX 2.2c First reminder letter

Dear Householder

### Pekapeka Swamp Survey Reminder

You should have received in the mail a copy of the questionnaire in regard to our study of the Pekapeka Swamp. To date we have not received any reply from you so this postcard is to kindly urge you to fill in the questionnaire. You do not have to reside close to the Pekapeka Swamp or to have visited it to complete the questionnaire.

Your response is very important to both the success of the survey and the ongoing research concerning the wetland. The wetland in its current state of degradation may not represent the best use of this valuable resource and your opinions and views are important for a meaningful assessment of the economic value of the restoration and preservation of the wetland.

Please return the completed form in the postage-paid envelope as soon as possible. If you have already returned your questionnaire thank you.

Thank you for your co-operation.

Yours faithfully

T Ndebele  
RESEARCHER

Vicky Forgie  
Supervisor

## APPENDIX 2d Final reminder letter

December 2008

Dear Householder

### Pekapeka Swamp Survey (Second Reminder)

On November 7, 2008, we mailed you a letter and a survey questionnaire for a study on the restoration and preservation of the Pekapeka Swamp asking you to complete and return the form to us as soon as possible. We have not had a response from you so far. We are writing to you again to kindly ask for your co-operation because it is of critical importance that all our questionnaires are returned. You do not have to know, reside close to, or to have visited the Pekapeka Swamp to complete the questionnaire.

We have enclosed a copy of the questionnaire and would be grateful if you could spare a few minutes of your time to fill it out. It will only take a few minutes to answer the questionnaire. Your response is important and will contribute greatly to the success of the study and help to better understand how people value restoration and preservation of important natural resources. We would be grateful if you could answer all the questions in the questionnaire and post it back as soon as possible - a postage-paid envelope is supplied for this purpose.

Thank you for your co-operation.

Yours faithfully

T Ndebele  
RESEARCHER

Vicky Forgie  
Supervisor

### APPENDIX 2.3 Variable description and coding for the Pekapeka Swamp Survey

APPENDIX 2.3 Variable description and coding for the Pekapeka Swamp Survey 2008

Variable Number	Variable Name	Description of Variable	Response Details	Response Code No
1	Ref	This is the form number which identifies respondent on the mailing list	Not Applicable	Number from 1 up to 1117
2	Response	Indicates when response was made	Returned undelivered First time response Response after first reminder Response after 2nd reminder No response	0 1 2 3 4
3 Q-1	Aware	Prior knowledge of the existence of Pekapeka Swamp	Yes No No response/missing value	1 0 *
4 Q-2	Wet-rec	Last 12 months participation in wetlands recreation measured in days	Number of days If Zero If blank	number 0 *
5 Q-3.1	Game	Game bird hunting as an important wetland activity	Not answered If selected If not selected	* 1 0
6 Q-3.2	Gundog	Gundog trails as an important wetland activity	Not answered If selected If not selected	* 1 0
7 Q-3.3	Fish	Fishing as an important wetland activity	Not answered If selected If not selected	* 1 0
8 Q-3.4	Photo	Photography as an important wetland activity	Not answered If selected If not selected	* 1 0
9 Q-3.5	Bird	Bird-watching as an important wetland activity	Not answered If selected If not selected	* 1 0
10 Q-3.6	Science	Scientific research as an important wetland activity	Not answered If selected If not selected	* 1 0
11 Q-3.7	Teach	Teaching and education as an important wetland activity	Not answered If selected If not selected	* 1 0
12 Q-3.8	Nature	Nature appreciation as an important wetland activities	Not answered If selected If not selected	* 1 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
13 Q-3.9	IWalk	Walking as an important wetland activity	Not answered If selected If not selected	* 1 0
14 Q-3.10	IPic	Picnics as an important wetland activity	Not answered If selected If not selected	* 1 0
15 Q-3.11	ISwim	Swimming as an important wetland activity	Not answered If selected If not selected	* 1 0
16 Q-3.12	IBoat	Boating as an important wetland activity	Not answered If selected If not selected	* 1 0
17 Q-3.13	ICamp	Camping as an important wetland activity	Not answered If selected If not selected	* 1 0
18 Q-3.14	IDon't	Don't undertake activity in wetlands	Not answered If selected If not selected	* 1 0
19 Q-3.15	IOther	Others (please specify)	Not answered If selected If not selected	* 1 0
20 Q-4.1	MGame	Game bird hunting as the main wetland activity	Not answered If selected If not selected	* 1 0
21 Q-4.2	MGundog	Gundog trails as the main wetland activity	Not answered If selected If not selected	* 1 0
22 Q-4.3	MFish	Fishing as the main wetland activity	Not answered If selected If not selected	* 1 0
23 Q-4.4	MPhoto	Photography as the main wetland activity	Not answered If selected If not selected	* 1 0
24 Q-4.5	MBird	Bird-watching as the main wetland activity	Not answered If selected If not selected	* 1 0
25 Q-4.6	MScience	Scientific research as the main wetland activity	Not answered If selected If not selected	* 1 0
26 Q-4.7	MTeach	Teaching and education as the main wetland activity	Not answered If selected If not selected	* 1 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
27 Q-4.8	MNature	Nature appreciation as the main wetland activity	Not answered If selected If not selected	* 1 0
28 Q-4.9	MWalk	Walking as the main wetland activity	Not answered If selected If not selected	* 1 0
29 Q-4.10	MPic	Picnics as the main wetland activity	Not answered If selected If not selected	* 1 0
30 Q-4.11	MSwim	Swimming as the main wetland activity	Not answered If selected If not selected	* 1 0
31 Q-4.12	MBoat	Boating as the main wetland activity	Not answered If selected If not selected	* 1 0
32 Q-4.13	MCamp	Camping as the main wetland activity	Not answered If selected If not selected	* 1 0
33 Q-4.14	MDon't	Don't undertake activity in wetlands	Not answered If selected If not selected	* 1 0
34 Q-4.15	MOther	Other as the main wetland activity	Not answered If selected If not selected	* 1 0
35 Q-5.1	FGame	Game bird hunting as a future wetland activity	Not answered If selected If not selected	* 1 0
36 Q-5.2	F Gundog	Gundog trails as a future wetland activity	Not answered If selected If not selected	* 1 0
37 Q-5.3	FFish	Fishing as a future wetland activity	Not answered If selected If not selected	* 1 0
38 Q-5.4	FPphoto	Photography as a future wetland activity	Not answered If selected If not selected	* 1 0
39 Q-5.5	FBird	Bird-watching as a future wetland activity	Not answered If selected If not selected	* 1 0
40 Q-5.6	FScience	Scientific research as a future wetland activity	Not answered If selected If not selected	* 1 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
41 Q-5.7	FTeach	Teaching and education as a future wetland activity	Not answered If selected If not selected	* 1 0
42 Q-5.8	FNature	Nature appreciation as a future wetland activity	Not answered If selected If not selected	* 1 0
43 Q-5.9	FWalk	Walking as a future wetland activity	Not answered If selected If not selected	* 1 0
44 Q-5.10	FPic	Picnics as a future wetland activity	Not answered If selected If not selected	* 1 0
45 Q-5.11	FSwim	Swimming as a future wetland activity	Not answered If selected If not selected	* 1 0
46 Q-5.12	FBoat	Boating as a future wetland activity	Not answered If selected If not selected	* 1 0
47 Q-5.13	FCamp	Camping as a future wetland activity	Not answered If selected If not selected	* 1 0
48 Q-5.14	FDon't	Don't undertake activity in wetlands	Not answered If selected If not selected	* 1 0
49 Q-5.15	FOther	Other as a future wetland activity	Not answered If selected If not selected	* 1 0
50 Q-6	Rare	Protecting rare wildlife	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
51 Q-7	Habitat	Protecting wildlife living areas	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
52 Q-8	Conserve	Conserving natural areas for educational and scientific study	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
53 Q-9	Scenic	Providing scenic beauty	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
54 Q-10	Commerce	Providing commercial income (e.g. tourism, eating etc)	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
55 Q-11	Rec	Providing recreational opportunities such as hunting, fishing, & wildlife viewing	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
56 Q-12	Flood	Providing flood control and storm buffering	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
57 Q-13	Pure	Providing water purification. Wetlands filter chemicals and nutrients from waterways	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
58 Q-14	Recharge	Providing ground water recharge and discharge	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
59 Q-15	Option	Knowing that in the future you have the option to go there if you choose to.	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
60 Q-16	Exist	Knowing the wetland exists	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
61 Q-17	Gen	Knowing that future generations will have the wetland	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
62 Q-18	Other1	Other (specify)	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
63 Q-19	Other2	Other (specify)	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
64 Q-20	Other3	Other (specify)	Not answered No Opinion Not Important Moderately Important Very Important Extremely Important	0 0 1 2 3 4
65 Q-21	Support	Support for environmental programme which does not directly cost the household any money	Not answered Yes No Not Sure	* 1 0 2

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
66 Q-21	Reason	Reason given for the response in Q-21	No reason given Reason given	* State reason
67 Q-22a	PIDays	Average annual potential days spent at the restored Pekapeka Swamp	Not answered Days If Zero	* Number 0
68 Q-22b.1	PIGame	Game bird hunting as an important potential wetland activity	Not answered If selected If not selected	* 1 0
69 Q-22b.2	PIGundog	Gundog trails as an important potential wetland activity	Not answered If selected If not selected	* 1 0
70 Q-22b.3	PIFish	Fishing as an important potential wetland activity	Not answered If selected If not selected	* 1 0
71 Q-22b.4	PIPhoto	Photography as an important potential wetland activity	Not answered If selected If not selected	* 1 0
72 Q-22b.5	PIBird	Bird-watching as an important potential wetland activity	Not answered If selected If not selected	* 1 0
73 Q-22b.6	PIScience	Scientific research as an important potential wetland activity	Not answered If selected If not selected	* 1 0
74 Q-22b.7	PITeach	Teaching and education as an important potential wetland activity	Not answered If selected If not selected	* 1 0
75 Q-22b.8	PINature	Nature appreciation as an important potential wetland activity	Not answered If selected If not selected	* 1 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
76 Q-22b.9	PIWalk	Walking as an important potential wetland activity	Not answered If selected If not selected	* 1 0
77 Q-22b.10	PIPic	Picnics as an important potential wetland activity	Not answered If selected If not selected	* 1 0
78 Q-22b.11	PISwim	Swimming as an important potential wetland activity	Not answered If selected If not selected	* 1 0
79 Q-22b.12	PIBoat	Boating as an important potential wetland activity	Not answered If selected If not selected	* 1 0
80 Q-22b.13	PICamp	Camping as an important potential wetland activity	Not answered If selected If not selected	* 1 0
81 Q-22b.14	PIDon't	Don't undertake activity in wetlands	Not answered If selected If not selected	* 1 0
82 Q-22b.15	PIOther	Others (please specify)(potential activities)	Not answered If selected If not selected	* 1 0
83 Q-22c.1	PMGame	Game bird hunting as the main potential wetland activity	Not answered If selected If not selected	* 1 0
84 Q-22c.2	PMGundog	Gundog trails as the main potential wetland activity	Not answered If selected If not selected	* 1 0
85 Q-22c.3	PMFish	Fishing as the main potential wetland activity	Not answered If selected If not selected	* 1 0
86 Q-22c.4	PMPhoto	Photography as the main potential wetland activity	Not answered If selected If not selected	* 1 0
87 Q-22c.5	PMBird	Bird-watching as the main potential wetland activity	Not answered If selected If not selected	* 1 0
88 Q-22c.6	PMIScience	Scientific research as the main potential wetland activity	Not answered If selected If not selected	* 1 0



Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
89 Q-22c.7	PMTeach	Teaching and education as the main potential wetland activity	Not answered If selected If not selected	* 1 0
90 Q-22c.8	PMNature	Nature appreciation as the main potential wetland activity	Not answered If selected If not selected	* 1 0
91 Q-22c.9	PMWalk	Walking as the main potential wetland activity	Not answered If selected If not selected	* 1 0
92 Q-22c.10	PMPic	Picnics as the main potential wetland activity	Not answered If selected If not selected	* 1 0
93 Q-22c.11	PMSwim	Swimming as the main potential wetland activity	Not answered If selected If not selected	* 1 0
94 Q-22c.12	PMBoat	Boating as the main potential wetland activity	Not answered If selected If not selected	* 1 0
95 Q-22c.13	PMCamp	Camping as the main potential wetland activity	Not answered If selected If not selected	* 1 0
96 Q-22c.14	PMDon't	Don't undertake activity in wetlands	Not answered If selected If not selected	* 1 0
97 Q-22c.15	PMOther	Other as the main wetland activity	Not answered If selected If not selected	* 1 0
98 Q-22d.1	PFGame	Game bird hunting as a potential future wetland activity	Not answered If selected If not selected	* 1 0
99 Q-22d.2	PFGundog	Gundog trails as a potential future wetland activity	Not answered If selected If not selected	* 1 0
100 Q-22d.3	PFFish	Fishing as a potential future wetland activity	Not answered If selected If not selected	* 1 0
101 Q-22d.4	PFPhoto	Photography as a potential future wetland activity	Not answered If selected If not selected	* 1 0
102 Q-22d.5	PFBird	Bird-watching as a potential future wetland activity	Not answered If selected If not selected	* 1 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
103 Q-22d.6	PFScience	Scientific research as potential a future wetland activity	Not answered If selected If not selected	* 1 0
104 Q-22d.7	PFTeach	Teaching and education as a potential future wetland activity	Not answered If selected If not selected	* 1 0
105 Q-22d.8	PFNature	Nature appreciation as a potential future wetland activity	Not answered If selected If not selected	* 1 0
106 Q-22d.9	PFWalk	Walking as a potential future wetland activity	Not answered If selected If not selected	* 1 0
107 Q-22d.10	PFPic	Picnics as a potential future wetland activity	Not answered If selected If not selected	* 1 0
108 Q-22d.11	PFSwim	Swimming as a potential future wetland activity	Not answered If selected If not selected	* 1 0
109 Q-22d.12	PFBoat	Boating as a potential future wetland activity	Not answered If selected If not selected	* 1 0
110 Q-22d.13	PFCamp	Camping as a potential future wetland activity	Not answered If selected If not selected	* 1 0
111 Q-22d.14	PFDon't	Don't undertake activity in wetlands	Not answered If selected If not selected	* 1 0
112 Q-22d.15	PFOther	Other as a future potential wetland activity	Not answered If selected If not selected	* 1 0
113 Q-23	Seed	Bid amount offered to respondent	NZ\$ amount	Number (\$amount) from 1 up to 200
114 Q-23	DC	Response to the Dichotomous choice bid offer	Not answered Yes No but willing to pay a lesser amount No. Not prepared to pay any amount We have no opinion	* 1 2 3 4

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
115 Q-23.3	O-Reason	Reason for zero valuation	Not answered Wetlands are not worth anything Refuse to place a \$value on wetlands Do not approve of the levy Can not afford to pay anything Other reasons	* 1 2 3 4 5
116 Q-23.4	No-op	Reasons given for no opinion	Not answered We don't really care about wetlands Can't decide without more information Our opinion wont make any difference Other reasons(specify)	* 1 2 3 4
117 Q-23	WTP <sub>OE</sub>	Maximum WTP response to the open ended question	Not answered NZ\$ amount If Zero	* \$ amount 0
118 Q-24	Self-gender	Gender of the person completing the form	Not stated Male Female	* 1 0
119 Q-24	Self-Age	Age of the person completing the form	Not stated Age in years	* number
120 Q-24	Self-Educ	Education of the person completing the form	Not stated Number of years If zero	* Number 0
121 Q-24	Self-Occ	Occupation of the person completing the form	Not stated State occupation	* occupation
122 Q-24	M1-gender	Gender of first member of family	Not stated Male Female	* 1 0
123 Q-24	M1-Age	Age of first member of family	Not stated Age in years	* number
124 Q-24	M1-Educ	Education of first member of family	Not stated Number of years If zero	* Number 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
125 Q-24	M1-Occ	Occupation of first member of family	Not stated State occupation	* occupation
126 Q-24	M2-gender	Gender of second member of family	Not stated Male Female	* 1 0
127 Q-24	M2-Age	Age of second member of family	Not stated Age in years	* number
128 Q-24	M2-Educ	Education of second member of family	Not stated Number of years If zero	* Number 0
129 Q-24	M2-Occ	Occupation of second member of family	Not stated State occupation	* occupation
130 Q-24	M3-gender	Gender of third member of family	Not stated Male Female	* 1 0
131 Q-24	M3-Age	Age of third member of family	Not stated Age in years	* number
132 Q-24	M3-Educ	Education of third member of family	Not stated Number of years If zero	* Number 0
133 Q-24	M3-Occ	Occupation of third member of family	Not stated State occupation	* occupation
134 Q-24	M4-gender	Gender of fourth member of family	Not stated Male Female	* 1 0
135 Q-24	M4-Age	Age of fourth member of family	Not stated Age in years	* number
136 Q-24	M4-Educ	Education of fourth member of family	Not stated Number of years If zero	* Number 0
137 Q-24	M4-Occ	Occupation of fourth member of family	Not stated State occupation	* occupation
138 Q-24	M5-gender	Gender of fifth member of family	Not stated Male Female	* 1 0
139 Q-24	M5-Age	Age of fifth member of family	Not stated Age in years	* number
140 Q-24	M5-Educ	Education of fifth member of family	Not stated Number of years If zero	* Number 0
141 Q-24	M5-Occ	Occupation of fifth member of family	Not stated State occupation	* occupation

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
142 Q-24	M6-gender	Gender of sixth member of family	Not stated Male Female	* 1 0
143 Q-24	M6-Age	Age of sixth member of family	Not stated Age in years	* number
144 Q-24	M6-Educ	Education of sixth member of family	Not stated Number of years	* Number 0
145 Q-24	M6-Occ	Occupation of sixth member of family	Not stated State occupation	* occupation
146 Q-24	M7-gender	Gender of seventh member of family	Not stated Male Female	* 1 0
147 Q-24	M7-Age	Age of seventh member of family	Not stated Age in years	* number
148 Q-24	M7-Educ	Education of seventh member of family	Not stated Number of years	* Number 0
149 Q-24	M7-Occ	Occupation of seventh member of family	Not stated State occupation	* occupation
150 Q-25	Ethnic	Respondent's ethnicity	Not Stated NZ European Maori Asian Other European Pacific Islander African Other (specify)	* 1 2 3 4 5 6 7
151 Q-26	Membership	Membership of an environmental group	Not answered Yes No	* 1 0
152 Q-27	Club	Membership to a water-based recreation club	Not answered Anglers' association Gamebird shooters assoc Both anglers' & shooters' Boating club Not a member of any Other (specify)	* 1 2 3 4 5 6
153 Q-28	Licence	Current fishing and/or shooting licence holding by any member of the household	Not answered Yes No	* 1 0

Variable Number	Variable Name	Description of Variable	Response Details	Response Code Number
154 Q-28	L-Type	If yes to above question, licence type	Not answered No licence held Gun/shooting Angling/fishing Both fishing and angling	* 0 1 2 3
155 Q-29	Income	Total gross annual household income in 2007	Not answered Less than 10,000, 10,000 – 19,999 20,000 – 29,999 30,000 – 39,999 40,000 – 49,999 50,000 – 59,999 60,000 – 69,999 70,000 – 79,999 80,000 – 89,999 90,000 – 99,999 100,000 – 104,999 110,000 – and over	* 1 2 3 4 5 6 7 8 9 10 11 12
156 Q-30	Comment	Any comments	comment	State comment number
157	Distance	Distance from address to the site	Distance in km	comment number
158	Comment	Comments by respondent + general observation	Comment	Comment
159	Family	Family size	Number in family	number
160	Total family age	Total family age	Total age of family	number
161	Others	Specify	statement	statement
162	Validity	Indicates type of response	Genuine zero Valid non-zero Valid non-zero incomplete Inconsistent valuation Protests No opinion Does not wish to participate/returned undelivered Incomplete- no valuation No response	0 1 2 3 4 5 6 7 8 9

## APPENDIX 3

NOAA Blue-ribbon panel's testing protocol (Source: Bateman *et al.*, 1995)

1. For a single dichotomous question (yes-no type) format, a total sample size of at least 1000 respondents is required. Clustering and stratification issues should be accounted for and random sub-sampling will be required to obtain a bid curve. Testing for interviewer and wording biases is also recommended.
2. High non-response rates would render the survey unreliable.
3. Face-to-face interviewing is likely to yield the most reliable results.
4. Full reporting of data and questionnaires is required for good practice.
5. Pilot surveying and pre-testing are essential elements in any CV study.
6. A conservative design more likely to underestimate WTP is to be preferred to one likely to over estimate WTP.
7. WTP format is preferred.
8. The valuation question should be posed as a vote on a referendum, i.e., a dichotomous choice question related to the payment of a particular level of taxation.
9. Accurate information on the valuation situation must be presented to respondents; particular care is required over the use of photographs.
10. Respondents must be reminded of the status of any undamaged possible substitute commodities.
11. Time-dependent measurement noise should be reduced by averaging across independently drawn samples taken at different points in time.
12. A "no-answer" option should be explicitly allowed in addition to the "yes" and "no" vote options on the main valuation question.
13. Yes and no responses should be followed up by the open-ended question: "why did you vote yes/no?"
14. Cross-tabulations: the survey should include a variety of other questions that help to interpret the responses to the primary valuation question, i.e., income, distance to the site, prior knowledge of the site, etc.
15. Respondents must be reminded of alternative expenditure possibilities, especially when "warm-glow" effects are likely to be prevalent (i.e., purchase of moral satisfaction through the act of charitable giving).

APPENDIX 4.1      Response analysis

Bid Amount (NZ\$)	Sub-sample	Returned	undelivered	Responses Before deadline		Responses After First Reminder		Responses After Second Reminder		No response	
		№	№	№	%	№	%	№	%	№	%
1.00	30	1	3.33	4	13.33	2	6.67	4	13.33	19	63.33
10.00	35	4	11.43	5	14.29	3	8.57	6	17.14	17	48.57
20.00	40	5	12.50	8	20.00	1	2.50	8	20.00	18	45.00
30.00	64	2	3.13	8	12.50	7	10.94	11	17.19	36	56.25
40.00	87	6	6.90	13	14.94	7	8.05	18	20.69	43	49.43
50.00	101	13	12.87	24	23.76	7	6.93	14	13.86	43	42.57
60.00	87	4	4.60	13	14.94	3	3.45	15	17.24	52	59.77
70.00	80	5	6.25	18	22.50	10	12.50	12	15.00	35	43.75
80.00	80	7	8.75	22	27.50	5	6.25	10	12.50	36	45.00
90.00	68	9	13.24	13	19.12	6	8.82	15	22.06	25	36.76
100.00	65	4	6.15	9	13.85	2	3.08	13	20.00	37	56.92
120.00	50	4	8.00	10	20.00	7	14.00	3	6.00	26	52.00
140.00	50	2	4.00	8	16.00	1	2.00	12	24.00	27	52.00
160.00	46	4	8.70	8	17.39	1	2.17	8	17.39	25	54.35
180.00	40	7	17.50	7	17.50	0	0.00	9	22.50	17	42.50
200.00	35	3	8.57	7	20.00	1	2.86	7	20.00	17	48.57
<b>TOTAL</b>	<b>958</b>	<b>80</b>	<b>8.35</b>	<b>177</b>	<b>18.48</b>	<b>63</b>	<b>6.58</b>	<b>165</b>	<b>17.22</b>	<b>473</b>	<b>49.48</b>

#### APPENDIX 4.2 Item non-response

Item	Non-response	%
Aware	42	10.5
Wet-rec	47	11.8
Support	14	3.5
Pday	35	8.8
DC	21	5.3
WTPOE	21	5.3
Self gender	13	3.2
Self Age	40	10.0
Self educ	96	24.1
Ethnicity	13	3.2
Membership	12	3.0
Income	45	11.3

#### APPENDIX 4.3 Response rates by area

<i>Area</i>	<i>Sub-sample</i>	<i>Undelivered</i>	<i>Response</i>	<i>No Response</i>	<i>Response Rate</i>
Ahuriri	6	0	2	4	33.33
Awatoto	1	0	0	1	0.00
Bay View	13	1	8	4	66.67
Bluff Hill	2	0	1	1	50.00
Bridge Pa	1	0	1	0	100.00
Clive	11	0	6	5	54.55
Crownthorpe	3	1	0	2	0.00
Dannevirke	56	7	22	27	44.90
Eskdale	3	0	2	1	66.67
Fernhill	2	0	0	2	0.00
Flaxmere	28	3	8	17	32.00
Green meadows	22	4	8	10	44.44
Hastings	190	18	75	97	43.60
Haumoana	9	0	4	5	44.44
Havelock North	81	6	35	40	46.67
Karamu	1	0	1	0	100.00
Longlands	1	0	0	1	0.00
Mahora	1	0	0	1	0.00
Mangateretere	3	1	1	1	50.00
Maraekakaho	5	0	2	3	40.00
Maraenui	5	1	0	4	0.00
Mayfair	1	0	1	0	100.00
Meeanee	5	1	2	2	50.00
Napier	184	9	84	91	48.00
North Mahora	1	0	0	1	0.00
Okawa	1	0	0	1	0.00
Paki - Paki	5	0	2	3	40.00
Pakowhai	1	1	0	0	-
Patoka	2	0	1	1	50.00
Pirimai	14	2	6	6	50.00
Poraiti	9	0	6	3	66.67



<i>Area</i>	<i>Sub-sample</i>	<i>Undelivered</i>	<i>Response</i>	<i>No Response</i>	<i>Response Rate</i>
Poukawa	1	0	0	1	0.00
Puketapu	4	2	0	2	0.00
Putorino	2	1	0	1	0.00
Sherenden	1	0	0	1	0.00
Tamatea	22	0	15	7	68.18
Taradale	97	8	48	41	53.93
Te Awanga	5	1	3	1	75.00
Te Haroto	1	1	0	0	-
Tomoana	2	0	1	1	50.00
Twyford	1	0	1	0	100.00
Waimarama	2	2	0	0	-
Waipatu	1	0	1	0	100.00
Waipukurau	87	4	37	46	44.58
Wairoa	57	5	18	34	34.62
West Longlands	1	1	0	0	-
West Raureka	1	0	0	1	0.00
West Shore	3	0	1	2	33.33
Whakatu	2	0	0	2	0.00
Whirinaki	1	0	1	0	100.00

#### APPENDIX 4.4 Summary results for logit Model C

Table 6.14i Model Fit Statistics

Criterion*	Intercept Only	Intercept and Covariates
AIC	319.940	262.379
SC	323.383	296.803
-2 Log L	317.940	242.379

Table 6.14j Analysis of Maximum Likelihood Estimates for model C

Variable	DF	Coefficient	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-3.2250	1.2155	7.0398	0.0080
MIncome	1	0.000011	5.525E-6	4.2245	0.0398
Score	1	0.3296	0.2196	2.2536	0.1333
Supports	1	2.7178	1.0742	6.4010	0.0114
Seed	1	-0.0147	0.00354	17.2173	<.0001
Educ	1	-0.0846	0.0644	1.7225	0.1894
Distance	1	-0.0140	0.00706	3.9400	0.0471
Membership	1	0.9301	0.4632	4.0316	0.0447
Activity2	1	0.0831	0.0294	7.9564	0.0048
Gender	1	0.3711	0.3179	1.3622	0.2432

Testing Global Null Hypothesis: Beta = 0

**Test**

LR	75.5609	<.0001
Score	60.8347	<.0001
Wald	44.1463	<.0001

Residual Chi-Square Test	1.0077	0.9619
Hosmer and Lemeshow Goodness-of-Fit Test (with 8 DF)	8.9419	0.3472

R – Square	0.2790	Max-rescaled R – Square	0.3732
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Table 6.14k Odds Ratio estimates

Effect	Point Estimate	95% Wald Confidence Interval	
		Lower CL	Upper CL
MIncome	1.000	1.000	1.000
Score	1.390	0.904	2.138
Supports	15.147	1.845	124.365
Seed	0.985	0.979	0.992
Educ	0.919	0.810	1.043
Distance	0.986	0.973	1.000
Membership	2.535	1.022	6.284
Activity2	1.087	1.026	1.151
Gender	1.449	0.777	2.703

Table 6.14l Association of Predicted Probabilities and Observed Responses

Percent Concordant	81.3	Somers' D	0.627
Percent Discordant	18.6	Gamma	0.628
Percent Tied	0.1	Tau-a	0.312
Pairs	13208	c	0.814

