

## **The pest-management attitude (PMA) scale: a unidimensional and versatile assessment tool**

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## Appendix S1. Environmental attitudes and Hauraki Gulf islands: A survey of public opinions

### About Your Island Property (If you own more than one property on the same island please fill out the survey based on what you consider to be the primary property)

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**1. Please tick the island that your property is located on.**

- Great Barrier Island                       Kawau Island  
 Rakino Island                                       Waiheke Island

**2. Please choose from one of the below to describe the primary status of your island property.**

- Permanent residence                       Holiday home  
 Vacant section                                       Investment/rental property  
 Business     Other \_\_\_\_\_

**3. How much time approximately would you spend on the island in total over a typical 12 month period? Please write the total number of months below.**

\_\_\_\_\_

**4. How long have you owned your island property? Please write the number of years below.**

\_\_\_\_\_

**5. Would you consider your property to be in a remote location of the island?**

- Yes                       No

### Environmental Attitudes

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**6. Listed below are statements about the relationship between humans and the environment. For each one, please indicate whether you STRONGLY AGREE, MILDLY AGREE, are UNSURE, MILDLY DISAGREE or STRONGLY DISAGREE with it.**

DO YOU AGREE OR DISAGREE THAT:	STRONGLY AGREE	MILDLY AGREE	UNSURE	MILDLY DISAGREE	STRONGLY DISAGREE
1. We are approaching the limit of the number of people the earth can support					
2. Humans have the right to modify the natural environment to suit their needs					
3. When humans interfere with nature it often produces disastrous consequences					
4. Human ingenuity will ensure that we do NOT make the earth unliveable					
5. Humans are severely abusing the environment					
6. The earth has plenty of natural resources if we just learn how to develop them					
7. Plants and animals have as much right as humans to exist					
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations					
9. Despite our special abilities humans are still subject to the laws of nature					
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated					

11. The earth is like a spaceship with very limited room and resources					
12. Humans were meant to rule over the rest of nature					
13. The balance of nature is very delicate and easily upset					
14. Humans will eventually learn enough about how nature works to be able to control it					
15. If things continue on their present course, we will soon experience a major ecological catastrophe					

7. a) Are you a member of an environmental or conservation organisation?

- No                       Yes (if yes please answer 7b.)

b) and if yes, please indicate across which of the following regions. Please tick all that are applicable.

- Your island                       National                       International

8. Have you actively participated in conservation in the last 12 months. Active participation includes conservation events such as, but not limited to, tree planting projects, weed control, helping build tracks, or pest control.

- No                       Yes

9. Please tick one option below that best describes the MAIN value the island holds for you. Please tick only one.

Value	Tick one
The remoteness and isolation	
The sense of community	
The landscape and environment	
The lifestyle	
The sanctity it provides	
The opportunity it provides for business and employment	

10. Please tick one statement below that best describes your MAIN concern for the environment. Please tick only one.

Environment Concern	Tick one
I am concerned for the future existence of animals and plants	
I am concerned for the future impact on humanity	
I am concerned for the future ability to benefit from the environment	

11. When concerned about environment or conservation issues that could affect you and/or your island community have you ever carried out any of the following actions? Please tick all that are applicable.

Action you would take	Tick
Attend a public meeting	
Donate money to and/or join an environmental group	
Find out more about the issue	
Join a community group campaigning for the issue	
Nothing	
Sign a petition	
Vote for a candidate in an election, in part because he or she shared your views on the issue	
Write a letter to the local newspaper	
Write a letter or talk to your local Councillor or Member of Parliament (MP)	

**12. Please rate your level of satisfaction with ‘The quality of New Zealand’s natural environment’. 0=Completely Dissatisfied, 1 to 9=Somewhat Satisfied, 10=Completely satisfied. Circle one number.**

Completely Dissatisfied	Somewhat Satisfied									Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10

**13. Listed below are statements about introduced pest species and their control. For each one, please indicate whether you STRONGLY AGREE, MILDLY AGREE, are UNSURE, MILDLY DISAGREE or STRONGLY DISAGREE with it.**

DO YOU AGREE OR DISAGREE THAT:	STRONGLY AGREE	MILDLY AGREE	UNSURE	MILDLY DISAGREE	STRONGLY DISAGREE
1. Pest species are a significant conservation problem					
2. Pest control is a losing battle					
3. The benefits of pest control outweigh the risks to native species					
4. Enough pest control is being done already					
5. Native species have greater rights than pest species					
6. Today’s pest control methods are NOT proven to be effective					
7. Investment in pest control is beneficial for future generations					
8. Pest control is less important than other conservation issues					
9. Pest control is best done by experts					
10. Pest control has unknown side effects					
11. Humans are the fundamental cause of pest species					
12. Pest control interferes with nature					

**14. Below are statements about conservation in New Zealand. For each one please indicate if you STRONGLY AGREE, MILDLY AGREE, NEITHER AGREE OR DISAGREE, MILDLY DISAGREE or STRONGLY DISAGREE with it.**

DO YOU AGREE OR DISAGREE THAT	STRONGLY AGREE	MILDLY AGREE	NEITHER AGREE OR DISAGREE	MILDLY DISAGREE	STRONGLY DISAGREE
1. Protecting nature doesn’t make any difference to me or my life					
2. Protection of NZ’s native forests and species is important for us all					
3. Conservation is good for NZ’s economy					
4. Having natural places to visit is very important to me					
5. Commercial development should not override conservation demands					
6. Protection of NZ’s native forests and species is important for tourism					
7. I’ve got enough to worry about than care about conservation					
8. I don’t have the knowledge or skills to get involved in conservation					

15. As well as conservation do you consider any of the below sectors to additionally benefit from pest control (tick those that apply):

Sector	Tick
Agricultural	
Economic	
Ecosystem services	
Financial	
Human health & safety	
Threatened species translocations	
Tourism	

16. Below are some concerns people have about rat control. Although you may identify with more than one, please tick only one statement below that best describes your MAIN concern.

Please tick only one.

Concern	Tick one
Effectiveness of techniques to kill target species	
Influence of pest removal on other parts of the ecosystem	
Impact of poison on non-target species	
Lack of public consultation	
Residual effects of poison in water ways	
Risk of poison to pets, livestock and people	
The use of poisons over other methods	

17. a) Have you ever undertaken rat control either on your property or for conservation?

- Yes (go to question 18)                       No (go to question 17b)

b) and if not, please indicate the reason why below

- I don't know how to control them  
 I choose not to control them  
 I don't like poisons  
 Rats are not a problem on my property

18. Which one of the following best describes the extent to which you are aware of rat control METHODS? Please tick only one.

Level of Awareness	Tick one
I have studied them and have a good <b>understanding</b> of the technicalities	
I have heard about them and could probably <b>explain</b> them to a friend	
I have heard of them and know <b>something</b> about them	
I have heard of them but know <b>little or nothing</b> about them	
I have <b>not</b> heard of them and know <b>nothing</b> about them	

19. Below are statements people have made about science. Please indicate if you **STONGLY AGREE**, **MILDLY AGREE**, **NEITHER AGREE OR DISAGREE**, **MILDLY DISAGREE** or **STRONGLY DISAGREE** with it.

DO YOU AGREE OR DISAGREE THAT	STRONGLY AGREE	MILDLY AGREE	NEITHER AGREE OR DISAGREE	MILDLY DISAGREE	STRONGLY DISAGREE
1. I enjoy finding out about new ideas in science					
2. The government should fund scientific research, even if we can't be sure of the economic benefits					
3. If you are told something has been scientifically proven, you can have confidence in the results					

4. When scientists say they are uncertain about something, they are telling the truth					
5. An important part of science is persuading other scientists to agree with your theories					

**20. Would you support the complete removal of rats permanently (i.e. eradicate) from your island? Please choose one of the following.**

- Yes       No       Unsure       Depends on the details

**21. Do you have any general comments regarding rat control on YOUR ISLAND?**

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## About You / Your Household

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**22. Are you?**

- Male       Female

**23. In what year were you born?**

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**24. Which ethnic group(s) do you belong to (tick as many as applicable)?**

- New Zealand European       Māori  
 European       Pacific Islander  
 Chinese       Indian  
 Other – please specify \_\_\_\_\_

**25. What is your highest formal education qualification (tick one)?**

- No qualification  
 Secondary school qualification (NCEA Level 1 to 3 – including School Certificate, Sixth Form Certificate & University Entrance/Bursary)  
 Trade Certificate and/or Foundation Certificate  
 Diploma  
 Bachelor Degree or Bachelor Honours Degree  
 Postgraduate Certificate or Diploma  
 Masters Degree  
 Doctoral Degree  
 Other – please print \_\_\_\_\_

**26. Which one of these best describes your main source of income over the last 12 months (tick one)?**

- Wages, salary, commissions, bonuses, etc., paid by my employer  
 Self-employment, or business I own and work in  
 Interest, dividends, rent, other investments  
 Government beneficiary (e.g. benefit, pension, superannuation, ACC, etc)  
 Other sources of income, counting support payments from people who do not live in my household  
 No source of income during that time

**27. What is your total gross income range (before tax is deducted) (tick one)?**

- |   |  |
|---|--|
| <input type="checkbox"/> zero                 | <input type="checkbox"/> \$1 – \$5,000         |
| <input type="checkbox"/> \$5,001 – \$10,000   | <input type="checkbox"/> \$10,001 – \$15,000   |
| <input type="checkbox"/> \$15,001 – \$20,000  | <input type="checkbox"/> \$20,001 – \$25,000   |
| <input type="checkbox"/> \$25,001 – \$30,000  | <input type="checkbox"/> \$30,001 – \$35,000   |
| <input type="checkbox"/> \$35,001 – \$40,000  | <input type="checkbox"/> \$40,001 – \$50,000   |
| <input type="checkbox"/> \$50,001 – \$60,000  | <input type="checkbox"/> \$60,001 – \$70,000   |
| <input type="checkbox"/> \$70,001 – \$100,000 | <input type="checkbox"/> \$100,001 – \$150,000 |
| <input type="checkbox"/> \$150,001 or more    |  |

**28. Tick as many boxes as you need to show all the people who live in the same household as you.**

- my legally married partner or legally registered civil union partner
- my de facto partner
- my mother and/or father
- my son(s) and/or daughter(s)
- my brother(s) and/or sister(s)
- my flatmate
- I live alone
- other (please specify) \_\_\_\_\_

**29. Do you have any of the following pets?**

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| <input type="checkbox"/> cat(s)       | <input type="checkbox"/> bird(s) |
| <input type="checkbox"/> dog(s)       | <input type="checkbox"/> fish    |
| <input type="checkbox"/> other: _____ |                                  |

## Appendix S2. Predator free Wellington. 2017 survey of the public.

Page 1

### ***Firstly, a few questions about you and your background***

*Please note that those questions marked with a red asterisk (\*) must be answered in order to progress with the survey. These are mandatory because your answers to those questions impact what further questions will be presented to you.*

**1A** In which of the following areas do you currently reside? \*

- Wellington City
- Porirua
- Kapiti
- Lower Hutt
- Upper Hutt
- Wairarapa
- Other

If your answer to question 1A.WellingtonRegion is "Wellington City" then move to page 2  
Otherwise move to page 22



**2A** Which suburb do you live in? \*

**2B** What type of dwelling do you reside in? \*

- Standalone house on a section
- Townhouse, unit or terraced house WITH a private section
- Townhouse, unit or terraced house WITHOUT a private section
- Lifestyle block or farm homestead
- Low or high rise apartment block

**2C** And how long have you lived in Wellington City?

- Less than 3 months
- 3 to 6 months
- 7 to 12 months
- More than 1 year to 2 years
- More than 2 years to 5 years
- More than 5 years to 10 years
- More than 10 years

**3A**

Are you a member of an environmental or conservation organisation, or another organisation that also undertakes some conservation activities?

- Yes
- No

**3B**

Are you a member of a Predator Free community group that is already operating in Wellington City (for example, Predator Free Crofton Downs or Predator Free Ngaio)?

- Yes
- No

**3C**

Have you actively participated in conservation in the last 12 months?

*Active participation includes conservation efforts such as (but not limited to): tree planting projects, weed control, helping to build tracks and/or predator control.*

- Yes
- No

**4A**

Have you ever done any of the following when concerned about the environment or conservation issues that could affect you or your local community?

*Please select all that apply.*

- Attended a public meeting
- Donated money to and/or joined an environmental group
- Found out more about an issue
- Joined a community group campaigning for the issue
- Signed a petition
- Voted for a candidate in an election, in part because he or she shared your views on an issue
- Wrote a letter to the local newspaper
- Wrote a letter or spoke to your local Councillor or Member of Parliament (MP)
- No, I have not done any of these



**6A**

Please rate your level of agreement with the following statements about introduced predator species in New Zealand and their control. \*

*Reminder: when we refer to 'predators' in this survey, we are referring to rats, stoats and possums only.*

	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
Predator species are a significant conservation problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Predator control interferes with nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The benefits of predator control outweigh the risks to native species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Predator control has unknown side effects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Native species have greater rights than predator species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Today's predator control methods are NOT proven to be effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Investment in predator control is beneficial for future generations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Predator control is less important than other conservation issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NOT enough predator control is being done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**7A** Do you have any concerns about predator control? \*

- Yes
- No
- Not sure

If your answer to question 7A.ConcernsPredatorControl is Yes then answer this question

**7B**

What are the main concerns you have about predator control? Please describe these briefly in the space provided.

**8A**

Would you support the eradication of predator species (i.e. rats, stoats and possums) in Wellington? \*

- Yes
- No
- Not sure
- Would depend on the details

If your answer to question 8A.Eradication is Would depend on the details then answer this question

**8B** Can you please explain your answer briefly?

***Your previous experience(s) with predator control***

**9A** Have you ever undertaken predator control either on your property or for conservation? \*

- Yes, I am CURRENTLY undertaking predator control
- Yes, I have PREVIOUSLY undertaken predator control
- No, I have never undertaken predator control

If your answer to question 9A.PreviousPredatorControl is Yes, I am CURRENTLY undertaking predator control or your answer to question 9A.PreviousPredatorControl is Yes, I have PREVIOUSLY undertaken predator control then move to page 10  
Otherwise move to page 11



**10A**

What type(s) of predator control have you previously undertaken (or are you currently undertaking)?

*Please select all that apply.*

- Trapping
- Bait
- Other (please specify)

**10B** For what reason(s) did you undertake (or are you undertaking) predator control?

*Please select all that apply.*

- Because of the threat to native species
- Because of the threat to my own animals
- I didn't like having predators on (or near) my property
- They were damaging my property
- They carry disease
- Other (please specify)

**10C**

And was the predator control that you undertook (or that you are currently undertaking)...?

*Please select all that apply.*

- Part of a wider predator control programme in your area
- An individual operation you chose to undertake
- Other (please specify)

If your answer to question 9A.PreviousPredatorControl is Yes, I am CURRENTLY undertaking predator control then move to page 18

Otherwise move to page 12

**11A** For what reason(s) have you not undertaken predator control previously?

*Please select all that apply.*

- I don't know how to control them
- I choose not to control them
- I don't like poisons
- I don't like traps
- It's too expensive
- I don't want to handle dead animals
- Predators are not a problem on my property
- It's just not something I've ever thought about doing
- Other (please specify)

**11B**

Which ONE of the following best describes the extent to which you are aware of predator control methods?

- I have studied them and have a good understanding of the methods and tools available
- I have heard about them and could probably explain them to someone else
- I have heard of them and know something about them
- I have heard of them but know little or nothing about them
- I have not heard of them and know nothing about them

If your answer to question 2B.DwellingType is Townhouse, unit or terraced house WITHOUT a private section or your answer to question 2B.DwellingType is Low or high rise apartment block then move to page 18  
Otherwise stay on this page

***How you feel about being involved in predator control in the future***

*Please note that when we say bait we are talking about poison bait. There are a range of both bait and trap options available in New Zealand, each with their own benefits and preferred uses. Both baits and traps should be in stations or tunnels to keep children and pets safe.*

**12A**

Thinking generally, would you consider being directly involved in predator control for your local area? \*

*This could involve having an approved trap and/or approved bait on your property.*

- Yes
- No
- Not sure
- Would depend on the details

**13A**

Which of the following predator control methods would be your preference for use in your local area? \*

- Approved traps
- Approved bait
- No preference - either or a mix of approved traps and bait depending on what would be most effective
- Not sure - I would need more information on the methods available
- None - I do not want any predator control undertaken in my area
- Other (please specify)

If your answer to question 13A.ControlMethodPreference is "None - I do not want any predator control undertaken in my area" or your answer to question 13A.ControlMethodPreference is "No preference - either or a mix of approved traps and bait depending on what would be most effective" or your answer to question 13A.ControlMethodPreference is "Not sure - I would need more information on the methods available" or your answer to question 13A.ControlMethodPreference is "Other (please specify)" then move to page 18  
Otherwise move to page 14

If your answer to question 13A.ControlMethodPreference is "Approved traps" and your answer to question 12A.DirectInvolvement is Yes then stay on this page

If your answer to question 12A.DirectInvolvement is No then move to page 18

Otherwise move to page 16

**14A**

If there was a predator control programme set up in your area that promoted the use of traps, how likely would you be to have an approved TRAP on your property as a part of the programme?

- Very likely
- Likely
- Neither likely nor unlikely
- Unlikely
- Very unlikely
- Not sure

**15A**

Depending on the characteristics of the local environment (e.g. the amount of bush and steep hills in the area, amongst other things), different predator control methods can be more or less effective. If traps were not a practical predator control method in your area, how likely would you be to have approved BAIT on your property as a part of a wider predator control programme?

- Very likely
- Likely
- Neither likely nor unlikely
- Unlikely
- Very unlikely
- Not sure

**15B**

Are there any comments that you would like to share with us regarding your answer? If so, please enter these in the space below.

If your answer to question 13A.ControlMethodPreference is "Approved bait" and your answer to question 12A.DirectInvolvement is Yes then stay on this page  
Otherwise move to page 18

**16A**

If there was a predator control programme set up in your area that promoted the use of bait, how likely would you be to have approved BAIT on your property as a part of the programme?

- Very likely
- Likely
- Neither likely nor unlikely
- Unlikely
- Very unlikely
- Not sure

**17A**

Depending on the characteristics of the local environment (e.g. the amount of bush and steep hills in the area, amongst other things), different predator control methods can be more or less effective. If bait was not a practical predator control method in your area, how likely would you be to have an approved TRAP on your property as a part of a wider predator control programme?

- Very likely
- Likely
- Neither likely nor unlikely
- Unlikely
- Very unlikely
- Not sure

**17B**

Are there any comments that you would like to share with us regarding your answer? If so, please enter these in the space below.



***Finally, a few background questions about you and your household so we know we've heard from a wide range of Wellingtonians***

**18A** Are you...?

- Male
- Female
- Gender diverse
- Prefer not to say

**18B** Which of the following age groups do you fall into?

- Under 18
- 18 to 29
- 30 to 39
- 40 to 49
- 50 to 64
- 65 years or older

**18C** Which ethnic group(s) do you belong to?

*Please select all that apply.*

- NZ European/Pakeha
- Māori
- Pacific Islander
- Asian
- European (other)
- Other (please specify)

**19A** Do you...?

- Own your home
- Rent
- Other (please specify)

**19B** Which of the following best describes your household?

- Younger couple without children
- Older couple without children or without any children living at home
- Household with youngest child under 5
- Household with youngest child 5 to 13
- Household with youngest child 14 or over
- Single/one person household
- Flat - not a family home
- Other (please specify)

**20A** Do you have any of the following pets?

*Please select all that apply.*

- Cat(s)
- Dog(s)
- Bird(s)
- Rabbit(s) and/or guinea pig(s)
- Chicken(s)
- Fish

**20B** Does your household regularly compost its organic matter?

- Yes
- No

Page 21

## 21A

Are there any final comments that you'd like to share with us regarding the topics raised in this survey?

Now the survey is complete

Page 22

Thanks for your interest in this survey. Unfortunately only those who currently reside in Wellington City are eligible to complete it.

Now the survey is complete

That's all the questions we have for your today. Thanks very much for taking the time to share your thoughts with us; we really appreciate it!

### **Want to find out more?**

If you haven't already, please visit our website for further project details:

<http://wellington.govt.nz/predatorfree>.

Check out the 'Get involved' section for things you can do - including signing up to the Predator Free Wellington e-newsletter. We'll be including a summary of the results of this survey in an upcoming issue, so if you'd like to see the results make sure you sign up!

**Absolutely Positively**  
**Wellington City Council**  
Me Heke Ki Pōneke

**NEXT**  
**FOUNDATION**  
Investing in our land, our people

  
**greater WELLINGTON**  
REGIONAL COUNCIL  
Te Pane Matua Taiao