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Pacific Conservation Biology

#### Supplementary Material

# Barriers to volunteering and other challenges facing community-based conservation in Aotearoa New Zealand

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## Supplementary material Table S1

	CBCG Name	I	S	Website/Facebook	Mission Statement	Local Activities
	Department of Conservation (DOC)	~	~	https://www.doc.govt.nz/ https://www.facebook.co m/docgovtnz	DOC is the government agency charged with conserving New Zealand's natural and historic heritage. They work in partnership with iwi, community groups and businesses to achieve more conservation.	
	Environment Network Manawatu (ENM)	~	~	https://enm.org.nz/ https://www.facebook.co m/EnvironmentManawatu	ENM is the environment hub for the Manawatū Region with the key purpose of facilitating and enabling communication, cooperation, and increasing collective action amongst its member groups and the wider community.	
1	A Rocha (Palmerston North branch)	1	×	https://www.naturespace. org.nz/groups/rocha- aotearoa-new-zealand	A Rocha's mission is to protect and restore the environment through CBC projects, research, and education. Specifically, by having well-resourced CBC projects of local, regional and national significance, high- quality educational experiences, and communities caring for creation and exploring ways for sustainable living.	The local Palmerston North branch organizes seed collection, tree planting and working bees within the surrounding area such as at Pohangina, Pitt Park and the Longburn Adventist College.
2	Castlecliff Coast Care		~	https://www.naturespace. org.nz/groups/castlecliff- coast-care	Castlecliff Coast Care's mission is to have an enhanced community facility at Castlecliff beach. The purpose of the group is to stabilise and enhance the biodiversity of the dunes by planting native plants, developing community ownership of the project by participation and education, and to provide voluntary work opportunities for those trying to become employed.	Castlecliff Coast Care has a variety of activities dependant on the season. In the winter they do planting on the dunes, while in summer their top priority is mulching and watering. At other times they undertake education activities, weeding, and general maintenance of the re-planted areas. They have also recently set up a pest monitoring scheme.

3	Ahimate Reserve Community	~	✓ 	https://www.facebook.co m/ahimatereserve/	Ahimate Reserve Community's mission is to promote Ahimate reserve as a community asset.	Ahimate Reserve Community has many events on their Facebook page, and regularly organise working bees and other events to help with the upkeep and development of the reserve.
4	Pit Park people	*	V	https://www.naturespace. org.nz/groups/pit-park- people-society-inc	Pit Park People is a community of volunteers in partnership with PNCC, with the mission of creating and maintaining a recreation space in a disused clay quarry.	The pit is now a lush, restored habitat which attracts native birds into the urban environment. Progress on the park continues, with volunteers raising native grasses and shrubs from seed, planting plants, and regular maintenance and working bees (held on the third Sunday of each month from 1:30- 3:30pm).
5	Green Corridors	×	V	https://www.pncc.govt.nz /council-city/what-were- doing/biodiversity/green- corridors/	Green Corridors' aim is to build corridors of native vegetation along the streams spanning from the Tararua Ranges to the Manawatu River. The Green Corridors programme enhances areas of native bush along streams, provides a place for wildlife to thrive, improves water quality, and creates open green spaces from the Tararua Ranges to the Manawatū River.	Green Corridors is a voluntary group that works with the council to plan and oversee the planting of reserve areas to encourage native biodiversity. The group has given considerable time and expertise to establishing a series of revegetation projects and continues to seek new locations for further green corridor planting in the city. The group aims to plant 10,000 plants a year. The planting season usually runs from May to September. Outside the planting season, the group plans future planting, raises seedlings and maintains existing areas.
	RECAP		~	https://recap.org.nz/ https://www.facebook.co m/ResilienceAshhurstPoha ngina	Working to create social and ecological resilience at the local level to changes in climate, external resource supply and global finance. Workshops, courses, a community garden and orchard.	There is a range of volunteer roles available for anyone who is interested, from gardening to governance, from annual to weekly support. RECAP are also grateful for opportunities to work in partnership with other community groups. They also have weekly working bees.

7	Keeble's Bush Trust	~	✓	https://enm.org.nz/direct ory/keebles-bush-trust	Keeble's Bush Trust's main objective is the maintenance of a 23 hectare protected bush reserve considered to be one of the finest remaining examples of podocarp broadleaf lowland forest in the Manawatū.	Restoration efforts include weed and pest control, and planting natives.
	Rangiwahai Environmental Arts Centre Trust (REACT)	~	~	https://www.rangienviroa rtscentre.org/	An Environmental Arts Centre that promotes sustainability in creativity, with an emphasis on recycling and growing your own resources.	Events and local activities on webpage and Facebook are outdated.
9	Manawatu Estuary Trust	~	~	https://www.metrust.org. nz/	The Manawatu Estuary Trust is a conservation group dedicated to looking after the Manawatu River estuary. The trust's main focuses are education, protection and restoration of the estuary.	The trust is involved in a lot of environmental activities, focused mainly on education, protection and restoration of the estuary. (Comprehensive list on their website)
10	Save our River Trust	1	V	http://www.foxton.org.nz /sort.html https://www.facebook.co m/FoxtonSaveOurRiverTru st	Save our River Trust is a community organisation that focuses on the restoration of the Manawatu River Foxton loop and beautifying the surrounding areas.	Current activities include removing the threat of predatory pests, establishing wetlands, clearing and killing willows and weeds, fencing off the cattle on Matakarapa Island and planting giant flax on the banks.
11	Wildlife Foxton Trust	~	•	https://www.facebook.co m/p./wildlifefoxton/about /?ref=page_internal	Wildlife Foxton Trust's mission is education by example - delivering ecological and environmental education.	Wildlife Foxton Trust focuses on environmental education about New Zealand's Forgotten Fauna. They host tours for visitors, schools and other groups. They also lead other education programmes at the Manawatu Estuary.
12	Wildbase Recovery Community Trust	~	V	https://wildbaserecovery. co.nz/	Central Energy Trust Wildbase Recovery provides shelter and world-class care for native wildlife to rehabilitate after treatment at Massey University's Wildbase Hospital.	Wild base has a Powerco Education Centre which is an exciting learning environment, that caters for all levels from pre-school through to the early high school years. They are also open to the public, and take school, and other group tours.

13	Pest-free Summerhill	✓	✓	https://www.facebook.co m/Pest-Free-Summerhill- 102830907754620	Pest-free Summerhill aims to reduce pest numbers and thus enhance the biodiversity of the urban bush areas on Summerhill.	This group of volunteers is working to install and maintain trap lines in green belts and walkways in the Fitzherbert area of Palmerston North.
14	Water & Environmental Care Association Inc.		~	https://www.facebook.co m/p./WECA.Inc/about/?re f=page_internal	To make good water quality a community priority.	No active events or working bees that I can see. Seems to be a Facebook page talking about government actions around fresh water.
15	Water Protection Society		✓ 	https://enm.org.nz/direct ory/water-protection- society	The Water Protection Society holds water polluters to account.	People and organisations who want to pollute waterways have to get permission from the Regional Council to do so. This requires a 'consent'. The Society has submitted on these consents and tried to get the applicants to stop discharging to streams and rivers. is also currently wanting to increase public awareness and engagement so more people can contribute to restoring waterways.
16	Railway Land Action Group			https://enm.org.nz/direct ory/railway-land-action- group	The Railway Land Action Group Inc. is dedicated to the preservation and enhancement of public green spaces in the City of Palmerston North.	The group has actively campaigns on retaining public green space.
17	Palmerston North City Environmental Trust		✓ 	https://pncet.org.nz/	The Palmerston North City Environmental Trust aims to contribute to Palmerston North becoming a more environmentally sustainable and vibrant city, by supporting and stimulating activities that encourage sustainably. It aims to generate awareness about sustainability, deliver principled and effective advocacy for the environment, and provide funding for local environmentally- focused projects.	Key ways in which it achieves these aims are through organising Reel Earth Environmental Film Festival, EnviroFest and distributing grants for community environmental endeavours.

18	Te Ao Turoa			https://enm.org.nz/direct ory/te-ao-turoa http://www.rangitaane.iw i.nz/	Te Ao Turoa Environmental Centre is part of the corporate arm of the Iwi Authority, providing an important cultural and educational service to natural resource users, local Councils and central Government agencies.	The Te Ao Turoa Enviro-Centre has a broad area over which it administers to management, mitigation, or otherwise minimise, the cultural impacts primarily for resource consents for the Rangitāne o Manawatu iwi.
19	Ruahine Whio Protectors			https://www.rwp.org.nz/ https://enm.org.nz/direct ory/ruahine-whio- protection-trust	The Ruahine Whio Protection Trust aims to protect whio, the rare native blue duck, and their habitat, in the Ruahine Ranges, and to raise the funds necessary for this work.	The Ruahine Whio Protectors currently maintain over 2,500 stoat traps, and carry out fundraisers including the sale of calendars and t-shirts.
20	Ngā Kaitiaki ō Rerengā Rauropi			https://www.facebook.co m/rerengarauropi.org https://enm.org.nz/direct ory/nga-kaitiaki-o- rerenga-rauropi	Ngā Kaitiaki ō Rerengā Rauropi is a community group aiming to enhance the environment particularly on the western side of Palmerston North city, to ensure best environmental practices and community relationships, and to think for the future for our tamariki.	Removing weeds and rubbish from public parks and streams, and undertaking native planting, environmental monitoring and pest control.
21	Tutukiwi	~	<b>v</b>	https://www.pncc.govt.nz /Parks-recreation/Parks- and-reserves/Tutukiwi- Reserve	A small community group that is responsible for the restoration of Tutukiwi Reserve.	No information about local activities on a website or Facebook page.

(I= CBCGs that had 1 or more representatives participate in an interview, S= CBCGs that had 1 or more volunteers complete a survey)

Four additional CBCGs were mentioned in survey answers which were Foxton Beach Dune Garden Team, Coastal Wattle Busters, Owhango Alive, and Maketu Ongatoro Wetland Society.

### Supplementary material file S1

## Interview questions for key CBCG volunteers

- 1. Tell me a little bit about the CBCG that you are part of?
- 2. What conservation work does your CBCG do?
  - a. Why do you do that? (depends on answer above)
- 3. In terms of your conservation work do you know if your CBCG has any goals or things they are wanting to achieve?
  - a. Could you tell me a little bit about these?
- 4. Why did you decide to volunteer at your CBCG?
  - a. What are the key things that you enjoy about volunteering?
  - b. Is there anything that is off putting about volunteering?
- 5. Do you personally track your progress or carry out any sort of monitoring for your CBCG?
- 6. Do you have working bees or events? How often are they?
  - a. Approximately how many volunteers would attend a working bee or event?
  - b. What is the typical structure of the volunteers?
  - c. Do people typically volunteer regularly? Is there a core group of volunteers?
  - d. Do you know of people who have left? Could you tell me briefly some of the reasons people leave?
- 7. Are there any key issues within your CBCG that need to be resolved to the benefit of the group?
- 8. I will be interviewing a range of CBCGs within the Manawatu. Is there anything that you would like to know about other CBCGs?
- 9. Is there anyone else you thing I should speak to?

## Interview questions for CBCG leaders or board members

- 1. Tell me in your own words the purpose of your CBCG?
- 2. What conservation work does your CBCG do?
  - a. Why do you do that? (depends on answer above)
- 3. In terms of your conservation work does your CBCG have goals or things that you are wanting to achieve?
  - a. Could you tell me a little bit about these goals?

- 4. Why did you "personally" decide to volunteer at your CBCG?
  - a. What are the key things that you enjoy about volunteering?
  - b. Is there anything that is off putting about volunteering?
- 5. Does your CBCG or you personally track your progress or carry out any sort of monitoring?
- 6. How many volunteers does your CBCG have and what is the structure of your volunteers?
  - a. Since you have been involved in your CBCG has there been any changes to the structure of volunteers?
- 7. Do you have working bees or events? How often are they?
  - a. Approximately how many volunteers would attend a working bee or event?
  - b. Do people typically volunteer regularly? Is there a core group of volunteers?
- 8. How does your CBCG recruit new volunteers?
  - a. How big is the need for more volunteers?
  - b. What are the typical reasons for people to start volunteering?
  - c. How long do people typically volunteer for? Why do you think this might be?
  - d. What are the typical reasons for people leaving?
- 9. How does your CBCG fund itself?
  - a. Do you have any partnerships with local businesses, NGOs or government agencies?
- 10. Are there any aspects of your CBCG that need additional support? What would they be? a. Are there any key issues within your CBCG?
- 11. I will be interviewing a range of CBCGs within the Manawatu. Is there anything that your CBCG would like to know about other CBCGs?
- 12. Is there anyone else you thing I should speak to?



#### MASSEY UNIVERSITY

SCHOOL OF AGRICULTURE AND ENVIRONMENT ENVIRONMENTAL SCIENCES TE WĀHANGA PŪTAIAO

#### Understanding Diverse Perspectives on Community Conservation

I'm Charlotte Sextus, and as part of my PhD in Environmental Management at Massey University, I would like to invite you to participate in a survey exploring environmental volunteering in the Manawatu.

Community-based environmental groups make a significant contribution to biodiversity conservation in New Zealand. This survey aims to help us understand why people volunteer for environmental groups. These findings will be useful for groups seeking to recruit more volunteers to help protect our local environment.

The survey should take about 15 minutes to complete. Participation is <u>completely voluntary</u>, and you can skip any questions you don't want to answer. All responses will remain <u>completely anonymous</u>.

Many thanks for your help, without which this research would not be possible.

If you have any questions about this research, please do not hesitate to contact me or my supervisor via the contact details below.

#### **Charlotte Sextus**

School of Agriculture and Environment Email: charlotte.przybbylski@gmail.com

#### **Karen Hytten**

School of Agriculture and Environment Email: K.Hytten@massey.ac.nz Phone: 06 951 6089

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researchers named above are responsible for the ethical conduct of this research. If you have any concerns about the conduct of this research that you wish to raise with someone other than the researchers, please contact Prof Craig Johnson, Director, Research Ethics, telephone 06 356 9099 x 85271, email: humanethics@massey.ac.nz

1. How long have you been involved in ENVIRONNMENTAL volunteering (e.g. 1 year)?

••••••	•••••••	•••••••	••••••	••••••

2. Which environmental group/s do you currently volunteer for?

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3. How did you come to join your environmental group/s?

- 4. On average how regularly do you participate in your environmental group/s?
  - □ More than once a week
  - Weekly
  - □ Fortnightly
  - Monthly
  - □ A few times a year
  - □ Other, please specify

5. Please rank EACH of the following from 1 (not important) to 5 (very important) in terms of which factors INITIALLY motivated you to volunteer.

	1 Not important	2	3	4	5 Very important
To care for the environment	0	0	0	0	0
To socialise with others	0	0	0	0	0
To get exercise	0	0	0	0	0
To be outside, or amongst nature	0	0	0	0	0
To learn new skills or knowledge	0	0	0	0	0
To advance in a career	0	0	0	0	0
To be involved in a well-run and managed project	0	0	0	0	0
For stress relief or escape	0	0	0	0	0
To educate others	0	0	0	0	0
For personal growth	0	0	0	0	0
As a connection to nature	0	0	0	0	0
To help the local community	0	0	0	0	0
Other, please specify					
				•••••	

6. Please rank EACH of the following from 1 (not important) to 5 (Very important) in terms of which factors motivated you to CONTINUE to volunteer.

	1 Not important	2	3	4	5 Very important
To care for the environment	0	0	0	0	0
To socialise with others	0	0	0	0	0
To get exercise	0	0	0	0	0
To be outside, or amongst nature	0	0	0	0	0
To learn new skills or knowledge	0	0	0	0	0
To advance in a career	0	0	0	0	0
To be involved in a well-run and managed project	0	0	0	0	0
For stress relief or escape	0	0	0	0	0
To educate others	0	0	0	0	0
For personal growth	0	0	0	0	0
As a connection to nature	0	0	0	0	0
To help the local community	0	0	0	0	0
As an obligation to a group and/or participants	0	0	0	$\bigcirc$	0
Other, please specify					

7. Have you ever brought another person with you to your environmental group/s?

- Yes
- 🗆 No
- Unsure

If YES, how often did they attend?

- Once
- A few times
- □ Attend regularly
- Unsure

8. Are there any factors that make it difficult or which limit your ability to volunteer?

- □ Yes
- No
- Unsure

If YES, please specify

••••••	••••••••••••••••••••••••••	 •••••••••••••••••••••••••••••••••••••••	••••••

9. Please rank EACH of the following from 1 (not important) to 5 (very important) in terms of which factors LIMIT your ability to volunteer.

	1 Not important	2	3	4	5 Very important
Time taken	0	0	0	0	0
Location and/or travelling distance	0	0	0	0	0
Lack of activity options	0	0	0	0	0
Lack of activity relevance	0	0	0	0	0
Health issues	0	0	0	0	0
Other, please specify					

	uld you please note any factors that might lead you to stop volunteering?
L1. Do	you know of anyone who has stopped volunteering?
	Yes
	Νο
	Unsure
If Y	'ES, could you please note any reasons you are aware of?
L2. Wh	at type of activities does your environmental group/s carry out?
L3. Are	there any activities that would encourage you to volunteer more often?
	Yes
	Yes
	Yes No
	Yes No Unsure
	Yes No Unsure
	Yes No Unsure
 If Y 	Yes No Unsure
 If Y 	Yes No Unsure YES, what are they?
 If Y 	Yes No Unsure YES, what are they? es your environmental group/s assign you specific activities? Yes
 If Y 	Yes No Unsure YES, what are they?

15. Would you find volunteering for your environmental group/s more enjoyable if you were able to have more of a say in the activities you helped with?

□ Yes

No

Unsure

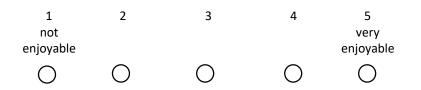
16. Are there any activities that you do not enjoy?

- Yes
- No
- Unsure

If YES, which activities do you find unenjoyable?

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17. In general, on a scale of 1 (not enjoyable) to 5 (very enjoyable) how much do you enjoy volunteering for your environmental group/s?



18. Do you prefer to work alone or in a group when volunteering for your environmental group/s?

- □ Alone
- □ In a group
- Either
- Unsure

19. As far as you know does your environmental group/s carry out any sort of monitoring? (e.g. Bird counts, water quality tests, plant survival rates)

- Yes
- □ No (Please go to Q26)
- Unsure

If YES, what type of monitoring?

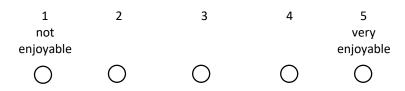
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- 20. Are you personally involved in any monitoring?
  - Yes
  - No
  - Unsure

If YES, what monitoring are you involved with?

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21. On a scale of 1 (unenjoyable) to 5 (very enjoyable) how enjoyable do you find monitoring?



22. As far as you know does your environmental group/s have any partnerships?

- □ Yes
- □ No
- Unsure

If YES, which groups are your environmental group/s in partnership with?

- 🗆 lwi
- Local council
- DOC
- Local businesses
- □ Schools
- Forest and Bird
- Regional council
- Unsure
- □ Other, please specify

.....

23. As far as you know, does your environmental group/s liaise or collaborate with local iwi or hapu?

- □ Yes
- No
- Unsure

24. Is there anything that would lead to more collaboration between iwi or hapu and your community group/s?

- Yes
- □ No
- Unsure

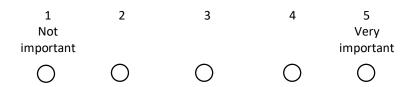
If YES, what would help collaboration?

.....

25. As far as you know, does your environmental group/s liaise or collaborate with local or regional government?

- □ Yes
- 🗆 No
- Unsure

26. How important on a scale of 1 (not important) to 5 (very important) do you think it is that your environmental group/s liaises or collaborates with local or regional government?



27. Is there anything that could be done to encourage collaboration with local or regional government?

- □ Yes
- No
- Unsure

If YES, what could help collaboration

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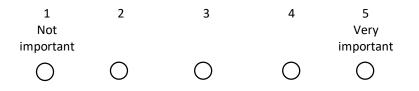
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28. As far as you know, does your environmental group/s liaise or collaborate with the Department

of Conservation and/or the Ministry for the Environment?

- Yes
- No
- Unsure

29. How important on a scale of 1 (not important) to 5 (very important) do you think it is that your environmental group/s liaises or collaborates with the Department of Conservation and/or the Ministry for the Environment?



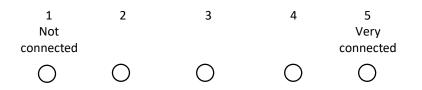
30. Is there anything that could be done to encourage collaboration with the Department of Conservation and/or the Ministry of the Environment?

□ Yes

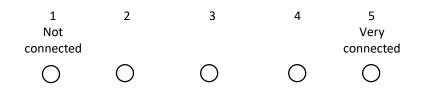
- No
- Unsure

If YES, what could help collaboration?

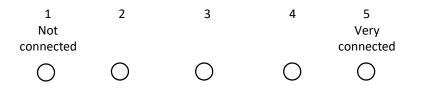

31. On a scale of 1 (not connected) to 5 (very connected) how connected do you feel to the PLACE where you volunteer?



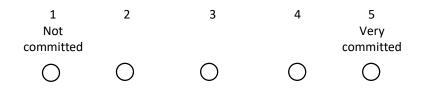
32. On a scale of 1 (not connected) to 5 (very connected) how connected do you feel to NATURE in general while volunteering?



33. On a scale of 1 (not connected) to 5 (very connected) how connected do you feel to the GROUP you volunteer for?



34. On a scale of 1 (not committed) to 5 (very committed) how COMMITTED are you to your environmental group/s?



35. In general, would you say that the protection of the environment is an urgent problem that needs to be addressed immediately, more a problem for the future, or not really a problem?

Please tick ONE box.

- □ Urgent and immediate problem
- □ A future problem
- □ Not really a problem
- Unsure

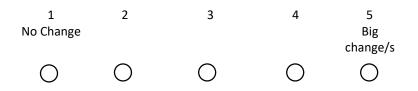
36. Which, if any, of these things have you done in the last 12 months, out of concern for the environment?

	1 Have done	2 Have not done	3 Don't know
Chosen household products that you think are better for the environment.	0	0	0
Decided for environmental reasons to reuse or recycle something rather than throw it away.	0	0	0
Tried to reduce water consumption for environmental reasons.	0	0	0
Attended a meeting or signed a letter or petition aimed at protecting the environment.	0	0	0

37. Below are some statements about the environment. Please rank EACH statement from 1 (strongly disagree) to 5 (strongly agree).

	1 Strongly disagree	2	3	4	5 Strongly agree
I would agree to an increase in taxes if the extra money were used to prevent environmental damage.	0	0	0	0	0
I would buy things at up to 20% higher than usual prices if it would help protect the environment.	0	0	0	0	0
The government should reduce environmental pollution, but it shouldn't cost me any money.	0	0	0	0	0
New Zealand's clean, green image is a myth.	0	0	0	0	0
New Zealand is cleaner than other countries only because of our small population.	0	0	0	0	0
Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs.	0	0	0	0	0

48. On a scale of 1 (no change) to 5 (big change/s) how much has your BEHAVIOUR/VIEWS towards the environment changed since you began volunteering?



39. Which of these categories best describes your employment status?

- □ Full time paid employment (30+ hours per week)
- □ Part time paid employment (15-29 hours per week)
- □ Paid employment for less than 15 hours per week
- □ Unemployed or beneficiary
- □ Student
- Retired
- Home duties

40. Which age bracket do you belong to?

- □ Less than 20
- 20-29
- 30-39
- 40-49
- 50-59
- 60-64
- 65-69
- 0 70-79
- 80+

41. Which of these categories best describes the highest level of formal education you have had?

- □ No formal schooling
- Primary school/Kura kaupapa
- □ Secondary school for up to 3 years
- □ Secondary school for 4 years or more
- □ Some university, wananga, polytechnic or other tertiary education
- □ Completed an undergraduate qualification
- □ Completed a postgraduate qualification
- Completed a PhD
- □ Not applicable/don't know

#### 42. Are you

- □ Female
- Male
- □ Non-binary
- □ Prefer to self-describe

.....

43. If you have any experiences or comments about ENVIRONMENTAL VOLUNTEERING or your ENVIRONMENTAL GROUP that you wish to share please comment below.

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## Thank you so much for your participation.

Please return your survey using the postage paid envelop provided OR to the ENM office at 145 Cuba Street, Palmerston North.