Otago Peninsula Biodiversity Group resident survey 2015

Prepared by David Chalmers, Trustee

Introduction

Since its inception in 2008, the Otago Peninsula Biodiversity Group (OPBG) has been committed to widespread community consultation (Millar, Otago Peninsula Biodiversity Trust Stratgic Plan 2013-2018, 2013). A survey of residents conducted in 2008 indicated a high level of community support for possum eradication on the Peninsula (Millar, Summary of surveys, 2009). A second survey of residents was conducted in 2015, with the primary purpose of obtaining the views of the community on the next pest or pests to control after possums.

Method

A questionnaire was developed by the OPBG Project Manager (Cathy Rufaut) with assistance from colleagues and trustees (Appendix 1). The questionnaire was similar to that used in the 2008 survey, with four questions from the 2008 questionnaire being repeated in 2015. One emphasis of the 2015 questionnaire was to determine the familiarity of residents with pest control methods and what proportion already undertook pest control on their own properties. A final section of the questionnaire was designed to assess community interest in contributing to the work of OPBG. Questionnaires were delivered to 1,857 letterboxes on the Otago Peninsula in November 2015. Collection boxes were provided at convenient locations across the Peninsula and recipients also had the option of mailing their completed questionnaires to OPBG or completing the questionnaire online.

Results

A total of 222 completed questionnaires were returned: 184 through collection boxes, mail or e-mail, and 38 through the online option. The response rate, based on the number of questionnaires delivered to letterboxes was 12 per cent.

Table 1 summarises the residential location of respondents. Of the total, 9.5 per cent lived in the Taiaroa-Cape Saunders area [compared with 14 percent of occupied Peninsula dwellings being recorded as in this area in the 2013 Census (Statistics New Zealand, 2013)], 21.5 per cent in Broad Bay-Portobello (cf. 28%), 7.5 per cent in Company Bay (cf. 7%), 29 Per cent in Macandrew Bay (cf. 26%), 3 per cent in Sandymount (cf. 4%) and 16 per cent in the Inner Peninsula (cf. 21%). When asked to describe their property, 149 (67%) of the respondents said they lived in one of the Peninsula settlements, 54 (24%) said they lived on an area of land of 15 hectares or less and 19 (9%) said they lived on an area of land greater than 15 hectares. No distribution of households by property size was readily available for comparison.

Table 1: Residential location of respondents

Place	Number	Percentage
Harington Point	9	4.0
Otakau	3	1.0
Harwood	10	4.5
Portobello	19	8.5
Broad Bay	29	13.0
Company Bay	17	7.5
Macandrew Bay	63	29.0
Challis Point	6	3.0
The Cove	14	6.0
Pukehiki	6	3.0
Highcliff Road	7	3.0
Tomahawk	9	4.0
Other	30	13.5
Totals	222	100

When asked if they had noticed any changes in vegetation and/or wildlife on their property in the past three years that might be due to OPBG undertaking possum control, 121 (54%) said 'yes', 93 (42%) said 'no' and eight did not respond to this question. This finding was generally consistent across property groups, although the proportion responding 'yes' in the group living on an area of land greater than 15 hectares was higher at 67%. Of those respondents who described the changes they had observed, many said there was less evidence of possums, especially their sounds and the noise of them on roofs (e.g. "much less likely to hear possums at night", "no possums on the roof! Thank you!"); an increase in the number of native birds in gardens, including Tui, Bellbirds, Kereru and Fantails (e.g. "best tui/bellbird population yet", "dawn chorus far stronger"); and less damage to native flora (e.g. "much more growth in pohutukawa", "good lush growth") and to roses and fruit trees (e.g. "roses flourishing", "apples no longer being eaten by possums").

Table 2: Primary reason for valuing pest control on the Otago Peninsula

Reason	Number	Percentage
Nuisance	34	13
Disease	14	5
Threat to economy	10	4
Impact on biodiversity	187	73
Not sure	4	2
Other	4	2
Did not answer	2	1
Totals	255	100

Table 2 summarises the primary reasons why respondents value pest control on the Otago Peninsula. Thirty-three of respondents returning the paper version of the question selected more than one "primary" reason. That anomaly aside, the most common reason for valuing pest control

was the impact of pests on the biodiversity of the Peninsula. This finding was consistent across the three property types.

Respondents were asked which animal pest they would like to see controlled next after possums. They were provided with five choices (rabbits/hares, stoats/ferrets, rats/mice, feral cats and hedgehogs) and asked to rank these in order of priority. Table 3 summarises the choices made by respondents. Respondents also had the option of choosing none of the five categories of pest and five made this choice. In Table 3, these five have been combined with those who didn't respond. The highest ranked first choice was stoats and ferrets (39%), followed by rats and mice (22%), feral cats (19%) and rabbits and hares (16%). When the responses obtained for the three property types were examined separately, the same rank order as above was obtained for those respondents living in Peninsula settlements but differed for the other two groups. For those respondents living on an area of land of 15 hectares or less (number=54), the highest ranked first choice was stoats and ferrets (n=14), followed by rats and mice (n=12), rabbits and hares (n=9) and feral cats (n=6), while for those respondents living on an area of land greater than 15 hectares (n=19), the highest ranked first choice was rabbits and hares (6), followed by stoats and ferrets (4), rats and mice (n=2) and feral cats (n=2).

Table 3: Priority for next pest to be controlled

Pest	1st choice	2nd choice	3rd choice	4th choice	5th choice
Rabbits & hares	35(16%)	24(11%)	43(19%)	59(27%)	19(9%)
Stoats & ferrets	88(39%)	50(23%)	35(16%)	7(3%)	1(0%)
Rats & mice	48(22%)	56(25%)	51(23%)	33(15%)	3(1%)
Feral cats	42(19%)	52(23%)	41(18%)	41(18%)	4(2%)
Hedgehogs		2(1%)	8(4%)	22(10%)	109(49%)
None of above or no response	9(4%)	38(17%)	44(20%)	60(27%)	86(39%)
Totals	222	222	222	222	222

Respondents were asked if they considered any of the pests listed in Table 3 to be a growing problem on the Peninsula and 117 responded 'yes'. After taking into account multiple species responses, rabbits and hares were mentioned most commonly, followed by feral cats, rats and mice, and stoats and ferrets. This pattern was consistent across property types. No consistent explanations were offered for the perceived increase in rabbits and hares, rats and mice, or stoats and ferrets. A number of respondents mentioned the dumping of unwanted pet cats by city residents as an explanation for the perceived increase in feral cats.

Respondents were asked which pests they controlled on their own properties. Table 4 summarises their responses. The most common category of pest controlled by respondents was rats and mice (67% of respondents), followed by rabbits and hares (18%), feral cats (14%), stoats and ferrets (11%) and hedgehogs (6%). Almost one quarter of respondents (24%) undertook no pest control on their properties. When the responses obtained for the three property types were examined separately, there were notable differences in the pests controlled by respondents living in Peninsula settlements and those controlled by respondents living on larger blocks (greater than 15 hectares). Whereas for those living in settlements, rats and mice were the highest ranked first choice, for those living on large blocks, the highest ranked first choice was rabbits and hares.

Table 4: Pests controlled by respondents on their own properties (multiple responses were permitted)

Pest	Number	Percentage (n=222)
Rabbits & hares	39	18
Stoats and ferrets	24	11
Rats & mice	149	67
Feral cats	32	14
Hedgehogs	14	6
None of them	53	24

Those respondents who reported undertaking pest control on their own properties were asked what methods of control they used. Their responses are summarised in Table 5. Poisoning (72%) was the most common method of control used, followed by trapping (36%) and shooting (25%). Shooting was reported more commonly than the other methods by respondents living on an area of land greater than 15 hectares. Respondents were asked to identify what method they used for controlling each pest. Poisoning and trapping were used most commonly for rats and mice, while shooting was used most commonly for rabbits and hares (particularly by respondents living in the two larger property types). Trapping was used most commonly for stoats and ferrets, and both shooting and trapping were used for feral cats.

Table 5: Methods used by respondents undertaking pest control on their own properties (multiple responses were permitted)

Method of control	Number	Percentage (n=169)
Shooting	42	25
Poisoning	121	72
Trapping	61	36
Other	25	15

Those respondents who identified the methods of pest control they used were asked which they felt was the most effective on their property. The responses are summarised in Table 6 (33 did not respond). Poisoning was considered the most effective method of control, followed by trapping and shooting.

Table 6: Most effective methods of control used on own properties

Method of control	Number	Percentage
Shooting	21	15
Poisoning	62	46
Trapping	44	32
Other	9	7
Totals	136	100

Those respondents who undertook pest control on their own properties were asked who carried this work out. Their responses are summarised in Table 7. Most commonly pest control was undertaken by the respondents themselves. This finding was consistent across land types.

Table 7: Person undertaking pest control on properties of respondents (multiple responses permitted)

Person	Number	Percentage (n=169)
Self	128	76
Family/friends	25	15
Contractor	9	5

Those respondents who undertook pest control on their own properties were asked to estimate the annual cost of this work. Their estimates are summarised in Table 8 (2 did not respond). Most commonly, the estimated cost of pest control was less than $100 (63%). Five respondents paid more than $500 annually, four of whom lived on an area of land greater than 15 hectares.

Table 8: Estimated annual cost of pest control on properties of respondents

Cost	Number	Percentage
Less than $100	106	63
$100 to $500	28	17
More than $500	5	17
Unable to estimate	28	3
Totals	167	100

The final question in this series asked respondents to identify the most important considerations to them when thinking about pest control. They were provided with five choices (cost, sustainability of operation [e.g. finance, labour], effectiveness, animal welfare, and minimisation of environmental effects) and asked to rank these in order of priority. Table 9 summarises the choices made by respondents. The highest ranking first choice was effectiveness (51%), followed by minimisation of environmental effects (18%), animal welfare (10%), sustainability (8%) and cost (1%). When the responses obtained for the three property types were examined separately, the highest ranking first choice for all three groups was effectiveness. There was minor variation between groups with regard to the remaining first choices.

Table 9: Most important considerations with regard to pest control

Consideration	1st choice	2nd choice	3rd choice	4th choice	5th choice
Cost	3(1%)	15(7%)	37(17%)	36(16%)	57(26%)
Sustainability	18(8%)	28(13%)	31(14%)	43(20%)	31(14%)
Effectiveness	113(51%)	44(20%)	21(9%)	4(2%)	1(0%)
Animal welfare	23(10%)	32(14%)	33(15%)	37(16%)	33(15%)
Environmental effects	39(18%)	46(21%)	36(16%)	24(11%)	16(7%)
No response	26(12%)	57(25%)	64(29%)	78(35%)	84(38%)
Totals	222	222	222	222	222

Community involvement

The final series of questions sought feedback on community involvement in OPBG. The first two questions related to the possibility of some form of trust membership being introduced that would provide another avenue for individuals to contribute to the work of OPBG alongside voluntary work such as bird monitoring and community trapping. One hundred and forty-three households (64%) indicated their willingness to make an annual payment to support OPBG's pest management programme. Table 10 shows how much they would be prepared to pay. An estimate of how much might be contributed annually through such payments was obtained by multiplying the lower and upper limits of each response category by the number of respondents nominating each category. This gave an estimate ranging from $5,567 to $8,453. Table 11 shows what respondents said they would expect in return for their financial contribution. Almost all respondents (94%) said they would expect the "satisfaction of contributing to a worthwhile project" while 55% said they would expect a "regular newsletter". Only 17% said they would expect a say in the running of OPBG.

The final question in this series asked respondents about potential involvement under the current OPBG setup. One hundred and forty-five respondents (65%) answered this question. Their responses are shown in Table 12. Of those responding, 56% said they were interested in joining the OPBG newsletter list, 47% said they were interested in making a contribution towards the day-to-day cost of running OPBG and 27% said they were interested in becoming volunteers.

Table 10: Annual payments

Amount	Number	Lower estimate ($)	Upper estimate ($)
$24 or less	42	42	1,008
$25-49	27	675	1,323
$50-74	49	2,450	3,626
$75-99	4	300	396
$100 or more	21	2,100	2,100
Total	143	5,567	8,453

Table 11: Return for contribution (multiple responses were permitted)

Expectation	Number	Percentage (n=143)
A say in the running of the OPBG (e.g. voting rights)	24	17
The satisfaction of contributing to a worthwhile project	134	94
A regular newsletter	78	55
Other	16	11

Table 12: Involvement in OPBG under current set-up (multiple responses were permitted)

Involvement	Number	Percentage (n=145)
Joining newsletter list	81	56
Becoming a volunteer	39	27
Making contribution towards the day-to-day cost of running OPBG	68	47

Finally, respondents were offered the opportunity to contribute other comments and ninety-six did so. The vast majority of respondents making other comments (76), offered congratulations, thanks or support to OPBG for the possum control project. Twenty respondents encouraged the group to turn its attention to other pests on the Peninsula, including those about which opinion had already been canvassed earlier in the questionnaire (cats, rats, rabbits and mustelids) and miscellaneous others including Magpies.

Discussion

With 83% of respondents choosing to return their questionnaires through the collection boxes provided, or by mail or e-mail, this would appear to be the preferred option for future resident surveys. Nevertheless, given the popularity of social media an online option should not be ruled out, especially if OPBG's e-mail contact list is expanded to include a higher proportion of Peninsula residents.

The response rate of 12% was similar to that of the 2015 survey (13%). In light of this low response rate (a response rate 60% or more would have been desirable), consideration was given to the representativeness of the respondents. The geographical distribution of respondents was shown to be similar to the distribution of occupied Peninsula households reported in the 2013 census. Given limited resources, no further assessment of representativeness was attempted. Caution should therefore be exercised in interpreting the results of this survey. Future surveys of Peninsula community opinion will need to be designed to achieve higher response rates or greater representativeness, perhaps through the use of sample survey methods.

Of the five choices offered for the next pest to be controlled, mustelids (stoats and ferrets) were ranked highest by all respondents combined. This finding is consistent with the 2008 survey in which mustelids were ranked second to possums. In contrast to the present survey, rabbits ranked third, rats fourth and cats last. Hedgehogs were not offered as an option in the 2008 survey. Interestingly, hedgehogs were not ranked first by any respondent in the present survey and were ranked fifth by 109 (49%), suggesting that they may not be widely viewed as pests. A notable difference in the present survey was that the highest ranked first choice of respondents living on larger land blocks (greater than 15 hectares) was leporids (rabbits and hares), whereas the highest ranked first choice for the other two groups was mustelids. In rank order, leporids, feral cats, rodents and mustelids were perceived by residents to be growing problems on the Peninsula.

The impact of possums on biodiversity was by far the most common reason given by residents for valuing pest control on the Peninsula. Of those residents who offered comment, many reported that they had observed an increase in native birds and a reduction in damage to native trees and shrubs over the past three years that might have been related to possum control.

Two-thirds of all respondents controlled rodents on their own properties. While rodent control was common across all property types, a high proportion of respondents living on large blocks (greater than 15 hectares) also controlled leporids (63%). Poisoning and trapping was used most commonly for rodents and shooting for leporids. Notably, almost one quarter of respondents (24%) undertook no pest control on their properties and this was most commonly the case for those living in settlements.

Of the five important considerations with regard to pest control that were ranked in order of priority by respondents, effectiveness was ranked highest by all respondents combined and this ranking was consistent across the three property types. The second highest ranked first choice was minimisation of environmental effects, followed by animal welfare, sustainability (e.g. finance, labour) and cost. These finding are consistent with the 2008 survey, which asked a similar question.

Community involvement

OPBG is managed by a Board of Trustees (Otago Peninsula Biodiversity Trust) and has no formal membership structure through which the Peninsula community can engage in or contribute to its activities. Feedback was sought on the introduction of some form of membership of OPBG. With almost two-thirds of respondents (143) indicating their willingness to make an annual payment to support OPBG's pest management programme, it was estimated that from $5,500 to $8,500 could be contributed by this means annually. Given that only 222 of the 1,764 households on the Peninsula responded to the survey, the contribution could conceivably be higher than this. What is known is that at the time of the survey at least 143 households were prepared to make a contribution. With only a small proportion (17%) of respondents indicating that they would want to have a say in the running of OPBG, suggests that it may not be necessary to change the rules of OPBG to have a formal membership with voting rights (e.g. for election of trustees). Respondents were also asked if under the present OBPG set-up they would be interested in making a contribution towards the day-to-day cost of running the group; 68 said they would.

Conclusions

OPBG's 2008 survey of residents showed that there was community support for organised possum eradication on the Otago Peninsula, although the response rate for that survey was low at 13%. It was seen that an organised eradication project would complement the existing efforts of residents to control possums and would help address their concerns about the impact of possums on the natural biodiversity of the Peninsula. The most important consideration of residents in 2008 was that the control programme be effective. More than half indicated that they would volunteer to assist in the proposed eradication programme. The present survey, conducted in 2015, has demonstrated continuing community support for OPBG's ongoing pest control project, albeit again with a low response rate (12%). Overall, mustelids were identified by the community as the next priority for pest control on the Peninsula, although residents living on larger blocks of land ranked leporids ahead of mustelids as their first priority. As in 2008, the majority of residents in the present survey valued pest control because of the impact of pests on the natural biodiversity of the Peninsula and their most important consideration was for the control programme to be effective. It was evident that a majority of residents were actively involved in pest control on their own properties and were familiar with the common methods of pest control: poisoning, trapping and shooting. Finally, it was heartening that almost two-thirds of respondents indicated a willingness to make an annual payment towards OPBG's pest management programme should some form of membership be introduced. The findings of this survey will be an important source of guidance to OPBG as it plans its programme for controlling 'other pests' on the Peninsula.

Acknowledgements

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References

Millar, R. (2009). *Summary of surveys.* Dunedin: OPBG, unpublished report.

Millar, R. (2013). *Otago Peninsula Biodiversity Trust Stratgic Plan 2013-2018.* Dunedin: OPBG, unpublished report.

Statistics New Zealand. (2013). *2013 Census poulation and dwellings.* Wellington: New Zealand Government.

Appendix 1

Resident's survey

Since 2011, the Otago Peninsula Biodiversity Group (OPBG) has been carrying out possum control work across the Peninsula. The latest tally is around 8,800 possums removed. Over the next three years, as well as maintaining our effort on possums, we will be planning to remove the next pests in what will probably be a multi-species control program, as part of our ambition for a "Pest-free Peninsula" by 2050. Your participation in this survey will help us develop future plans for this work.

Please take the time to complete this questionnaire and drop it into one of the collection boxes at a location listed below, or post it to *OPBG, PO Box 11, Portobello, Dunedin*, or scan and email it to opbg11@gmail.com. This questionnaire will also be available on our website (www.pestfreepeninsula.org.nz). If you have any questions, please contact us on the email address above.

Collection boxes will be stationed at Domain Hall in Tomahawk, Macandrew Bay Store, Broad Bay China Shop, Portobello Deli, and Pukehiki Hall between 10th-30th November.

THANK YOU! We do appreciate every response.

2015 OPBG Questionnaire

Background Information

1. Where you live (please circle one):

Papanui Inlet Hoopers Inlet Harington Pt Otakou
Harwood Portobello Broad Bay Company Bay Macandrew
Bay Challis Pt The Cove Pukehiki Highcliff Rd
Tomahawk Other (please state)

2. Which of the following best describes your property (please tick one):

I/we live in one of the Peninsula settlements ☐ I/we live on an area of land 15ha or less ☐ I/we live on an area of land greater than 15ha ☐

3. Have you noticed any changes in the vegetation/wildlife on your property or in your neighbourhood, over the last 3 years that might be related to possum control?

Yes ☐ No ☐

If yes, please describe:

……..

……..

……..

Beyond Possums

4. Prioritize the pests from 1-5 you would like to be controlled next or tick 'None of them' box:

Rabbits & Hares ☐ Stoats & Ferrets ☐ Rats & Mice ☐ Feral Cats ☐

Hedgehogs ☐ None of them ☐

5. Tick the primary reason you value pest control on the Otago Peninsula:

Nuisance ☐ Disease ☐ Threats to economy ☐

Impacts on Biodiversity ☐ Not sure ☐ Other (please explain)

……

6. Do you consider any of the pests listed above (4) to be a growing problem on the Otago Peninsula (if yes, please state which pest(s) and why)?

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……..

……

7. Which pests do you control on your property (please tick all that apply)? Rabbits & Hares ☐ Stoats & Ferrets ☐

Rats & Mice ☐ Feral Cats ☐ Hedgehogs ☐ None of them ☐

8. If you do control pests (7), what sort of control methods do you use (please tick all that apply and provide details of what you use for each pest)?

Shooting ☐ Poisoning ☐ (product(s)……) Trapping ☐ (trap type(s)

……..)

Other (e.g. shooting, dog/gun) ☐ (please state)

……

9. Which method (8) do you feel is most effective on your property?

……

10. If you answered 8, who is this work carried out by (please tick all that apply)?

Self ☐ Family/Friends ☐ Contractor ☐

11. Can you estimate an annual cost for the above control work in 8 (please tick one)?

No ☐ less than $100 ☐ $100-$500 ☐ more than $500 ☐

12. When considering pest control, what are the most important considerations to you (rank 1 – 6, 1 is most important)?

Cost ☐ Sustainability of operations e.g. finances, labour ☐

Effectiveness ☐ Animal welfare ☐

Minimal negative environmental effects ☐ Anything else ☐ (please state

……)

Community Involvement

The OPBG is managed by a Board of Trustees who assists with grant funding, and works with contractors and community volunteers to undertake its possum control and monitoring

activities. The OPBG engages with the community through newsletters, public meetings, and 'one on one' chats. It has no formal membership structure.

13. We are seeking feedback on introducing Trust Memberships. This would provide an opportunity for individuals to contribute to the work of the Otago Peninsula Biodiversity Group without the need to volunteer.

How much would you pay each year to be a member? Your contribution would go directly into pest management on the Otago Peninsula.

☐ $ ..... ☐ Not interested

14. If you answered 'Yes' to 13, what would you expect in return for your subscription (please tick all that apply)?

A say in the running of the OPBG (e.g. voting rights) ☐

A regular newsletter ☐

The satisfaction of contributing to a worthwhile project ☐

Other (please describe) ☐.....

15. Under the current OPBG set-up, would you be interested in (tick all that apply):

Joining our newsletter mailing list ☐

Becoming a volunteer ☐

Making a donation to the OPBG? ☐

If you ticked any of the above boxes, please email us on opbg11@gmail.com or phone Cathy on 027 4919293.

16. Final Comments -is there anything else you would like to add?

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