



Figure 3. Schematic Diagram of this research investigation.

2. METHOD

The research design to fulfil the objectives of this study is summarised in Figure 3.

To achieve this, Pre-visit questionnaires (Appendix 1) were sent to people intending to visit Tiritiri Matangi Island or Little Barrier Island. These were posted approximately 2 weeks prior to a visit, allowing time for completion and postal return before the island visit was **completed**⁴. Matching Post-visit questionnaires were sent immediately after the island visits, when the visit experiences could be easily recalled. This approach allowed a before-and-after assessment of visitor responses.

Visitor names and addresses were collected from permit applications for Little Barrier visitors, and from trip lists sent to Department of Conservation staff for Tiritiri Matangi visitors. Tiritiri Matangi visitors not on trip lists, or who decided to visit at short notice (on the day) could not be included by this method.

The overall response rates for the postal surveys are shown in Table 1. Only those respondents who completed both the pre-visit and post-visit sections of the survey were included in the final analyses.

Given the difficulties of a pre- and post-visit survey methodology, and the schedule of questionnaire post-outs having to follow weather dependent and tight trip timetables, the survey response rates were considered satisfactory. Sample sizes were affected by the number of visitors who went, the availability of the participant lists to the researcher and the cancellations of trips (e.g., due to weather).

Figure 4. Response rates to the survey.

SURVEY RESPONSE RATES	Tiritiri Matangi	Little Barrier
QUESTIONNAIRES POSTED	296	202
COMPLETED RETURNS (pre and post)	152	129
RESPONSE RATE %	51%	64%

⁴ To maximise response, stamped return-addressed envelopes were provided, and two follow-up letters were sent to those who had not completed questionnaires.

3. PROFILE OF ISLAND VISITORS

3.1 Summary

Island visitors included a greater variety of age-groups and higher proportion of women than usual in other outdoor recreation groups. Visitors, and in particular those to Little Barrier, had a higher than average level of involvement in conservation.

- Island visitors included more older people, women and professionals than did other recreation groups.
- Experiencing the unmodified natural setting and species living on Little Barrier were important reasons for visits there, while the restoration programmes and conservation experiences in general appeared to be more important reasons for visits to Tiritiri Matangi.
- Island visitors, in particular those to Little Barrier, were highly involved in conservation groups, volunteer work, and conservation activities.
- Pre-visit perceptions of the islands unique features were accurate, reflecting the restoration role of Tiritiri Matangi and the relatively unmodified state and sanctuary status of Little Barrier. Pre-visit attitudes towards management generally supported conservation management. Little Barrier visitors want freedom to experience the protected environment, but not at the cost of the ecological integrity of the island. Tiritiri Matangi visitors had similar but less pronounced attitudes.

3.2 Personal characteristics

Conservation island visitors exhibit a distinctive age distribution: there is higher percentage of older age groups and a lower percentage of younger age groups compared with other outdoor recreation groups and compared with the age distribution of the national population (Table 2). There were also a higher percentage of women participating in island visits compared with other outdoor recreation activities.

Additionally, the occupation classes of the island visitors indicated a strong presence of people with a professional and technical background and, as could be anticipated from the age distribution, a higher than expected retired group. Little Barrier visitors appeared to represent a more "Professional" group in their occupations than Tiritiri Matangi visitors. However, Tiritiri Matangi visitors display a more diverse occupation profile, while also having a high proportion of "professionals" and "managers".

3.3 Reasons for visiting the islands

Before this visit, around 1 in 4 visitors had been to the islands on previous trips (although few had made more than one previous visit - refer Appendix 2). Of interest is that on previous visits, Little Barrier people were on recreational visits, while Tiritiri Matangi people had been engaged in conservation volunteer work on the island. This suggested that the islands were offering different experiences to visitors. Differences in the reasons given for making the surveyed visits to the two different islands reinforce this suggestion.

Table 2 Descriptive features of Island Visitors (%).

AGE GROUP	Tiritiri Matangi	Little Barrier	All New Zealand ⁵	Track Walkers ⁶
< 19 yrs	3	4	12	11
20 - 29	8	6	13	45
30 - 39	16	16	21	21
40 - 49	23	33	15	13
50 - 59	22	18	12	6
> 60 yrs	27	23	17	3
GENDER	Tiritiri Matangi	Little Barrier	New Zealand	Track Walkers
Male	43	47	50	56
Female	57	53	50	44
OCCUPATION	Tiritiri Matangi	Little Barrier	New Zealand	Trampers ⁷
Professional/Technical	29	47	8	30
Administration/Management	10	0	3	10
Clerical/Sales	8	4	14	7
Service	8	13	4	12
Agriculture/Forestry	2	8	5	9
Labour/Transport/Production	4	0	18	5
Retired	20	20	*	*
Student	7	3	*	*
Homeworker	8	5	*	*
Unemployed	3	0	46	25

(The * figures combine retired/student/homeworker/unemployed figures)

When considering the reasons given for making the surveyed visit (Table 3), differences were apparent between visitors to the two islands. Visitors to Tiritiri Matangi Island gave quite general reasons for their visit, including coming with other people (28%), that they had not been before (18%), and that others had recommended it to them (16%). The more specific reasons stated included being interested in conservation (21%), observation of the restoration progress (12%), and to observe the birdlife (15%). Little Barrier visitors provided similar general reasons for their visits, but generally indicated specific reasons more often. These included the islands' unique unmodified state (24%), the flora and fauna present (26%), and to observe the birdlife (27%).

3.4 Pre-visit conservation involvement

A high proportion of visitors to these islands were actively involved in conservation through membership of conservation groups and involvement in volunteer work for

⁵ Data from the 1992 Census figures (Department of Statistics 1992).

⁶ Preliminary data from a survey of "Great Walks" visitors (Cessford, in progress).

⁷ Data from trampers in the Greenstone and Caples Valleys, Cessford (1987).

Table 3 Reasons for visiting the island⁸.

REASONS FOR VISITING THE ISLANDS	Tiritiri Matangi (n=207)	Little Barrier (n=129)
Came with other people/in a group	28	27
Interested in conservation	21	15
Never been here before	18	18
It was recommended by other people	16	9
To observe and experience the birdlife	15	27
Interested in flora/fauna/nature	13	26
Wanted to see progress of restoration	12	2
Enjoyed my previous trips	9	4
Always wanted to come here	8	19
Doing a specific recreation activity	7	12
Showing other people around	7	7
It's a unique and unmodified island	6	24
To see endangered species	5	5
Other reasons	9	6

conservation, and this is reflected through various types of conservation behaviour and pre-visit attitudes towards management.

3.4.1 Conservation group membership While no direct figures are available for New Zealand overall, conservation group membership at over 40% for these island visitor groups is **high**⁹. Little Barrier visitors in particular appear much more actively involved in conservation, with almost all indicating group membership (Table 4). Most of those who were members of conservation groups were associated with the Forest and Bird Society, and/or Greenpeace (refer Appendix 3). Forest and Bird members predominated on Little Barrier in particular.

3.4.2 Previous involvement in volunteer work Many visitors to these islands had past experience of volunteer work (Table 5) with Little Barrier visitors having done far more volunteer work than visitors to Tiritiri Matangi (65% cf. 40%). However, while both visitor groups display reasonably high levels of volunteer involvement, the activities they had done were quite different (Table 6). Volunteers who were now

Table 4 Membership of conservation groups (%).

CONSERVATION GROUP MEMBERSHIP	Members	Non-members
Tiritiri Matangi (n=152)	38	62
Little Barrier (n=129)	81	19

⁸ Table indicates % of sample who gave each reason, columns will not total 100%.

⁹ Mortimer *et al.* (1995) found 24% conservation group membership in a telephone survey of Auckland residents. Shultis (1991) found outdoor recreation membership of 13% for a general public sample, 20% for a national park visitors sample, and 35% for a wilderness visitors sample. Wilson (1993) found 37% of wildlife-viewing tourists in New Zealand were members of some conservation group and Cessford and Dingwall (1995) found 59% group membership for subantarctic island visitors.

Table 5 Previous involvement in voluntary conservation work (%).

PREVIOUS INVOLVEMENT IN VOLUNTEER WORK	Have done volunteer work	Have not done volunteer work
Tiritiri Matangi (n=152)	40	60
Little Barrier (n=129)	65	35

visiting Tiritiri Matangi had been mostly involved in tree planting activities, while volunteers now visiting Little Barrier had been more involved in a wider variety of volunteer activities, including research assistance.

Despite the greater past involvement of Little Barrier visitors in volunteer work, this was not a major activity on visits to Little Barrier per se. Amongst those who had visited Little Barrier before, only 6% indicated they had done volunteer work on those visits. By contrast, 59% of previous visitors to Tiritiri Matangi had been involved in conservation work there (refer Appendix 2 for detail). These results reinforce the apparent differences between the island visitor groups and show that while Little Barrier visitors have generally greater volunteer backgrounds, visits to Little Barrier itself do not represent volunteer work experiences, while those to Tiritiri Matangi more often do.

3.4.3 Conservation activities In addition to the direct questions asked on conservation group and volunteer work involvement, respondents were also asked to indicate their involvement in a range of different conservation activities. As may be expected, the results presented above were supported. Island visitors were more involved in various types of conservation activities than were a more general population sample (Table 7), for example, sorting household rubbish for collection or recycling, recycling newspapers, cardboard, bottles and glass, and even discussing conservation issues with families and friends etc.

Table 6 Past experience of volunteer work.

PREVIOUS VOLUNTARY ACTIVITIES	Tiritiri Matangi (80)	Little Barrier (84)
Tree planting	60	38
Beach clean-ups	25	17
Facility construction	11	19
Conservation group admin.	11	17
Guiding/educating others	11	11
Weed/pest control	8	6
Advocacy (submissions etc)	5	13
Research assistance	2	23
Recycling at home	2	5
Other	11	19

Table 7 Current Conservation Activities.

INVOLVEMENT IN CONSERVATION ACTIVITIES (the % figures represent the proportion of each sample who have done the activity listed - in last 6 months)	Little Barrier	Tiritiri Matangi	General Public ¹⁰
Sorted your household rubbish for collection or recycling	93	92	22
Done volunteer work for conservation projects	50	26	-
Got involved with a conservation/environmental group	74	32	9
Used food waste for compost	75	71	39
Taken cans for recycling	87	86	34
Taken bottles and glass for recycling	93	89	49
Chosen "environment-friendly" products to use at home/work	93	87	41
Chosen to use lead-free petrol	69	58	21
Used a carpool instead of own car to get to work	21	6	8
Used more public transport instead of own car	26	31	22
Recycled newspapers and cardboard	96	93	42
Made a submission on a conservation issue	50	26	5
Gone to a meeting on a conservation issue	53	26	-
Made a donation to a conservation group	90	65	22
Asked for information about conservation issues/groups	77	49	-
Discussed conservation issues/problems with my family/friends	96	88	-
Gone on trips to other natural areas	97	85	-

Again, and as can be expected, Little Barrier visitors showed a greater conservation orientation, for example, getting involved with a conservation or environmental group, getting involved in volunteer work, making donations to a conservation group, and asking for information about conservation issues etc.

3.5 Perceptions of the islands and their management

3.5.1 Perceptions of these islands Visitors were asked before their visits to state the three main ways they felt the island differed from other islands and reserves (Table 8). Perceptions of these islands highlighted the unique features underlying their management priorities, and reflected their scientific and nature reserve status.

The one most distinctive feature attributed to Tiritiri Matangi was the restoration programme being carried out there. The unique role of DOC staff in this, the presence of numerous and rare birds, and the "open sanctuary" status of the island were also often stated.

The two most distinctive features attributed to Little Barrier prior to the visit were the bird numbers and variety, and the unmodified/undeveloped nature of the island. Related to this latter feature was the high number citing the isolated and remote setting of the island. Other bird-related features were also stated under "bird behaviour/can get close-up", with the relative "tameness" of birds being the most prominent response. In

¹⁰ A report by Colmar Brunton Research Ltd (1990) asked very similar questions of a stratified public sample. This is considered indicative of the New Zealand population.

Table 8 Perceived differences between each island and other islands and reserves.

PERCEIVED DIFFERENCES: - THESE ISLANDS AND OTHER ISLANDS AND RESERVES	Tiritiri Matangi (n=190)	Little Barrier (n=126)
Restoration and conservation role here	42	12
Staff presence and their management roles	29	8
Bird numbers and variety of species	27	38
Presence of specific and endangered species	21	17
Public visits are allowed for here	19	3
Unmodified/undeveloped state of the island	10	32
Public access is regulated and controlled	9	20
No introduced predators or pests	6	16
Bird behaviour/can get close-up	3	22
Isolated and remote setting	3	23
Other	18	18

addition, the features associated with "protection" were also often stated (e.g., controlled public access, no predator species).

3.5.2 Perceptions of island management issues Visitors also had strong attitudes towards management issues prior to visiting the islands (Table 9). These included:

- A desire to have information communicated on the trip, through provision of signs, interpretation, and contact with conservation staff.
- Preference for small group sizes while visiting.
- Recognition that some physical restrictions to visits will be required, with limits on visitor numbers, and freedom of movement in some places.
- Preference for some independence while visiting, rather than always having guides present in a supervisory role.
- Supporting good conservation behaviour such as removing their own litter, while not supporting less desirable behaviour such as taking souvenirs or feeding wildlife.

Little Barrier visitors were less inclined to support statements associated with "development" or "services" on the island to be visited. They indicated less support for information signs, the provision of close-up opportunities with wildlife and being allowed to collect some items for souvenirs. However, while they accepted that complete visitor freedom of movement onshore was not preferable, they were less inclined to support physical restrictions of movement to specified tracks and viewing sites. And reflecting the current management of the island which allows controlled overnight stays, they indicated greater preference for this option.

Little Barrier visitors want freedom to experience the protected environment and the option for overnight stays, but not compromising the ecological integrity of the island: i.e., restricted access. Tiritiri Matangi visitors had similar but not as strong attitudes towards conservation management.

Table 9 Management Options: Pre-visit support.

ATTITUDES TOWARDS MANAGEMENT (all island visitors)	Agree	Neutral	Disagree	Significant Pre-visit difference between Islands (refer Appendix 4 for details)
- Visitors should take all their own rubbish and waste off the islands when they leave	98	2	0	
- Information signs about features of island environments/wildlife should be provided	87	6	7	*** Tiritiri Matangi visitors agree more.
- When on the islands, people should be in a few small groups, not one big one	85	14	1	
- Meeting Conservation Staff/Scientists is an important part of this trip	81	16	3	
- All visits should include some nature education instruction about plants/wildlife	79	16	5	
- Visitors should only be allowed to walk on specially provided tracks	77	13	10	** Little Barrier visitors agree more.
- Some wildlife should be made available for close-up viewing and photography	61	18	21	* Little Barrier visitors disagree more.
- Some visitors should be allowed to stay onshore overnight in huts or camps	58	21	22	*** Little Barrier visitors agree more.
- Visitors should only be allowed to view wildlife from specially provided sites	57	15	28	*** Little Barrier visitors disagree more.
- Visitors should be controlled by guides at all times while on the islands	29	24	47	
- Visitors should be allowed to take small approved items as mementos of their visits	19	16	65	* Little Barrier visitors disagree more.
- Visitors should be allowed to feed some of the wildlife	17	28	55	
- There is no need for limits or regulations to control visitor numbers to these islands	15	3	82	*** Little Barrier visitors disagree more.
- Visitors should be free to walk and explore wherever they want to go on the islands	9	14	77	** Little Barrier visitors disagree more.

* = χ^2 significant differences between Tiritiri Matangi and Little Barrier visitors* = χ^2 p<0.05** = χ^2 p<0.01*** = χ^2 p<0.001

4. CONSERVATION BENEFITS

One of the main justifications for allowing visits to such specially protected islands is that the visitors can become more knowledgeable about the conservation issues associated with the sites. This may prompt some re-evaluation of their attitudes towards conservation issues, and ultimately result in them becoming more pro-active themselves in promoting conservation objectives. The following three sections present key results which are most indicative of these "conservation benefits" occurring. These relate to increased conservation learning (4.1), increased awareness of conservation management (4.2), and increased commitment to conservation (4.3).

4.1 Increased conservation learning

4.1.1 Summary In this section conservation learning is assessed through visitor reports of (i) how their thinking has changed in regard to conservation and (ii) what they learnt from their visit experience. Many visitors indicated that their island experiences had changed the way they thought about conservation, and almost all indicated that they had learned something more about conservation from their visit.

- Changes in conservation thinking included a better understanding of the role of DOC, and increased awareness of the need for conservation management. Little Barrier visitors in comparison with Tiritiri Matangi visitors indicated greater awareness of environment impacts, and an enhanced personal value for the island.
- Conservation learning was widespread. Tiritiri Matangi visitors gained most from the positive outcomes of restoration programmes, while Little Barrier visitors learnt most about the negative impacts of pests and other threats, and the necessary intervening role of DOC.

4.1.2 Effect of visit on conservation thinking Approximately 40% of all island visitors indicated that their visit had changed the way they thought about conservation and the environment (Table 10).

Table 10 Changes in thinking on conservation

CHANGES IN THINKING	Tiritiri Matangi	Little Barrier
YES	43	36
NO	57	64

Some indication of how visitors' thinking has changed is provided by Table 11. Most of the comments made by visitors in the open-ended question related to how their conservation awareness had been raised by their visit. Over 30% directly stated a greater awareness of the Department of Conservation and its management programmes. Over 24% stated a greater awareness of the need for conservation management. Tiritiri Matangi visitors showed more change in awareness on conservation management and the conservation possibilities that exist. Little Barrier visitors showed a greater awareness of environmental impacts and threats, and that their experience had reinforced the value they attributed to the island.

4.1.3 Things learned about conservation from visit While not everyone thought there was a change in their thinking, almost all indicated they had learnt a great deal. Overall, 96% of Tiritiri Matangi visitors and 94% of Little Barrier visitors specifically stated an example of something learned from their visit about conservation (see Table 12).

Over 25% of all visitors indicated they had learned something from the conservation examples they had seen; about the kinds of environmental impacts and threats that exist; about the practical requirements of conservation projects; and about the importance of the island reserves and the roles they play.

The two island visitor groups differed in their conservation learning (see Table 12). Differences included the degree to which the islands had provided them with an example of conservation outcomes, the role of environmental impacts, threats and pests, and the role of the Department of Conservation in management and research.

Almost 40% of Tiritiri Matangi visitors considered the conservation example provided by the island had been one of the main things they had learned, and also valued. Over 60% of Little Barrier visitors stated that the environmental impacts and threats of pest species had been one of the main things they had learned from their visit. In addition, 30% stated the role of the Department in management and research as an important thing learned.

To this extent, these findings support an "island-effect" on visitor learning. Tiritiri Matangi visitors are learning about the positive outcomes of conservation management, while Little Barrier visitors are learning more about the negative outcomes of not having conservation management. This result was also reflected in the reported changes in conservation thinking.

Table 11 How thinking on conservation changed (% of those changing).

HOW THINKING CHANGED	Tiritiri Matangi (87)	Little Barrier (46)
More aware of DOC and its management role	34	30
More aware of need for conservation management	31	24
Reinforced my conservation values	26	19
More aware of the conservation possibilities	22	15
Greater environmental and impact awareness	17	46
Reinforced my value for this island	14	33
Can see public access increases awareness	0	13
Other	4	2

Table 12 Things learned about conservation¹¹

THINGS LEARNED ABOUT CONSERVATION	Tiritiri Matangi (199)	Little Barrier (121)
About the conservation examples demonstrated here	37	16
Environmental impacts and threats of pests	34	62
Operational requirements of conservation projects	27	22
Importance of the island reserve and it's role	26	31
Need for active public involvement in conservation	23	16
DOC role in management and research	16	30
About the environment and ecology	7	7
Other	7	5

4.2 Increased awareness of conservation management

4.2.1 Summary Changes in visitor attitudes to conservation management occurred in relationship to visitor freedom, the provision of information, and visitor-wildlife interactions.

- After their visits, island visitors appeared more tolerant of having physical limitations to their movements onshore than they were of being closely supervised by guides.
- Visitors gave increased support for all forms of information provision, with the importance of staff contact increasing for both groups. Increased support for nature education was also found amongst Little Barrier visitors, but less apparent need for sign provision was evident amongst Tiritiri Matangi visitors.
- Most visitors disagreed with manipulating wildlife for human recreation purposes, and this attitude strengthened after their island visits (in different ways on the respective islands).

It was anticipated that island visits would change some of the pre-visit visitor attitudes towards conservation management, despite these already representing strong support for conservation.¹² The strong attitudes which were maintained (i.e., not changed by the visit) were:

- visitors should take all their own rubbish off the islands when they leave (all agreed)
- there is no need for limits or regulations to control visits to these islands (all disagreed)
- when on the islands people should be in a few small groups not one big one (all agreed)
- visitors should be able to take small approved items as mementos of their visit (most disagreed, although less so on Tiritiri Matangi)
- some visitors should be allowed to stay overnight in huts or camps (most agreed, although less so on Tiritiri Matangi)

¹¹ Table indicates % of sample who stated they learned each thing.

¹² These pre-visit visitor attitudes are discussed in Section 3.4.2 (Table 9).

However, the significant (χ^2) changes in attitudes which did occur as a result of the island visits are detailed below.

4.2.2 Changes related to visit freedom Visitors appeared more tolerant of having physical limitations to their movements onshore, than they were of being closely supervised by guides.

(i) *Freedom of movement onshore* (Table 13)

- Visitors should be free to walk and explore wherever they want to on the island.

After their visit, visitors disagreed more with the idea of having freedom to go anywhere they chose while on the islands. Both island groups changed significantly in this respect, although the Little Barrier experience has generated a more significant change in attitudes (despite already showing the stronger negative attitude prior to the visit).

Table 13 Visitor opinions on freedom of movement onshore.

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (*) ¹³	Pre-visit	30	39	18	11	2
	Post-visit	40	39	7	12	2
Little Barrier (***)	Pre-visit	52	30	9	6	3
	Post-visit	71	23	3	0	3

(ii) *Confinement of movement to specified tracks* (Table 14)

- Visitors should only be allowed to walk on specially provided tracks.

While Little Barrier visitors agreed with this limitation significantly more than did Tiritiri Matangi visitors before the visit, the changes resulting from the visit indicated both groups had similar attitudes. In fact, both groups agreed significantly more with confining visitors to specified tracks after they had visited the islands. This shows that both experiences prompted similar changes in visitor perceptions.

¹³ Chi-square significance of pre/post-visit differences (ns) = not significant (significance levels * = χ^2 p < 0.05 ** = χ^2 p < 0.01 *** = χ^2 p < 0.001)

Table 14 Visitor opinion on confinement to specified tracks

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (*)	Pre-visit	0	9	17	42	32
	Post-visit	1	6	7	37	49
Little Barrier (*)	Pre-visit	3	9	6	43	39
	Post-visit	3	2	6	32	57

(iii) Requiring control of visits by guides (Table 15)

- Visitors should be controlled by guides at all times while on the island.

While a higher proportion of both groups agreed that this should not occur during their island visits, there were a number of people who held a neutral stance or agreed that this should occur. However, the disagreement with this statement strengthened significantly as a result of their actual experience.

Table 15 Visitor opinion on requiring control of visits by guides

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (**)	Pre-visit	10	34	26	21	9
	Post-visit	16	46	21	13	4
Little Barrier (**)	Pre-visit	16	34	22	19	9
	Post-visit	25	42	13	13	7

4.2.3 Changes related to information provision Visitors generally supported an increase in information provision. The island experiences reinforced the importance of staff contact for both groups, and increased support of nature education for Little Barrier visitors. However the high level of support for sign provision declined for Tiritiri Matangi visitors after their visit. In fact, it seems that for Tiritiri Matangi visitors, less support for information signs is linked to more importance placed on meeting conservation staff.

(i) Provision of information signs (Table 16)

- Information signs about island environments/wildlife should be provided.

Support for the provision of information signs was significantly lower for Tiritiri Matangi visitors after their visits (although overall support for signs was still high). However, Tiritiri Matangi visitors still maintained relatively greater support for sign provision when compared with Little Barrier visitors.

Table 16 Visitor opinion on more information signs

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (*)	Pre-visit	0	1	2	35	62
	Post-visit	0	2	8	43	47
Little Barrier (ns)	Pre-visit	4	12	12	38	34
	Post-visit	13	13	10	30	34

(ii) Need for nature interpretation (Table 17)

- All visits should include some nature education instruction about plants/wildlife.

Support for nature education amongst Little Barrier visitors increased after their island experience. This change resulted in them being significantly more supportive of nature education than were the Tiritiri Matangi visitors (whose response did not change after their visit).

Table 17 Visitor opinion toward more nature interpretation

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (ns)	Pre-visit	0	4	17	47	31
	Post-visit	0	5	15	48	35
Little Barrier (*)	Pre-visit	3	4	17	53	23
	Post-visit	3	4	19	33	41

(iii) Importance of meeting conservation staff (Table 18)

- Meeting conservation staff/scientists is an important part of this trip.

Both groups agreed that meeting management/research staff was important, and this increased significantly for both groups after their visit experiences. Tiritiri Matangi visitors experienced a significantly greater degree of change, possibly reflecting the greater amount of time staff are able to contribute to the visit experience on Tiritiri Matangi compared with Little Barrier.

Table 18 Visitor opinion toward meeting management/research staff

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (**)	Pre-visit	0	3	17	43	34
	Post-visit	1	2	7	39	49
Little Barrier (*)	Pre-visit	1	1	13	36	48
	Post-visit	2	5	5	30	57

4.2.4 Changes in visitor-wildlife interactions Most visitors disagreed with manipulating wildlife for human recreation purposes, and this attitude strengthened after their island visits. Little Barrier visits encouraged resistance to having wildlife provided for close-up experiences, while Tiritiri Matangi visits encouraged less support for feeding of wildlife.

(i) *Provision of close-up wildlife opportunities* (Table 19)

- Some wildlife should be made available for close-up viewing and photography.

Little Barrier visitors disagreed more with this, and their disagreement increased significantly after their island visit (Tiritiri Matangi responses did not change). These results suggest that the experience of the Little Barrier visit reinforces the already high preference for natural rather than contrived encounters.

Table 19 Visitor opinion on provision of close-up wildlife viewing

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (ns)	Pre-visit	8	9	19	46	18
	Post-visit	8	10	27	33	22
Little Barrier (*)	Pre-visit	10	20	15	43	12
	Post-visit	22	17	21	29	15

(ii) *Feeding of wildlife* (Table 20)

- Visitors should be allowed to feed some of the wildlife.

Visitors generally disagreed with this, and Tiritiri Matangi visitors indicated significantly greater disagreement after their island visit. This suggests that particular aspects of the Tiritiri Matangi visit experience influenced their perceptions on feeding wildlife.

Table 20 Visitor opinion on allowing some feeding of wildlife

VISITOR OPINIONS		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tiritiri Matangi (**)	Pre-visit	27	28	28	15	2
	Post-visit	40	29	20	9	2
Little Barrier (ns)	Pre-visit	29	26	28	13	4
	Post-visit	27	24	22	22	5

Table 21 Interest in joining a conservation groups (% of non-members)

INTEREST IN JOINING A CONSERVATION GROUP (amongst current non-members)	Want to join a group	Don't want to join a group
Tiritiri Matangi (n=123)	35	65
Little Barrier (n=24)	44	56

Table 22 Interest in greater involvement in their groups (% of members)

INTEREST IN GREATER GROUP INVOLVEMENT (amongst current group members)	Want to get more involved	Don't want to get more involved
Tiritiri Matangi (n=123)	40	60
Little Barrier (n=24)	23	77

4.3. Commitment to conservation

4.3.1 Summary Visitors were asked various questions to assess how island visits might promote conservation behaviour. Conservation behaviour was defined for the purposes of this study as conservation group involvement, volunteer work involvement and intention by visitors to participate in a number of conservation activities. Involvement in conservation groups and volunteer work is high amongst these island visitors. Despite this, post-visit statements by many visitors of their future intentions indicated an increased commitment to become involved in such activities.

- After their visit, many visitors indicated an intention to join a conservation group, or to get more involved if already a group member.
- After their visit, most visitors also indicated an intention to get involved in volunteer work, or increase their involvement if already active.
- The reasons for these changes included having seen the examples of conservation outcomes, being made more aware of impacts that affect natural systems, and seeing that the public need to get involved. Tiritiri Matangi visitors tended to emphasise active conservation effort, while Little Barrier visitors tended to emphasise the need to counter environmental impacts.

- The commitment of Little Barrier visitors was maintained at the same high level as found from pre-visit responses. Tiritiri Matangi visitors showed the greatest positive change after their visits, although their overall commitment levels remained lower than that of Little Barrier visitors.

4.3.2 Conservation group involvement A good proportion of visitors indicated a change in their commitment to conservation group involvement.

After their trip, about 40% of non-conservation group members indicated a greater interest in joining a conservation group after their visit (Table 21). Similarly, 40% of conservation group members on Tiritiri Matangi wished to be more involved, while 23% of those visiting Little Barrier were interested in becoming more involved in their groups (Table 22). While the percentage is lower for Little Barrier visitors, it should be remembered that this group was already more active in conservation groups prior to their island experience.

Visitor groups differed in their reasons for wanting increased involvement in conservation organisations. The responses to the open-ended questions can be found in Table 23. Little Barrier visitors emphasised greater environmental awareness and the need for conservation effort, while Tiritiri Matangi visitors were influenced by the island's example of what conservation work could achieve.

Table 23 Reasons to join a conservation group ¹⁴

REASONS FOR JOINING	Tiritiri Matangi (67)	Little Barrier (29)
Want to do more/make a contribution	24	21
More aware of environment/see need to help	22	31
This island is an example of outcomes	19	7
Need to get active public involvement	19	17
Can learn more about conservation	15	17
Other reasons	0	7

4.3.3 Volunteer work involvement The influence of an island visit in motivating the visitor is again suggested from the numbers who indicated that their island visit made them more interested in doing volunteer work.

After their trip, almost 50% of Tiritiri Matangi visitors (previously non-volunteers), now indicated an interest in doing some volunteer work for conservation (Table 24). The even higher percentage of Little Barrier visitors making the same response reflects the greater conservation commitment they have indicated elsewhere (Table 25).

In addition, over 60% of those visitors already active as volunteers indicated interest in further volunteer work after their island visit.

¹⁴ Table indicates % of sample who stated each reason.

Table 24 Future interest in volunteer work (amongst previous non-volunteers)

FUTURE VOLUNTEER WORK INTENTIONS (amongst current non-volunteers)	Want to get more involved	Don't want to get more involved
Tiritiri Matangi (n=115)	48	52
Little Barrier (n=42)	64	36

Table 25 Future interest in greater volunteer work (amongst previous volunteers)

FUTURE VOLUNTEER WORK INTENTIONS (amongst previous volunteers)	Want to get more involved	Don't want to get more involved
Tiritiri Matangi (n=75)	61	39
Little Barrier (n=80)	62	38

Visitor groups differed in their reasons for wanting to do more voluntary work (Table 26). These reasons generally emphasise a desire to be involved in making a contribution, and are common for both visitor groups. Tiritiri Matangi visitors in particular stated that the example of conservation outcomes provided by the island motivated their interest in volunteer work. Little Barrier visitors tended to emphasise the need for the public to do something, and that impacts on the environment required action.

Table 26 Reasons for doing more volunteer work¹⁵

REASONS FOR VOLUNTARY WORK	Tiritiri Matangi (87)	Little Barrier (67)
This island is an example of outcomes	29	12
Motivated to do more/make contribution	25	25
More aware of environment and impacts	15	24
Public needs to get involved	15	22
Such work is fun/fulfilling	10	13
Other reasons	5	9

4.3.4 Conservation activity intentions After the island experience, some visitors indicated a greater intention to undertake conservation activities.¹⁶ There were two main features of these responses: Little Barrier visitors retained their significantly higher levels of interest in undertaking conservation activities (maintained at similar levels to pre-visit responses), while Tiritiri Matangi visitors showed significant increases in their interest in such activities after their visits (significant post-visit changes).

¹⁵ Table indicates % of sample who gave each reason.

¹⁶ The pre-visit activities were initially discussed under Section 3.3.3. Appendix 4 provides more details of post-visit intended activities as well as detailed differences between Little Barrier and Tiritiri Matangi visitors.

Visitors to Little Barrier (compared with those to Tiritiri Matangi) had significantly higher commitment to involvement in conservation behaviours, both before and after their island visits. However, there was little change as a result of their island visit, with only a few specific instances of increased commitment to a behaviour, e.g.:

- Doing volunteer work for conservation projects;
- Going to a meeting on a conservation issue.

In contrast, there was an increase in commitment to many conservation behaviours by Tiritiri Matangi visitors. While these were at significantly lower levels than those from Little Barrier visitors, they did demonstrate the most positive change as a result of their island visit. Intentions to change significantly occurred in the following areas:

- Doing volunteer work for conservation.
- Getting involved with a conservation/environmental group.
- Using a carpool instead of own car to get to work.
- Using more public transport instead of own car.
- Making a submission on a conservation issue.
- Going to a meeting on a conservation issue.
- Asking for information about conservation issues/groups.
- Discussing conservation issues/problems with my family/friends.
- Going on trips to other natural areas.

These results suggest that the visit experiences are contributing to greater changes in the Tiritiri Matangi visitors, while Little Barrier visitors sustain their already higher levels of commitment.

5. MANAGEMENT IMPROVEMENTS

5.1 Summary

Potential management improvements that the department needs to consider were assessed by asking visitors what they most enjoyed and least enjoyed about their visits, and by questions directly asking for improvements which would have enhanced their island experiences. Little Barrier visitors were more inclined to suggest trip improvements, and indicated a greater desire for provision of information on visits.

- More time onshore, better environmental information were the most preferred improvements to trips, particularly for Little Barrier visitors. They wanted information about research and management programmes, bird recognition guides, and island history and development. These same needs were expressed to a lesser extent by Tiritiri Matangi visitors.
- There was some need for improvement of facilities for some visitors, most specifically related to overnight accommodation on Little Barrier. This was supported by comment on what was least enjoyed about visits.
- Sources of enjoyment emphasised experiencing the birdlife and enjoying recreation activities in the natural setting. Visitors to Tiritiri Matangi also particularly enjoyed the interactions with departmental staff, but had some negative experiences with other visitors.

5.2 Sources of visit enjoyment

Overall, the birdlife, natural settings and specific recreational activities (usually walking) were the main areas of anticipated and actual enjoyment (Table 27). Satisfaction with these was more pronounced for Little Barrier visitors.

There were some interesting differences in anticipated and actual enjoyment. In particular, experiencing the birdlife, which most often referred to close-up encounters with birds and observing rare birds, was more often stated after the visit. This suggests these specific experiences were largely unanticipated, but were very satisfying. Tiritiri Matangi visitors in particular appeared to get considerable satisfaction from contact with DOC staff, given the 35% stating it as a post-visit source of enjoyment, a substantial increase over the 3% anticipated enjoyment of this service.

5.3 Sources of dissatisfaction

Around 25% of island visitors felt there were no problems that could have, or did, affect their trip enjoyment. Of those who did perceive problems (Table 28), those actually anticipated (rough boat-trip, insufficient time on islands, and difficult landings on and off boats) did not occur to the extent expected.

On the other hand, a few Tiritiri Matangi visitors reported problems with the presence and behaviour of others (behaviour and noise of children). In addition, a few Little Barrier visitors reported problems with the facilities (usually accommodation arrangements with staff).

Table 27 Features of visits most enjoyed¹⁷

FEATURES MOST ENJOYED Tiritiri Matangi n = 207 Little Barrier n = 129	Tiritiri Matangi		Little Barrier	
	PRE	POST	PRE	POST
Birdwatching/observing birdlife	37	28	49	38
Specific recreation activity	25	25	23	27
Experiencing flora/fauna	18	10	19	15
Enjoying the natural setting	18	14	29	18
Seeing the rare birds	17	24	15	22
The boat trip to the island	14	11	4	5
Observing the restoration progress	12	9	2	3
To get away from it all	9	5	5	4
Experiencing the birdlife	8	24	16	29
Learning about nature and conservation	6	6	12	8
The unique/unmodified island	4	1	16	16
The contact with DOC staff	3	35	2	8
Conservation status/role of island	3	3	4	7
Other	15	17	11	10

Table 28 Features of visits least enjoyed

FEATURES LEAST ENJOYED Tiritiri Matangi n=207 Little Barrier n=129	Tiritiri Matangi		Little Barrier	
	PRE	POST	PRE	POST
Rough boat trip/sea-sickness	31	5	39	13
Lack of time on the island	19	6	22	11
The condition and route of tracks	11	3	3	8
The presence and behaviour of others	10	16	4	5
Boat trip timing and long duration	8	6	5	2
Uncertainties about trip cancellations	7	0	15	1
The lack and/or state of facilities	6	4	15	19
Difficulties seeing birdlife	3	2	1	10
Difficulties getting on/off boats	2	3	24	9
No problems at all	25	29	24	28
Other	14	13	13	10

5.4. Improvements to visits

When asked about possible improvements to island visits (Table 29), almost 25% of visitors stated no changes were needed, or that things should be left as they were. Little Barrier visitors made more suggestions overall and, as shown in Table 29, these emphasised a preference for more time onshore and more information provision. Almost 50% of Little Barrier visitors stated more time on the island as a desired improvement, while almost 40% desired better information on the environment, ecology and the progress of research and management.

¹⁷ Tables indicate % of sample who stated this source of enjoyment, or least enjoyment.

Table 29 Improvements suggested by visitors¹⁸

IMPROVEMENTS SUGGESTED (up to three allowed for)	Tiritiri Matangi (207)	Little Barrier (129)
Better information about island environment/ecology	18	36
More time allowed onshore during visits	17	46
Develop and/or improve facilities	14	19
Provide more signs and displays	8	1
Limit visitor numbers to the island	6	1
Allow for more talks and information from staff	4	12
Develop and/or improve tracks	1	11
Other suggestions	17	18
No changes needed/leave as is	24	24

Table 30 What information was desired

INFORMATION NEEDS	Tiritiri Matangi (59)	Little Barrier (74)
Island vegetation and wildlife/island ecology	25	31
Progress of restoration and management programmes	24	43
Track and attraction guides/information signs	20	15
Progress of research programmes	15	26
Birdlife recognition and song information guides	12	35
Where birds can be found/seen	7	7
Island history/archaeology	7	19
Other	10	22

Reference to facilities and talks by staff largely related to the situation in the Little Barrier accommodation hut, where crowding and conflict issues were perceived between resident staff and the overnight visitors. Most visitors realised the difficulties of shared accommodation, but felt the staff attitude to be disappointing in some cases (also reflected in previous results on least enjoyed aspect of visits). Much of this was due to research staff being considered uncommunicative about their work while visitors were particularly interested in what work was being undertaken. This general desire for more information, particularly from Little Barrier visitors, was reflected in the post-visit questions asked about information needs.

5.5 Visitor information needs

Visitors were asked whether they wanted more information while on their visits, and if so, upon what topics. The need for more information was higher for Little Barrier visitors compared with Tiritiri Matangi visitors (60% cf 30%). Table 30 lists the main topics about which visitors would have liked more information.

¹⁸ Tables indicate % of the total sample who stated each of the improvements, or information needs.

Overall, Little Barrier visitors wanted to know more about all topics. In particular, over 40% wanted to know more about the progress of management and restoration programmes, and a similar number wanted to know more about the progress of the research programmes. There was high interest in the activities of the Department of Conservation. There was also need for information to aid bird recognition as well as information on the history and archaeology of Little Barrier.

Tiritiri Matangi visitors wanted information about the island vegetation and ecology, and emphasised the progress of island restoration.

6. DISCUSSION OF MANAGEMENT ISSUES

The management issues are discussed in relation to those questions posed by managers around the country.

6.1 Should public visits to protected areas be allowed?

Yes, the research indicates that visits to protected islands may be justified in terms of the positive changes stimulated in people's awareness of conservation and intentions to become more involved. While many visitors to these islands were already highly committed to conservation through their involvement in conservation groups, volunteer work, and conservation activities, they still indicated positive changes resulting from their island visits. This was particularly the case among those visitors initially less committed to conservation.

Almost all indicated that they had learned from their island experiences, and many also indicated an intention to undertake more conservation actions. If each change made could be considered representative of a "small win", then the accumulated results indicate that some more substantial benefits to conservation are being achieved. In terms of Henderson's model of conservation education discussed earlier (Section 1.4), it is clear that the learning outcomes resulting from visiting Little Barrier and Tiritiri Matangi covered all developmental steps, ranging from recognition and awareness of DOC programs through to specific intentions to undertake some personal conservation actions.

6.2 What type of visitors are the islands attracting?

These island visitors can be distinguished from other recreation groups through their higher proportions of older participants and women, and from their high levels of involvement in conservation. Management issues will arise from the likely facility and service requirements of older visitors, and the future growth in this sector as the national population ages. As older visitors tend to prefer "nature-experience oriented" destinations rather than the "achievement-excitement oriented" destinations of younger outdoor recreationists¹⁹, the demand for visits to protected areas is likely to grow.

6.3 Did the different islands have different effects on their visitors?

This is not straightforward because the islands initially attracted different groups of visitors. Little Barrier visitors were more committed to conservation than Tiritiri Matangi visitors. They were more involved in conservation groups and volunteer work, and engaged more often in conservation activities. However, it was clear that both groups did demonstrate changes after their island visits, and that in some cases these changes were different.

¹⁹ Wilson (1993) noted that younger wildlife-viewing tourists tended to be more attracted to opportunities with greater adventure and excitement components.

6.3.1 Differences in conservation learning In considering what was learned from each island, the learning outcomes of Tiritiri Matangi visitors emphasised the conservation example represented by the island. They had become more aware of the need for participation in community based conservation projects, the importance of conservation islands and the needs of conservation management with problems, for instance, created by pest introductions.

The learning outcomes of Little Barrier visitors emphasised environmental threat and management themes. Their visits appeared to drive home strong messages about environmental impacts, the threats of pests, and the necessity of management and research roles.

Overall, the conservation benefits received by Tiritiri Matangi visitors emphasised the positive outcomes from conservation involvement and management, while those received by Little Barrier visitors emphasised the negative consequences of not managing for conservation. It is apparent that the island experiences do have different learning outcomes. The current implication for management is that different islands can be used to promote different conservation messages. A future implication may be that island visit experiences may be managed in ways designed to promote particular messages.

6.3.2 Differences in attitudes toward conservation management Despite most visitors having pro-conservation attitudes prior to their visits, their attitudes were even more supportive of conservation as a result of their island experiences. While there was a wish for maintaining freedom in visit experiences, the necessity of controls was understood, particularly by visitors to Little Barrier.

Visitors accepted being restricted to designated pathways, and there is a strong case for making the first means of regulation in delicate areas simply a well formed path or boardwalk. Management experience shows that most visitors will stay on tracks if they are provided. The degree to which tracks are defined, and management control is exerted, needs to be "appropriate and consistent" with the expected island experience. Some types of development may not be appreciated, such as excessive signage or over-worked track development. Tracks should be aligned to maximise the opportunities to view the attractions, while ensuring that this does not compromise the habitat or disturb the wildlife. Sites where specific points of interest are to be found, and where wildlife is most easily viewed, can be identified along the track, to encourage visitors to complete their own interpretation.

A need for more information on island experiences through signs, interpretation and contact with DOC staff was apparent. Little Barrier visitors appeared to be more appreciative of the need for interpretation after their visit while Tiritiri Matangi visitors appeared to be more appreciative of the importance of staff contact after their visit. However, for both groups, the importance of staff contact to the overall trip experience cannot be underestimated.

While a "stand-over" management or guiding presence is not supported, having staff visible and able to help interpret the area, to answer questions and give directions, is

a service strongly supported by visitors. Commencing such interaction with a management talk on arriving at an island appears to be very important. Reinforcement of the key points made can be achieved in the less formal interactions which may follow.

As completing a visit appears to increase support for controls, visits to certain islands should be encouraged to help reinforce and promote messages about regulation and control. Explanation of the reasons for any controls should be made particularly clear.

Attitudes against any manipulation of wildlife encounters for human recreation purposes increased after visits, indicating more understanding of human-wildlife encounters and the need to avoid any unnecessary disturbance or stress on wildlife. Although visitors appreciate having close-up encounters with wildlife, there remains confusion as to the place of "supplementary feeding" and associated manipulation of wildlife, where this is undertaken to enhance the visitor experience. Tiritiri Matangi visitors showed more disagreement with the feeding of wildlife while Little Barrier visitors disapproved more of wildlife being made available for photography, etc. Further research may be required to fully understand the reasons visitors either support or condemn such practices.

6.3.3 Differences in commitment to conservation action Little Barrier visitors confirmed their greater overall conservation commitment with their greater participation in various conservation activities. They had higher levels of involvement in conservation groups, and in doing volunteer conservation work. However, their post-visit commitment to conservation did not increase to the same extent as it did among visitors to Tiritiri Matangi.

While Tiritiri Matangi visitors generally indicated a lower level of participation in conservation behaviours, their island visit did stimulate greater positive change in their post-visit intentions. This suggests that their island visits generated greater net conservation benefits. However, it may be that the generally lower levels of conservation involvement among Tiritiri Matangi visitors allowed more room for change to occur. While the differences in conservation commitment may possibly be an important factor in the apparently greater degree of conservation benefits from visits to Tiritiri Matangi, the presence of some "island effect" can also be accepted given the distinctly different conservation messages communicated on visits to each island.

6.4 Where can the most conservation gains be made?

The discussion of results in the previous paragraph suggests that achievement of conservation benefits may be maximised on less committed visitors. One interpretation of these results is that while gains will be made with those already highly sensitive to conservation issues (e.g., Little Barrier visitors), greater net gains may be made by concentrating upon those who have some interest in conservation, but who are not yet highly committed (e.g., Tiritiri Matangi visitors).

Another interpretation of these results is that the benefits are likely to be further enhanced on visits to "participatory" islands such as Tiritiri Matangi. On such islands,

public visits represent less hazard to priority protection objectives, the tangible outcomes from conservation management activities are more readily apparent, and the opportunities for practical public participation in these activities are high. Visits to more critical protection sanctuaries such as Little Barrier could be considered as representing specific opportunities for the more committed participants to reinforce their commitment, and to enhance particular conservation messages.

Confirmation of these findings requires that we better understand the effects of visitor commitment on their island visit experiences, and the different "island-effects" which may be operating. The way visits are conducted, the time spent on-site, the activities undertaken, and how staff and visitors interact are some of the other variables which need to be considered in determining the conservation benefit outcomes from visits. The effects of these different factors represent important questions for consideration in future research.

6.5 How can management enhance the conservation benefits?

As indicated by these results, few changes appear necessary to improve the overall experiences of visitors. Visitors do not appear to be currently demanding provision of any services or facilities that would compromise the primary conservation objectives of the islands. However, some improvements could be made.

6.5.1 Provision of information services Prior knowledge about an island is important in providing individuals with motivation to visit, and to stimulate their initial awareness of the island's features. Where particular conservation objectives are being highlighted on particular sites, pre-visit information can be specifically provided as the first step in advocating these messages. This process could also be incorporated into any introductory conservation experiences that people may have before considering a visit to such islands.

Results from this study, widespread observation, and considerable anecdotal evidence of staff-visitor interactions, show that where staff positively interact with the visitors, and provide a good introduction to the island, the advocacy value of the island visit is considerably increased. The conservation benefits from this role of being seen and heard, and being available as the face of the Department, should not be underestimated, especially at a time when limited resources may leave managers wishing to limit the time visitors spend with staff.

When people visit islands, managers need to be aware that it is not only desirable for education purposes to have information available, but that information is strongly desired by visitors. The presence of clearly competent, friendly and motivated staff allows high quality personal communication with visitors. Buttell *et al.* (1987: 475), when reviewing research on evaluating outcomes from environmental advocacy policies and programmes stated:

"The predominant conclusion is that while economic motivations and incentives may have some impact, these factors tend to be less important than non-financial motives,

effective communication and information, and the trustworthiness of information and sponsoring organisations."

The point about trustworthiness can be related to the value of good staff on the ground, presenting a friendly, competent, and motivated impression. Departmental staff need to be supported in these roles. If particular staff do not have a mandate for advocacy, or their position is one where this task interferes with their programmed management or research work, then action should be taken to ensure that the opportunity for quality public contact is not lost. Apart from the potential loss of conservation benefits, any perceived constraints to public contact can promote negative messages about conservation work or workers among visitors. However, any actions taken to promote contact must ensure that conservation work does not suffer. If public contact must be limited, clear explanation of the reasons is important. But where possible, active interaction between staff and visitors should be promoted.

Managers should also assess what types of messages could be available to visitors, and the different ways these could be communicated in different sites and situations. The key conservation objectives and features of management and/or research at particular sites can be identified, and emphasised for visitors through a variety of written and spoken, passive and active, and formal and informal means.

Given the desire among visitors to seek greater involvement in volunteer work, managers should try to ensure that sufficient information is available to help them identify how they can become more involved. This information could include contacts for volunteer groups and programmes, what work is being done and where it is occurring, how to get involved, and what other opportunities exist through the Department's programmes (e.g., conservation holidays). The coordination task is then to match Departmental work needs with volunteer skills and abilities. These processes represent the first steps in enhancing and expanding the "partnerships" in which the Department is involved to better achieve its conservation goals. Part of this process could be initiated by including more on-site information about the volunteer work which had been done there, and this could be linked to tangible on-site examples of its results. This information could be supplied and reinforced by using a combination of written, sign and verbal means.

6.5.2 Provision of facilities While visitors were not demanding the types and levels of facilities which would compromise the conservation objectives of the islands they are visiting, some facility provision will have to be considered. It is generally accepted that access should not be encouraged, and basic tracks and other facilities (water supplies, shelters, toilets) are all that need be provided. However, the "older" age of many island visitors means they may not be as fit and active as the typical outdoor recreationist. Managers should also recognise that the population is ageing, and that interest in "nature-experience oriented" sites are likely to increase (compared with the "achievement-excitement oriented" sites more preferred by younger recreationists²⁰).

²⁰ Wilson (1993) noted that younger wildlife-viewing tourists tended to be more attracted to opportunities with greater adventure and excitement components.

Some reassessments of the facility requirements of these types of conservation island visitors may be required. To ensure that visitors have the types of satisfying experiences which allow conservation benefits to occur, facilities may need to be upgraded to a suitable standard for the needs of these visitors. If this cannot be done for conservation reasons, the reasons for not doing so should be indicated. In addition, the restrictions and inconveniences caused by a required low level of facility provision should be made quite clear to any potential visitors. A well known example is the information provided about the difficulty in landing from small boats on Little Barrier, where no wharf is provided (due to conservation requirements, and also to expense).

Visitors seldom demand facilities that would compromise the primary conservation objectives of the islands (e.g., wharves on rat free islands such as Little Barrier). If such demands do develop, the reasons for not providing such facilities need to be clearly articulated. The type and extent of facility development is typically decided through an assessment of how appropriate a particular facility (or facility standard) is to the setting, and to the visit experience anticipated by visitors. In this situation, managers should be aware that they may have perceptions of visitor desires and needs that do not correspond to those of the visitors. A reassessment of the "appropriate visitor experience" from both the visitor perspective and the manager perspective, can prove a useful start in determining future visitor facility provision.

6.5.3 Provision of further island opportunities Visitors have indicated interest in visiting other natural areas, and this research has shown that such visits can generate conservation benefits. It will be important to evaluate the features of other islands and conservation areas to identify what roles they could play in a broader programme of raising conservation awareness and involvement. In the introduction to this report, Figure 2 demonstrated there were a variety of islands which could contribute to these roles. But it should be remembered that these only included those islands under some form of DOC control. Further consideration of other islands and onshore areas (both DOC and non-DOC) should be undertaken. For instance, Mortimer *et al.* (1995) noted that there are over 500 offshore islands, over 50% of which are designated as sanctuaries and/or nature reserves with restricted public access. There is, even with restricted access, good potential to promote the conservation benefits of sharing these reserves with the wider community.

There is also scope for considering the options for such initiatives on the mainland. Saunders (1990) has proposed the idea of "Island Management 'Mainland' Style" to replicate the success of island reserves in onshore situations, using for example, the Mapara forest.

"It is timely to attempt 'island-style' management programmes in important mainland habitats where effective control of pests is the objective, rather than eradication" :147

"Its essential to remember that the success of this and any similar projects in the future is dependent on the support and understanding of the community. Every effort will be made to advocate the philosophy of Mapara and to promote active community support and involvement. Already Mapara is providing a focus for wildlife and forest

conservation in the Central North Island. While the stimulus in this case, is a rare and ancient New Zealander, the Kokako, there is no reason, in my view, why such intensive management and collaborative involvement should not be effective in a much wider setting. " :149

There is no reason why the more active advocacy roles taken on islands could not be applied in turn to mainland sites and conservation developments. This would increase conservation support in general, and assist the spread of conservation restoration back to the mainland.

6.5.4 Extension to other visit associates and operators So far we have only been considering what changes the Department of Conservation could make to improve conservation outcomes. But other stakeholders are involved in public visits to protected areas. These stakeholders include trip leaders, ecotourism operators, guides, transport operators, etc.

These people and groups are all in a position to complement the Department's efforts at enhancing conservation benefits. Using these opportunities, provision of visit information and key conservation messages about specific sites could be better provided in pre-visit material, during the transport to sites, on the visit itself, and in any follow-up contact which may occur with visitors. The communication task here for managers is to identify the key conservation messages and information for sites, and then the key opportunities and agents through which these messages can best be provided. Word-of-mouth is widely acknowledged as one of the main effective means of communicating information, and strategic use of this mechanism through key agents would enhance the success of departmental information objectives.

In addition, this approach would contribute to the general reinforcement of conservation messages during many different visitor experiences, which could be expected to contribute to general pro-conservation changes in the wider community.

7. CONCLUSION

The information provided by this research is a valuable start in trying to clarify the conservation benefits gained from public use of conservation islands and conservation areas generally. The results support the continued use of these island sanctuaries for both conservation and education. The research clearly indicates that there are conservation benefits to be gained from allowing public access to protected islands, in particular where there is an informed interpretation programme underway. Visitors indicated changes in their general awareness of conservation, as well as intentions to take part in conservation activities after their island visit.

There remains the task of going beyond the intentions of island visitors, to monitoring their attitudes and actions over time. In this way, what have so far been words offered in response to a survey may hopefully be measured by actions representing a positive growth in the conservation ethic. Research is also required to identify the visitor types showing most "greening" in this way. Managers could concentrate their advocacy efforts on these visitors, who appear to show greater potential for positive change. However, even if only a general approach to all visitors is taken, these results indicate there are still real opportunities for promoting key conservation messages.

Based upon the findings of this study, a number of general recommendations for management and research can be identified.²¹ It is acknowledged that these recommendations are subject to maintenance of the priority conservation objectives of management, and the availability of adequate finance and staffing resources.

7.1 Management Recommendations

7.1.1 Opportunities for conservation visit experiences

- Maintain current opportunities for conservation experience visits, and actively seek new opportunities for such experiences in other sites (subject to conservation priorities). This could include other islands, and also any suitable sites identified on the mainland.
- In consultation with other land managers, undertake evaluation of islands and other sites not managed by the Department, to complement those visit opportunities already provided.
- Where suitable sites are identified, evaluation of the types of conservation examples and messages which they emphasise should be undertaken. This would provide the basis for any information strategies applied to visitors to those sites. In addition, any opportunities for appropriate volunteer participation in management and research programmes could also be considered.

²¹ Managers are themselves likely to identify a number of more specific management ideas from these results.

7.1.2 Information provision and communication with visitors

- Recognise and promote the role of quality staff contact with visitors to enhance the conservation management and research messages being communicated, and the management role associated with the Department. In particular, maintain the use of a management introduction to islands when visitors first land onshore.
- Provide intending visitors with pre-visit information which highlights the key conservation messages which are associated with the site being visited and its management, and ensure that potential visitors are provided with sufficient information in cases where onshore facilities are significantly limited (due to conservation priorities or resource limitations).
- Cooperate with other stakeholders in island visits to achieve consistent reinforcement of conservation messages throughout the entire visit experience (e.g., from initial pre-visit information through to the return journey and any follow-up information).
- Provide some information on volunteer contributions where these have occurred, preferably associated with tangible examples of the outcomes. Where possible, additional information on other volunteer opportunities should be provided.

7.1.3 Provision of facilities and services

- Only provide facilities which are essential to maintaining satisfactory visit experiences, and do not compromise the conservation objectives of the islands. Visitors have indicated they accept limited facilities on this basis.
- The types of facilities required on these islands are largely the same as those provided in day-use areas and short walks in other areas managed by the Department. Managers should treat research into visitor requirements in such areas as being largely applicable to islands, or other specially protected settings.
- Special attention to the facility requirements of older visitors is needed, as they are more interested in the types of experiences being provided on these islands, and their numbers are likely to increase as the population generally ages.
- If opportunities to have close-up experiences with birdlife and other wildlife are possible due to particular management practices (e.g., supplementary feeding in particular), these should be incorporated into the options possible on a visit. These appear to have high value in visitor experiences. However, despite desiring the chance to have close-up encounters, visitors do not want to see inappropriate manipulation of human-wildlife encounters.

7.2 Research Recommendations

There is an ongoing need to better identify and understand the effects of visitors upon natural settings, and to develop means to identify and monitor key environmental

criteria. This study has indicated that there is also a need to better understand the effects of visit experiences on the visitors. The need to consider the "island effect" in more detail has already been suggested. The increased commitment of visitors to conservation groups, volunteer work and conservation activities represents a very positive result, indicating advanced steps in growing commitment to conservation objectives. However, it is still important to know more about a number of research areas. Some of the important research question to consider include:

- What aspects of an island visit experience are most influential in generating the conservation benefit outcomes (e.g., the staff-visitor relations, the characteristics of the staff and their communication methods, the types of information provided, the activities undertaken, the length of stay etc.), and how this may vary for different islands;
- How does the achievement of net conservation benefits vary according to the existing conservation commitment of visitors, and which types of visitors are likely to show the most "greening" from their conservation visit experiences;
- To what extent are the post-visit intentions actually converted into actions (based upon longitudinal research of visitor past behaviours, future intentions and actual outcomes);
- How will demands for facilities and experiences develop in the future as the population characteristics change, with particular emphasis upon older visitors to Departmental areas, and of visitors engaged in day-visits and short walks in general.
- What are the visitors' expectations of facilities and services on visits to special protected sites, and do these vary for different sites based upon the different conservation profiles of the sites.

Incorporating the results of research on these questions into management will be important in enhancing the conservation benefit outcomes of visits to protected areas and islands.

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