

# SUMMER USE SURVEY OF MIMIWHANGATA MARINE PARK AND WHANANAKI

**A Report to Northland Conservancy, Department of Conservation  
December, 2003**

**V.C. Kerr & A.M. Kerr**



**Mimiwhangata Location Map**

## **AUTHOR ADDRESS**

Vince Kerr  
P.O. Box 4267  
Kamo, Whangarei  
(09) 435 1518  
vincek@igrin.co.nz

## **ABSTRACT**

This report contains the results of a visitor use study carried out at Mimiwhangata Marine Park and a nearby area of similar coast near Whananaki outside the Marine Park. The study took place between late November 2002, and early June 2003. The information was gathered by observational surveys conducted over a period of seven months. Surveys demonstrated consistent use of both sites, for both shore-based and boating activity. Whananaki appears to have relatively higher shore-based visitor use than Mimiwhangata reflecting better road access to the area. Use levels at both sites increased dramatically over the Christmas and New Year period followed by a reduced normal summer use pattern and a lesser peak use period over Easter. Use of the Marine Park by boats in particular is disproportionately high over Christmas compared to other times of year. There was a wide range of shore-based activities observed at Mimiwhangata with fishing from the shore constituting 12% of total shore activity. The effect of wind direction and wind intensity on activity levels were also analysed. As expected boat counts and (to a lesser degree) shore-based activity were highest in periods of fine weather and light winds. In both areas boats made some use of more sheltered areas in moderate winds up to 15 knots and boating use dropped off markedly as wind rose above 15 knots. Sheltering advantages of Mimiwhangata in strong winds was not supported by boat counts in these conditions.

## **KEYWORDS**

Visitor use, visitor surveys, Mimiwhangata, Whananaki, wind strength, wind direction, boating activity, shore-based activities, recreational fishing

## **INTRODUCTION**

It is now twenty years since establishment of the Mimiwhangata Marine Park. There is concern that the Marine Park concept used at Mimiwhangata has not worked due to difficulties in understanding and enforcing the rules and possibly the general effectiveness of this approach to marine protection. This concern has led the Department of Conservation to conduct an investigation into the current biological status of the Park's marine life and to review management options for the Marine Park. Biological surveys have been completed over the last two years by an Auckland University team and a team of the author and Dr Roger Grace. The initial reports of this work are listed in the reference section of this report, (Denny & Babcock, 2002, Grace & Kerr, 2002a, 2002b, Grace & Kerr 2003, Usmar et.al 2003). As part of the investigation purpose the Department is engaged in evaluating future options for marine protection at Mimiwhangata. Obtaining some basic information on use of the Mimiwhangata marine area was identified as important.

The Mimiwhangata Marine Park is located on Northland's East Coast, approximately 48 km from Whangarei (35°25'S, 174°26'E). The Marine Park extends 1000 metres offshore between Paparahi Point and Te Ruatahi Island, beyond Rimariki Island and covers ca. 20 km<sup>2</sup>. Within the Park's boundaries there are a variety of underwater habitats that include shallow and deep rocky reefs, boulder fields, sandy areas, urchin barrens and turf flats. Refer to Figure 1 for a map of the Mimiwhangata survey site.

In order to make some basic comparisons of the use at Mimiwhangata with another similar area on the coast a 'control' area south of Mimiwhangata on the Whananaki coast was identified. This site is not covered by any special marine management provisions. The surveyed site at Whananaki covers ca. 5 km<sup>2</sup> and begins approximately 2 km south along the coast from the southern boundary of the Mimiwhangata survey site. The Whananaki area is an open East Coast environment quite similar to some of the more exposed areas of Mimiwhangata, but lacking the larger more sheltered areas of Mimiwhangata Bay that are protected by the Mimiwhangata Peninsula. The purpose of including Whananaki as a control or comparable area was to test how similar visitor use patterns of Mimiwhangata were to nearby coastal areas. Of special interest were the use patterns on days with stronger wind.

## **BACKGROUND**

### **A Brief History of the Marine Park**

In 1980, the first year the Farm Park was open to the public, a Mimiwhangata Farm Park visitor use survey was conducted between December 26 and January 26 (Lands & Survey Dept., 1981). The survey project was designed to provide an opportunity for detailed analysis of patterns of usage in order to aid long-term planning for recreational use of the Park. While this 1980 survey does not provide overall use data that is strictly comparable to results from this survey, it does provide a useful historical snapshot of use at that time which forms a basis of looking at current use of the Park.

The survey covered preferred activities, strain on (and demand for) facilities, and the general impact of visitors on the physical environment. A survey card filled out by visitors was the technique adopted, and cards were distributed with the Park brochure at the front gate and self-administered in addition to daily visual observations of the facilities. Visitors arriving by sea were not targeted by the study. However, the report makes special mention of the fact that "considerable numbers of visitors also arrived by sea, particularly during the period 27 December to 5 January." The report also mentions a "lesser number" of visitors approaching from the Maori block to the South that was not surveyed.

Main results reported are summarised below:

- A visual count was made of the car park during the 32 day survey period resulting in the following count: 179 cars, maximum one-day count of 15 cars, an average of 4.3 people/car, giving a total count of people arriving by car of 770 for the survey period. It was estimated that the survey effort achieved a 34% return rate.
- The Park only catered for day visitors in 1980 which were predominantly people from local areas. By contrast, the Bay of Islands reported visitors from all over New Zealand in that year.
- Most stays were between half a day and a full day in duration.
- Visitor numbers fluctuated in accordance with the weather, with fine days generally resulting in considerably more visitors.
- Those surveyed visited Mimiwhangata predominantly to enjoy the natural environment and to partake in passive outdoor activities. Tables 3 and 9 in Appendix 1 detail the activities undertaken and their relative popularity. It is notable that fishing was reported as a minor

activity in comparison to picnicking, sightseeing, walking, tramping, swimming and snorkelling.

- Tables 8 and 12 and Figure 12 in Appendix 1 detail the parts of the Park and shoreline used by visitors. Okupe and Mimiwhangata beaches were the most heavily used areas.

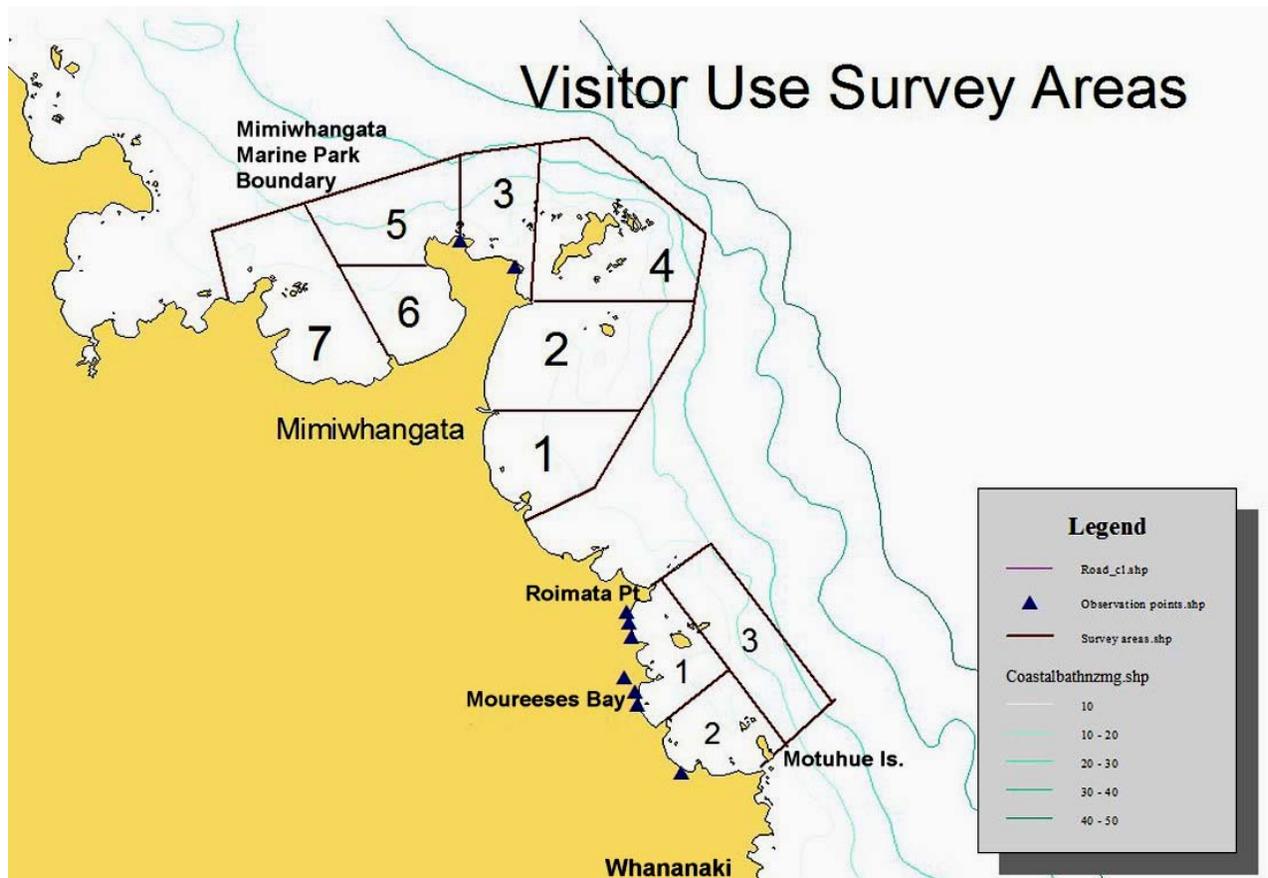
A second survey of visitor use was undertaken the following year, 1981, between December 26 and February 1. This project focused on fishing and diving activity and is summarised in the Mimiwhangata Environmental Impact Report (Dart et. al., 1982). The survey was based on interviews with visitors and observations recorded by Park staff over the period and the report states that results were not “quantitative” because visitors were not monitored and in most instances actual catch was not inspected. It does, however, include two qualitative charts of what fishing and diving activity was taking place and where. A figure of 75 total dive parties was recorded for the survey period, 54% of these shore-based. The report details observations of set-netting and commercial fishing, as current fisheries regulations were not yet in place. Appendix 5 of this report reproduces the two ‘use maps’ for further reference.

## **OBJECTIVES**

The primary objective of this survey was to establish the use, extent of use and types of use of the Mimiwhangata marine area during the summer months. It further aimed to compare the use of areas that differed in wind exposure and wind conditions. Finally, the survey was a comparison of the use of the marine area in Mimiwhangata with a comparable adjacent coastal area, Whananaki.

## **METHODS**

The following map (Figure 1) indicates the areas surveyed and vantage points from which data was gathered for this study.



**Figure 1** Mimiwhangata and Whananaki survey areas

The two sites (Mimiwhangata and Whananaki) were divided into areas (see Figure 1). There were 7 areas in Mimiwhangata and 3 in Whananaki. Within each site there were several vantage points together covering all the target areas.

The methodology chosen for this work was to conduct a visual survey of the inshore marine area out to approximately 1 km from shore. A series of surveys were done on a sample of days spread over time. Each survey consisted of a single count in time of the use for each area. Details are explained further below. Key vantage points were selected on hills along the shore of each area (see Figure 1). A standardised survey form (see Appendix 4) was adopted from a marine reserve survey system developed by the Department of Conservation's Northern Regional Office technical team (Leane Mackay pers.comm.). The data was then transferred to an Excel spreadsheet for analysis.

The study aimed to sample use at regular intervals across varying weather conditions to allow broad trends and spatial patterns of use to be identified and some estimation and indication of the levels of overall use. It is important to note, however, that the methodology in this survey was not designed to quantitatively determine the total number of visitors using the Park. The recorded counts for each sample time are probably an underestimate of the actual number of boats or people for the day, as people and/or boats come and go during the course of a day. Therefore, all figures reported in this survey are believed to be conservative in relation to total use.

The Mimiwhangata survey period ran from 25<sup>th</sup> November 2002 to 7<sup>th</sup> June 2003. The survey at Whananaki ran from 15<sup>th</sup> December 2002 to 13<sup>th</sup> May. The timeframe was chosen to include the busy Christmas and New Year period as well as the summer season on either side of Christmas. A long period was chosen to allow for sufficient data collection in a variety of wind conditions to enable analysis of how wind conditions affect use of the Park. The long collection period also enabled some analysis of how visitor use varies over the different summer periods.

Ranger Chris Moretti and his wife Nadeane were the data collectors at Mimiwhangata, and DoC contractor, Samara Sutherland collected the Whananaki data. Trial runs with the data collectors and periodic checks for consistency were carried out by the author. Binoculars, (6 x 2 Nikon), were used to help with identification of the different types of activities. Care was taken to ensure that double counting of boats moving between areas was avoided. The main parameters recorded were:

- area
- time
- date
- weather (cloud, wind, swell & tide)
- number and type (motor or sail boat in Whananaki) of boats
- number of people fishing (on and off shore)
- recreational activities (kayaking, snorkelling, swimming & surfing)
- people on the shore

Survey times were standardised to between 8am-10.00am and 3.00pm-7.00pm. The surveyors were instructed to attempt to do at least one survey each weekend or holiday period and at least one survey on a weekday in each two-week period. A total of 40 surveys for each area was the target set. Surveys were completed on 43 days at Mimiwhangata and 38 were completed at Whananaki. Over the entire period an attempt was made to survey a minimum of 3-5 times in each category of wind strength condition. For each survey the observers visited each of the observation points indicated in Figure 1. The total survey area was broken into areas, (see Figure 1), which reflected differences in exposure and were practical in terms of size and viewing. The observers then scanned each area one at a time and recorded boat numbers and the other use data. Counts were taken as single counts of the boats or the activity that was taken place in the given area at the time of the survey. The observers attempted to complete the entire survey in approximately one hour which reduced the likelihood of double counts of boats moving between areas over time. Wind speed was measured by estimated wind speed on the water using the standard Beaufort Scale (NZ Metservice 2004). No calibration was attempted to assess variation in the observers estimate of the wind strength, however the categories of wind strength used in this study were quite broad so observer error in estimating wind strength is unlikely.

## RESULTS

Tables 1-5 below detail the survey results for the two sites. Total counts and calculated averages per survey are given in addition to separate totals and averages per survey for three distinct periods. These are: the Christmas - New Year period; Easter week; and the remainder of the survey period, covering the rest of the summer season.

## **Mimiwhangata: General Use Patterns**

The three most common activities are boats anchored, boats moving and people on shore, each of which rank significantly higher than all other recorded activities. People fishing off the shore, kayaking and swimming/surfing were also significant activities. Overall, there is a wide range of shore-based activities undertaken at Mimiwhangata. Fishing from shore makes up 12% of total activity recorded in Mimiwhangata Marine Park, (see Table 1).

It is arguable that the number of people engaged in boat activity exceeds the combined number of people that were counted in shore based activities. The method adopted for this study (see above) did not allow consistently accurate counts of the number of people on boats but a typical number was 2-4 as most boats were small trailer-size boats. If 3 was taken as an average number of people per boat this would mean that approximately 831 people (3x 277) were counted as engaged in boat activity. Compared with a total of 465 people counted as engaged in shore based activity, it is clear that sea access to and boat-based use of the Marine Park is significant.

As was recorded in the 1980 study, Okupe and Mimiwhangata beaches were the most popular shore-based areas visited during the survey period. For boat activity, Paparahi, Trig Point, Taukawau Point and Rimariki Island were the most visited areas. Tables 2-4 include a breakdown of the counts for Area 6 (Whale Bay). Whale Bay is a popular stopover for yachts and launches and is predominantly used as an anchorage. It can be assumed from surveyors' observations that the boat count data for Area 6 is the number of boats anchored there.

Generally, surveyors could determine what activities boats were engaged in but due to the limitations of land-based observations and the distances involved it became apparent as the survey proceeded that there was considerable uncertainty involved in being sure what activity was taking place on the water from as far away a 2km. For this reason it was not possible to quantify this aspect of the survey. A general trend can, however, be described from observations recorded. The main activity that boats were engaged in was definitely line fishing, and boats anchored outside Area 6 were usually fishing. Diving was also observed but at a comparatively low frequency.

The number of sailboats within the boat counts was recorded in the Whananaki areas but not at Mimiwhangata. However, some general observations on yacht usage at Mimiwhangata were made (C. Moretti, pers.comm.). Yachts make up a significant percentage (estimated at two-thirds) of the boats anchoring at Area 6 but were not otherwise a large percentage of recorded boats.

| <b>Mimiwhangata All Areas Full Survey Period Totals</b> |                    |                         |
|---|--------------------|-------------------------|
| <b>Activities</b>                                       | <b>Total Count</b> | <b>Count Avg/Survey</b> |
| Boats anchored  | 198                | 4.6                     |
| Boats moving  | 79                 | 1.8                     |
| Boats total   | 277                | 6.4                     |
| <b>Shore Activities</b>                                 |                    |                         |
| Snorkelling   | 1                  | 0.02                    |
| Kayaking  | 34                 | 0.8                     |
| Shellfish gathering                                     | 11                 | 0.3                     |
| Fishing offshore  | 55                 | 1.3                     |
| Waterskiing   | 7                  | 0.2                     |
| People on shore   | 316                | 7.45                    |
| Swimming/surfing  | 38                 | 0.9                     |
| Scientific research                                     | 3                  | 0.1                     |

**Table 1 Mimiwhangata Use Data for All Areas Full Survey Period (n of survey = 43)**

### **Mimiwhangata: Use Patterns over Holiday and Non-Holiday periods**

In Tables 2-4 below, survey data was broken up into three distinct time periods in an attempt to show differences in visitor use patterns over the course of the summer. Data collected for the Christmas New Year period was taken from 22<sup>nd</sup> December to 2<sup>nd</sup> January. Data collected for the Easter period was taken from April 22<sup>nd</sup> to April 28<sup>th</sup>. The number of people visiting Mimiwhangata during the Christmas - New Year period is high relative to the rest of the summer. The comparison is best shown by the average count per survey columns in the tables. For the total number of boats counted the average count in the Christmas survey period was 21.3. This compares with Easter at 9.8, and the remainder non-holiday summer periods at 4.7.

It is worth noting that the Christmas - New Year period has a higher relative percentage of boats at the anchorage (Area 6) than the other periods. This is presumably due to the large increase in cruising craft moving up and down the coast from the Bay of Islands at this time of year.

| <b>Mimiwhangata</b>     | <b>Christmas and New Year</b> |                               |                               |                                    |
|-------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------------|
| <b>Activities</b>       | <b>Total Count</b>            | <b>Total Count Avg/Survey</b> | <b>Area 6 Anchorage Count</b> | <b>Area 6 Anchorage Avg/Survey</b> |
| Boats anchored          | 51                            | 17.0                          | 37.0                          | 12.3                               |
| Boats moving            | 13                            | 4.3                           | 0                             | 0                                  |
| Boats total             | 64                            | 21.3                          | 37.0                          | 12.3                               |
| <b>Shore Activities</b> |                               |                               |                               |                                    |
| Snorkelling             | 1                             | 0.3                           | 0                             | 0                                  |
| Kayaking                | 0                             | 0.0                           | 0                             | 0                                  |
| Shellfish gathering     | 0                             | 0.0                           | 0                             | 0                                  |
| Fishing off shore       | 9                             | 3.0                           | 2.0                           | 0.7                                |
| Waterskiing             | 0                             | 0.0                           | 0                             | 0                                  |
| People on shore         | 21                            | 7.0                           | 3.0                           | 1.0                                |
| Swimming/surfing        | 1                             | 0.3                           | 0                             | 0                                  |
| Scientific research     | 0                             | 0.0                           | 0                             | 0                                  |

**Table 2 Mimiwhangata Christmas New Year Period Use Data (n of surveys = 3)**

| <b>Mimiwhangata</b>     | <b>Easter Week</b> |                               |                               |                                    |
|-------------------------|--------------------|-------------------------------|-------------------------------|------------------------------------|
| <b>Activities</b>       | <b>Total Count</b> | <b>Total Count Avg/Survey</b> | <b>Area 6 Anchorage Count</b> | <b>Area 6 Anchorage Avg/Survey</b> |
| Boats anchored          | 42                 | 8.4                           | 5.0                           | 1.0                                |
| Boats moving            | 7                  | 1.4                           | 0                             | 0                                  |
| Boats total             | 49                 | 9.8                           | 5.0                           | 1.0                                |
| <b>Shore Activities</b> |                    |                               |                               |                                    |
| Snorkelling             | 0                  | 0                             | 0                             | 0                                  |
| Kayaking                | 3                  | 0.6                           | 2.0                           | 0.4                                |
| Shellfish gathering     | 0                  | 0                             | 0                             | 0                                  |
| Fishing off shore       | 9                  | 1.8                           | 1.0                           | 0.2                                |
| Waterskiing             | 0                  | 0                             | 0.0                           | 0                                  |
| People on shore         | 10                 | 2.0                           | 2.0                           | 0.4                                |
| Swimming/surfing        | 0                  | 0                             | 0                             | 0                                  |
| Scientific research     | 0                  | 0                             | 0                             | 0                                  |

**Table 3 Mimiwhangata Easter Period Use (n of surveys = 5)**

| <b>Mimiwhangata</b>     | <b>Non-Holiday Summer</b> |                               |                               |                                    |
|-------------------------|---------------------------|-------------------------------|-------------------------------|------------------------------------|
| <b>Activities</b>       | <b>Total Count</b>        | <b>Total Count Avg/Survey</b> | <b>Area 6 Anchorage Count</b> | <b>Area 6 Anchorage Avg/Survey</b> |
| Boats anchored          | 105                       | 3.0                           | 21.0                          | 0.6                                |
| Boats moving            | 59                        | 1.7                           | 8.0                           | 0.2                                |
| Boats total             | 164                       | 4.69                          | 29.0                          | 0.8                                |
| <b>Shore Activities</b> |                           |                               |                               |                                    |
| Snorkelling             | 0                         | 0                             | 0                             | 0                                  |
| Kayaking                | 31                        | 0.9                           | 12.0                          | 0.3                                |
| Shellfish gathering     | 11                        | 0.3                           | 0                             | 0                                  |
| Fishing off shore       | 37                        | 1.1                           | 3.0                           | 0.1                                |
| Waterskiing             | 7                         | 0.2                           | 4.0                           | 0.1                                |
| People on shore         | 285                       | 8.1                           | 89.0                          | 2.5                                |
| Swimming/surfing        | 37                        | 1.1                           | 20.0                          | 0.6                                |
| Scientific research     | 3                         | 0.1                           | 3.0                           | 0.1                                |

**Table 4 Mimiwhangata Non-Holiday Period Use (n of surveys = 35)**

The maximum total boat count was recorded on December 30 at 35. Weather conditions on the maximum boat count day were fine with a 5 knot southeast wind blowing. Of the two other sample days during the Christmas - New Year period, one day was fine with a 5 knot westerly and the other partly cloudy with a 20 knot southeaster wind.

The breakdown of totals for wind direction over the entire survey period is given in Table 6 below. There is a trend of dropping visitor use when the wind is strong onshore, coming from the easterly quarter. This wind pattern is normally accompanied by cloudy weather. The 2002 – 2003 summer season was marked by long periods of southeast winds which could arguably have kept visitor use numbers well below what they would have been if light winds and sunny conditions had prevailed. This is discussed further below with the comments on visitor use in the current summer season.

The numbers recorded in this survey show clearly that use of the Marine Park by boats is disproportionately high over the Christmas – New Year period. Total boat use is as much as five times higher than non-holiday summer usage. The Easter period is also a peak use time with approximately double the non-holiday summer use pattern.

### **Whananaki**

In comparing the Whananaki and Mimiwhangata survey sites, it should be noted that the Mimiwhangata site is approximately 4 times larger and has significantly more complexity in both the coastline and the extent of sheltered areas in various wind conditions. Taking this into account average counts per survey for the two sites are quite comparable, with the caveat that Whananaki does not have Mimiwhangata's anchorage usage and facilities.

A key observation as regards the Whananaki site is that shore-based use is proportionately much higher (approximately 10-fold with no adjustment for survey area difference) than at Mimiwhangata. People on the shore and swimming/surfing were by far the most popular activities, with fishing, snorkelling and kayaking recorded at much lower levels. This large difference in shore-based activity is presumed to be the result of relatively better road access to the Whananaki area.

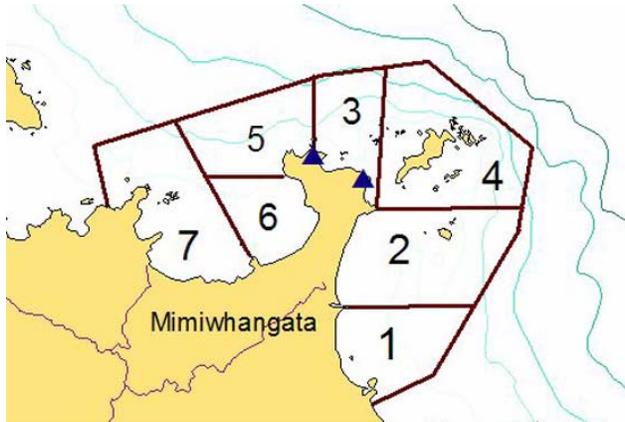
| Whananaki<br>Activities     | Christmas and<br>New Year |                | Easter Period  |                | Non-Holiday<br>Summer |                | Full<br>Period |                |
|-----------------------------|---------------------------|----------------|----------------|----------------|-----------------------|----------------|----------------|----------------|
|                             | Total<br>Count            | Avg<br>/Survey | Total<br>Count | Avg<br>/Survey | Total<br>Count        | Avg<br>/Survey | Total<br>Count | Avg<br>/Survey |
| Sailboat                    | 32                        | 5.3            | 3              | 0.6            | 8                     | 0.3            | 43             | 1.1            |
| Boats<br>anchored           | 10                        | 1.7            | 11             | 2.2            | 26                    | 1              | 47             | 1.2            |
| Boats<br>moving             | 7                         | 1.2            | 1              | 0.2            | 9                     | 0.3            | 17             | 0.4            |
| <b>Boats total</b>          | <b>49</b>                 | <b>8.2</b>     | <b>15</b>      | <b>3</b>       | <b>43</b>             | <b>1.6</b>     | <b>41</b>      | <b>1.1</b>     |
| <b>Shore<br/>Activities</b> |                           |                |                |                |                       |                |                |                |
| Snorkelling                 | 6                         | 1              | 0              | 0              | 12                    | 0.4            | 18             | 0.5            |
| Kayaking                    | 12                        | 2              | 7              | 1.4            | 10                    | 0.4            | 29             | 0.8            |
| Shellfish<br>gathering      | 0                         | 0              | 0              | 0              | 6                     | 0.2            | 6              | 0.2            |
| Fishing off<br>shore        | 7                         | 1.2            | 10             | 2              | 27                    | 1              | 44             | 1.2            |
| People on<br>shore          | 390                       | 65             | 60             | 12             | 315                   | 11.7           | 765            | 20.1           |
| Swimming/<br>surfing        | 194                       | 32.3           | 6              | 1.2            | 190                   | 7              | 390            | 10.3           |
| Scientific<br>research      | 0                         | 0              | 0              | 0              | 0                     | 0              | 0              | 0              |
| <b>n=</b>                   | <b>6</b>                  |                | <b>5</b>       |                | <b>27</b>             |                | <b>38</b>      |                |

**Table 5 Whananaki Visitor Use Data (n of surveys, Christmas & New Year = 6, Easter = 5, Non-holiday summer = 27, full period = 38)**

### **Mimiwhangata: Analysis of use in different wind conditions**

One of the objectives of the study was to test usage of the Park under different wind conditions. Figure 2 shows how data was recorded by areas, and Figures 3-22 show the analysis of use in each area under three levels of wind strength for winds from various sectors. Table 6 gives a summary of the number of days that surveys were conducted under each of the varying wind directions and wind strengths. For this analysis the data from areas 1&2 were combined based on their similar

exposure and use characteristics. Areas 3&5 were also combined for the same reasons for this analysis.



*Figure 2 Mimiwhangata survey map, (triangles mark vantage points)*

East to Southeast Winds: (Figures 3-7)

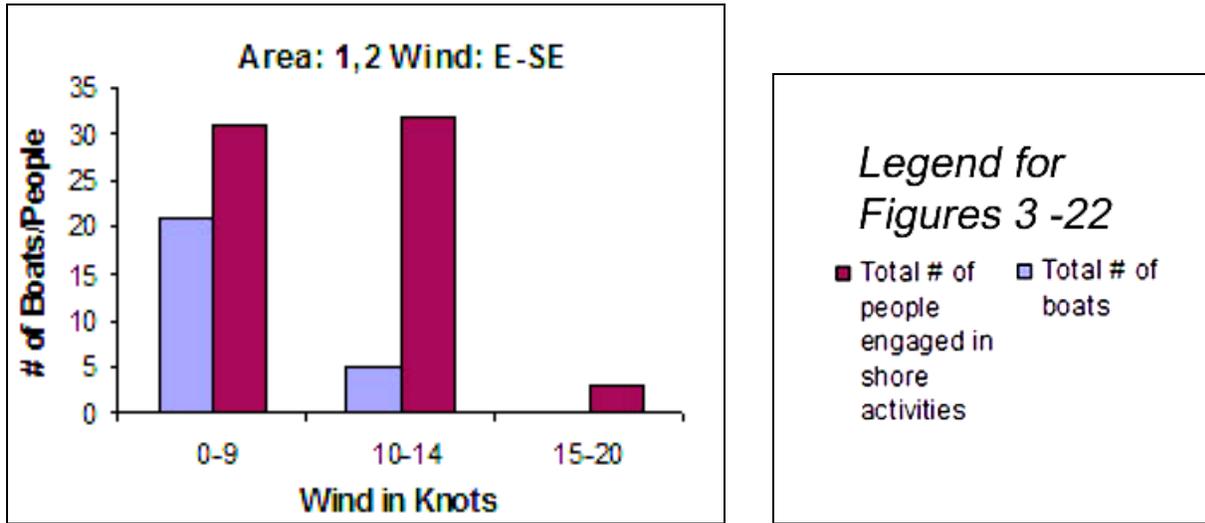


Figure 3

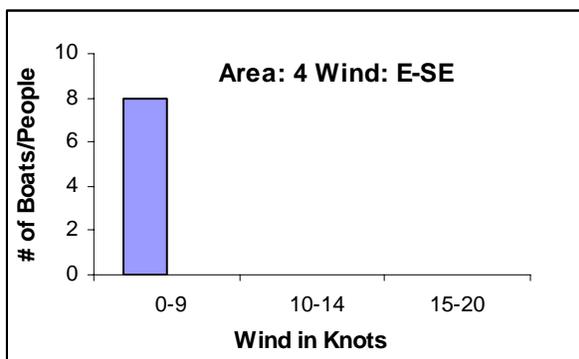


Figure 4

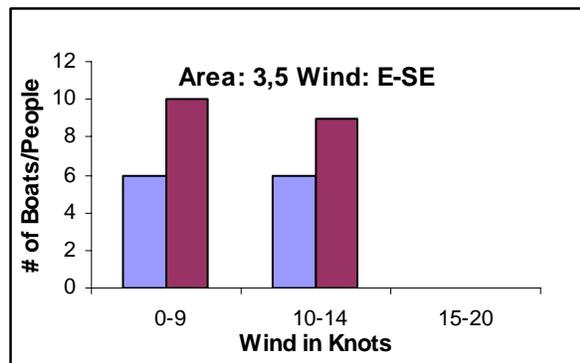


Figure 5

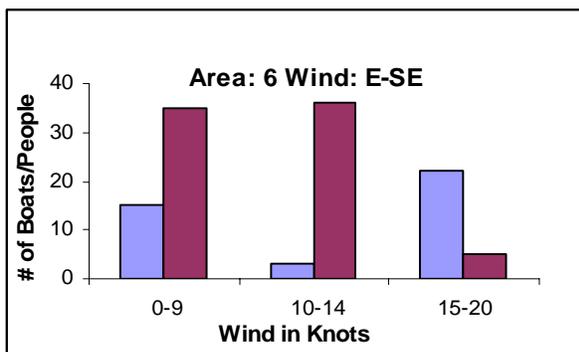


Figure 6

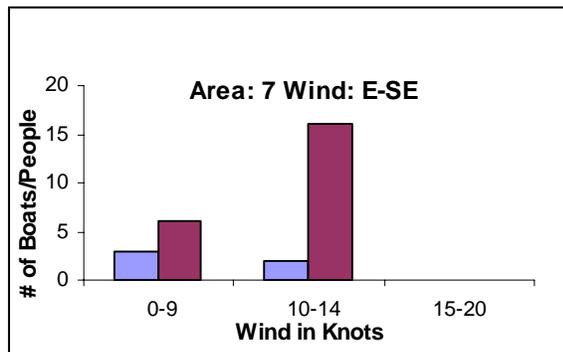
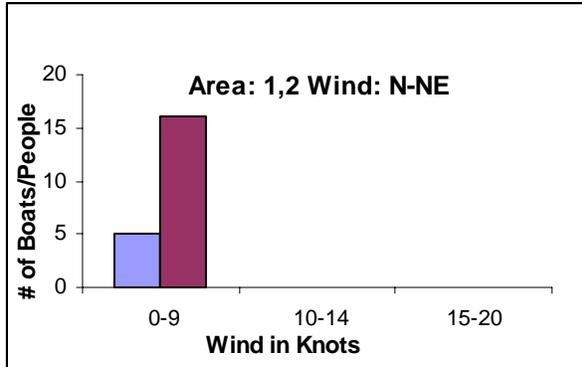


Figure 7

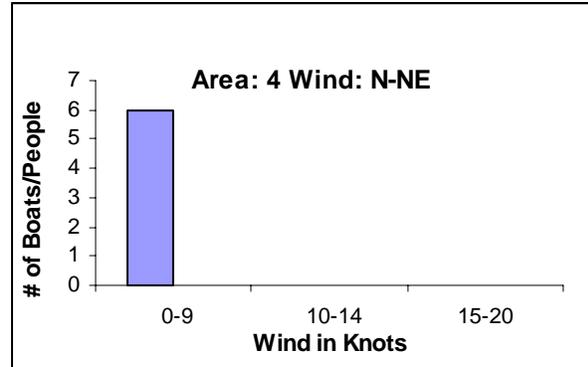
The pattern of use in east and southeast winds reflects expectations for boat use in the exposed parts of the Park. Areas 1, 2 and 4 are generally used only in winds less than 10 knots. As the wind increases to 15 knots, use of the Park reduces considerably with usage concentrated in areas 3, 5, 6 and 7. This reflects the shelter afforded by the Mimiwhangata and Paparahi peninsulas in this wind condition. Once wind speeds get beyond 15 knots, boating activity (with the exception of the

anchorage in Area 6) essentially ceases. The effect on shore-based use is a considerable decrease when wind strength exceeds 15 knots.

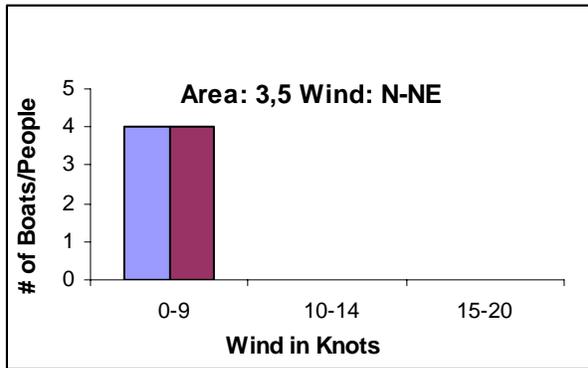
**North to Northeast Winds: (Figures 8-12)**



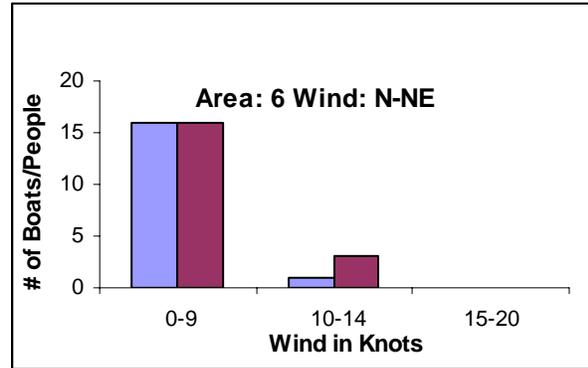
*Figure 8*



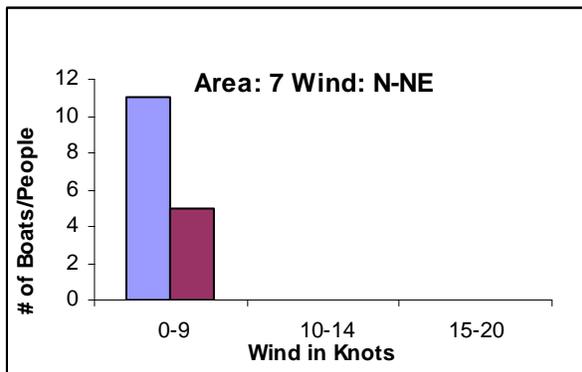
*Figure 9*



*Figure 10*



*Figure 11*

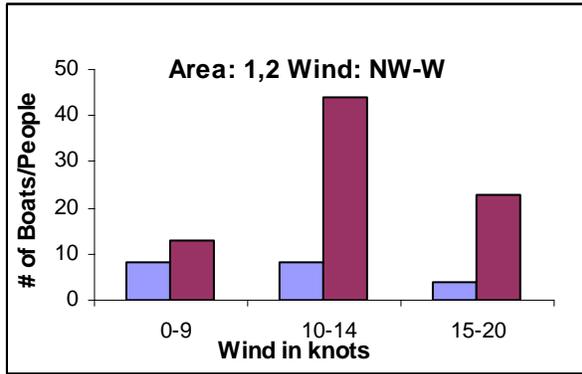


*Figure 12*

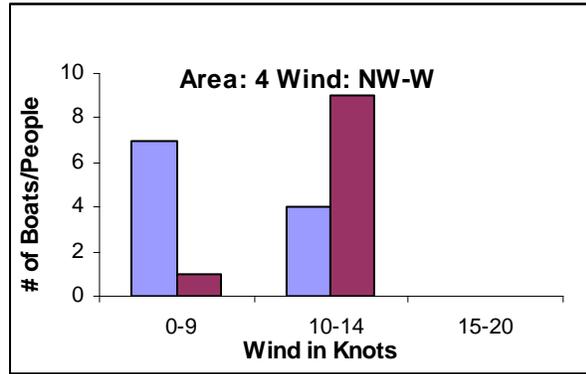
Caution needs to be taken in interpreting the results recorded for this wind direction, as only 3 days were surveyed and all of these were northeast rather than northerly winds.

The use pattern is similar to other areas with use dropping off markedly compared to the other wind directions with increasing wind strength. Overall Area 6 (the anchorage area at Whale Bay) appears to have less use in these conditions than other winds, however it is the only area used by boats in this wind once wind strength exceeds 14 knots. A decreasing trend in shore-based activity was evident in higher winds from this direction.

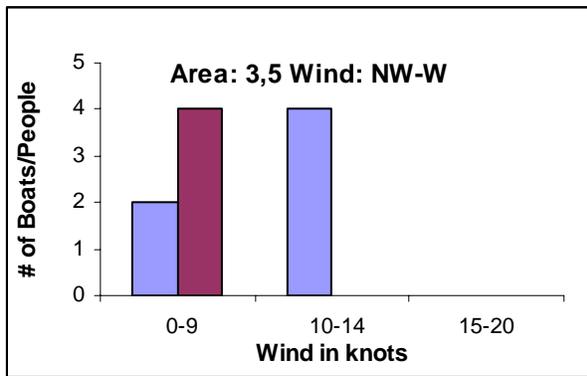
**Northwest to West Winds: (Figures 13-17)**



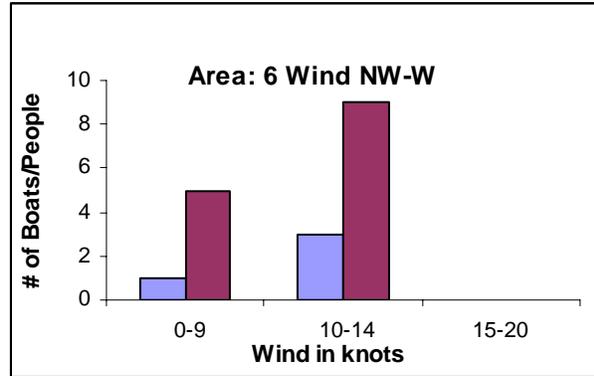
*Figure 13*



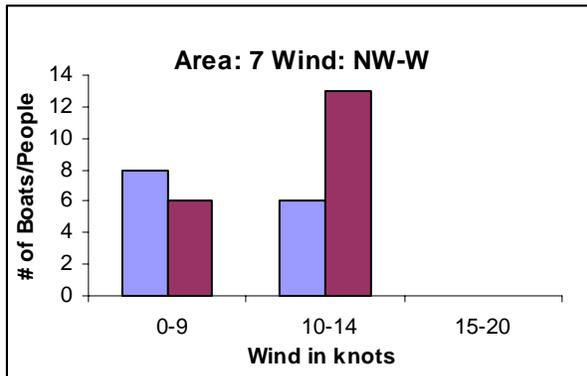
*Figure 14*



*Figure 15*



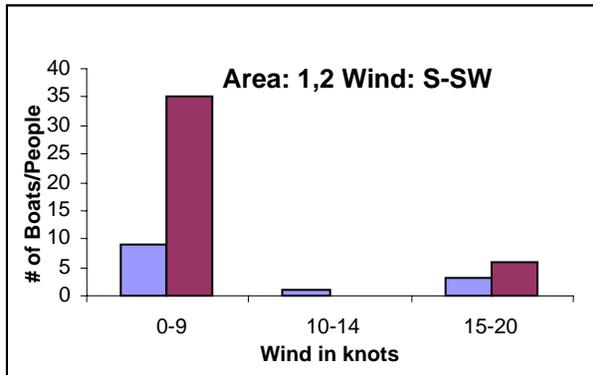
*Figure 16*



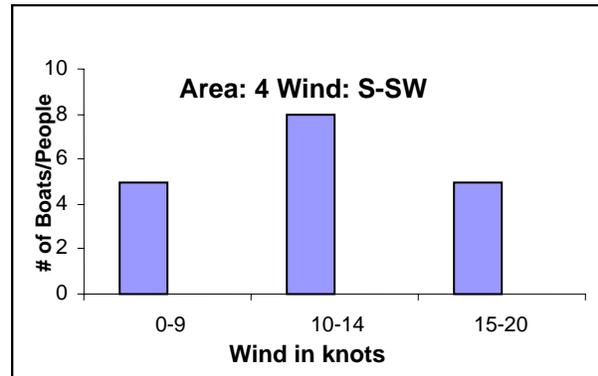
*Figure 17*

In Areas 1 and 2 (including Okupe Beach), which are sheltered areas in these winds, there were relatively high levels of use for shore-based activities. However, boat activity levels were low and there was no use at all in high winds. Area 4, Rimariki Island, was used by boats and people on shore during low and medium winds but not during high winds. Areas 3 and 5 were used by people and boats in low winds, boats only in medium winds and there was no use in high winds. Areas 6 and 7 (Whale Bay and Paparahi Point) were used by both boats and people in light winds but not in higher winds.

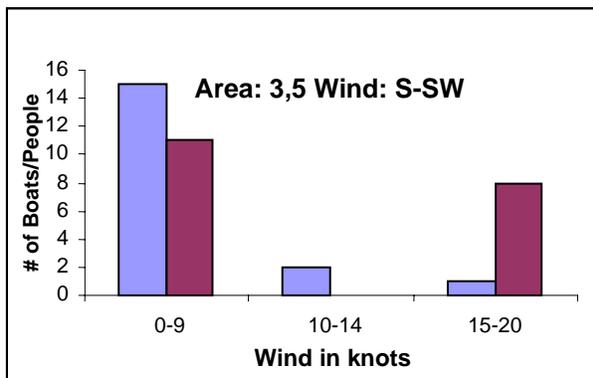
**South to Southwest Winds: (Figures 18-22)**



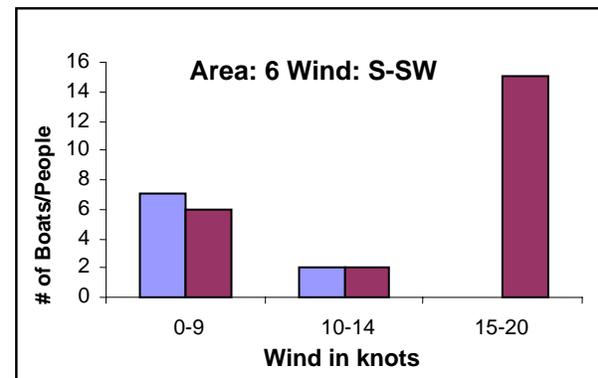
*Figure 18*



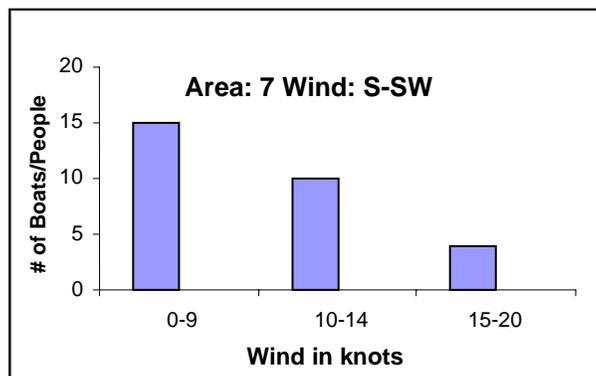
*Figure 19*



*Figure 20*



*Figure 21*



*Figure 22*

This wind condition creates the most sheltered sites of any wind condition in all survey areas/ However, a strong southerly can tend to blow up the coast and create quite choppy conditions on the southern side of Rimariki Island (Area 4). The surveys demonstrate a fluctuation between high levels of shore-based use in Areas 1, 2, 3, 5 and 6 and no shore-based use at all in Areas 4 and 7. The level of boat activity was similar in all areas apart from Areas 1 and 2 which had generally

lower levels. In all areas both boat and shore-based activities decreased in higher winds, but only in Area 6 did boating completely cease.

The analysis of use in differing wind conditions at Mimiwhangata showed several clear patterns. Levels of use (especially by boats) tapered off dramatically once winds rose above the 14 knot mark. The analysis tables for this work are included in Appendix 2. Results are summarised below:

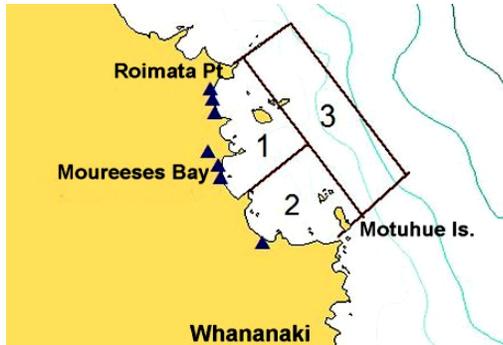
- Boating activity in all areas took place predominantly in wind conditions of less than 10 knots.
- As winds rose to 10-14 knots, very little or no boating activity was recorded in marked contrast to lighter wind conditions. It is believed that this reflects the problem that boats have in getting to Mimiwhangata in wind conditions in excess of 14 knots.
- The exceptions to the above general statements was Area 6 which showed boating activity, (predominantly anchoring), still took place in winds over 15 knots from the east – southeast direction. And in Area 4, Rimariki Island some boating activity was still present in south to southwest winds over 15 knots.
- In terms of shore-based activities the majority of use occurred in light winds under 10 knots and did not appear to be affected by wind direction. As the wind increased into the 10-15 knot range, the number of people engaged in activities decreased to approximately 10% or less of the numbers recorded on days of light winds.

| <b>Mimiwhangata Number of Days Surveyed in Different Wind Conditions</b> |                            |                 |                 |
|--|----------------------------|-----------------|-----------------|
| <b>Wind Direction</b>  | <b>Wind Speed in Knots</b> |                 |                 |
|  | <b>0 to 9</b>              | <b>10 to 14</b> | <b>15 to 20</b> |
| <b>East – Southeast</b>  | 5                          | 7               | 2               |
| <b>North – Northeast</b>   | 2                          | 1               | 0               |
| <b>West – Northwest</b>  | 7                          | 1               | 3               |
| <b>South– Southwest</b>  | 5                          | 8               | 2               |
| <b>n= 43</b>   |                            |                 |                 |

| <b>Whananaki Number of Days Surveyed in Different Wind Conditions</b> |                            |                 |                 |
|---|----------------------------|-----------------|-----------------|
| <b>Wind Direction</b>   | <b>Wind Speed in Knots</b> |                 |                 |
|   | <b>0 to 9</b>              | <b>10 to 14</b> | <b>15 to 20</b> |
| <b>East - Southeast</b>   | 3                          | 1               | 1               |
| <b>North - Northeast</b>  | 8                          | 0               | 4               |
| <b>West – Northwest</b>   | 6                          | 1               | 0               |
| <b>South - Southwest</b>  | 8                          | 1               | 2               |
| <b>n= 35</b>  |                            |                 |                 |
| <b>Note: 3 days no wind direction or wind speed recorded</b>          |                            |                 |                 |

## Table 6 Analysis of Number of Days Surveyed in Different Wind Conditions

### Whananaki: Analysis of Use in Differing Wind Conditions



*Figure 3 Map of Whananaki survey areas, (triangles mark vantage points)*

The analysis of use in differing wind conditions at Whananaki showed several patterns that are similar to more exposed, east-facing areas of Mimiwhangata such as Okupe Beach. As with the Mimiwhangata surveys, levels of use (especially by boats) tapered off dramatically once winds rose above the 15 knot mark. The analysis tables for this work are included in Appendix 2. Results are summarised below:

- Boating activity in all three areas took place predominantly in wind conditions of less than 10 knots. The inshore Areas 1 and 2 were used more than the offshore Area 3. Levels of use were approximately the same for each of the wind directions except for the east to southeast direction where activity was generally lower.
- As winds rose to 10-14 knots, very little or no boating activity was recorded in any area, in marked contrast to lighter wind conditions.
- There was close to no recorded boating activity when winds rose above 14 knots, regardless of wind direction. It is believed that this reflects the relatively exposed nature of the Whananaki coastline.
- In terms of shore-based activity recorded in Areas 1 and 2, the majority of use occurred in light winds under 10 knots and did not appear to be affected by wind direction. As the wind increased into the 10-15 knot range, the number of people engaged in activities decreased to approximately 10% of the numbers recorded on days of light winds. When winds were in excess of 15 knots, only a few people used these areas.

## Accommodation Records

Appendix 3 contains a record of the numbers of people that stayed overnight at the Park between November 2002 and October 2003. Accommodation at Mimiwhangata includes Waikahoa campground, a beach house, a cottage and a lodge. There are also some notes on average figures for casual visitors based on counts taken in the car park. These records are summarised below:

|  |               |
|--|---------------|
| Summer accommodation (actual count)  | 3,031         |
| Winter accommodation (actual count)  | 1,540         |
| Estimate of casual visitors/year based on car park counts, (see Appndix 3) | 15,386        |
| <b>Total</b>   | <b>19,957</b> |

## Estimate of Total Visitor Number for Year 2002-2003

Using some approximations based on the various sources of data available, an estimate of the total use of the Mimiwhangata Park is given below. This estimate has been made in an attempt to construct a picture of overall use of the Park. The figures are indicative only as the boat and shore surveys were sample-based and therefore likely to underestimate total numbers. Also the number of land-based visits is based on a estimation from car park surveys. The approximations and calculations used are included in Appendix 3.

|                               |               |
|-------------------------------|---------------|
| Boat-based visits # of people | 5,200         |
| Land-based visits # of people | 20,000        |
| <b>Total</b>                  | <b>25,000</b> |

## DISCUSSION

Mimiwhangata is an important recreational area in the Northland context. The numbers of user visits are significant given that there is quite poor road access and no boat ramp facilities in the Park. Most small boats would come from Whananaki to the south and Teal and Helena Bays and Oakura from the north. Larger vessels would be in transit from or to Auckland from points north or come from Bay of Islands, Tutukaka or Whangarei. People overcome these obstacles in access because Mimiwhangata offers something special. The special natural character and experience of Mimiwhangata is reflected frequently in visitor comments and by the number of return visitors to the park (Chris Moretti pers.comm.). While poor access and the low-impact management policies currently in place have been successful in preserving the natural character of the area to date, there is good reason to monitor increasing demands being placed on the Park by growing numbers of visitors if this is the case. This summer, (2004), witnessed a definite increase in visitors to the Park (C. Moretti pers.com., see Appendix 6). This coincided with a long period of optimal weather for visitors, with virtually very few days with winds over 15 knots and many settled sunny days. There are indications in the data that visitor numbers reduce dramatically in bad weather and increase correspondingly in fine settled weather. At Mimiwhangata, use of the Park on a stormy day is typically 10-20% of use on a fine settled day. As these weather patterns vary greatly in Northland from year to year, the weather factor can be expected to have a very large bearing on visitor numbers. A possible trend is demonstrated by comparison of the 2002-2003 study to an apparent increase in use has occurred over the most recent, (2003-2004) summer season, (see Appendix 6).

It is difficult to project growth trends into the future as there are many factors affecting visitor use each year. However, it is a safe conclusion that there will be growth in use of the Park. This growth will increasingly test the management regime now in place. Pre-planning in anticipation of increased visitor pressure and demands is worthwhile.

Mimiwhangata is well known as a fishing destination. Observations from this study indicate that there is a steady use of boats for fishing at Mimiwhangata and that fishing is the predominant activity of boats with anchoring and diving being the other significant uses. The present study was not able to obtain absolute numbers for the categories of boat use, but this general pattern is clearly supported by observations. By comparison, visitors who come to fish from land are a minority with hiking, swimming and other nature-based recreational activities being far more prevalent.

The survey results show that Mimiwhangata was not used by boats to any great extent in periods of strong winds in excess of 15 knots. The boat use pattern in winds greater than 15 knots was similar to that recorded at Whananaki which lacks the extensive areas of sheltered water that Mimiwhangata has. This suggests that even though Mimiwhangata may offer a sheltered position somewhere in most strong winds boats are not generally keen to venture out far enough to get to Mimiwhangata in these conditions. The exception to this is the anchorage at Whale Bay which is extensively used during the Christmas and holiday period if boats are able to get to Mimiwhangata. During this period there are a higher number of larger boats that use the anchorage area.

An important trend that is demonstrated by the results of the current study is the relatively high use of the Park during the Christmas and New Year period. During this period, visitor numbers can be four times what they are in a normal summer period and double what they are in the Easter week. This pattern creates special challenges for managing accommodation and the impacts of high visitor numbers on the Park environment during peak use periods.

## **ACKNOWLEDGEMENTS**

The authors would like to thank Northland Conservancy, Department of Conservation, for providing financial support which has enabled the Mimiwhangata investigation to be completed. Samara Sutherland at Whananaki selected the vantage points for the survey and completed the data collection work. At Mimiwhangata, Department of Conservation ranger Chris Moretti and his wife Nadeane helped with much local knowledge in setting up the survey and completing the data collection work. Thanks to Lynnie Gibson, Department of Conservation, for supplying the accommodation records for Mimiwhangata. Leane Mackie, formerly with the Department of Conservation, supplied templates for data collection forms and advice to the project. Special thanks for many worthwhile suggestions on improving the report to the peer review team consisting of Anne McCrone, Marine Conservation Unit, Department of Conservation and Keith Hawkins and Tony Beauchamp, Northland Conservancy, Department of Conservation. Thanks to Barbara Ware Department of Conservation and Jessica Kerr for editing and proof reading contributions.

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## Appendix 1 1981 Mimiwhangata Visitor Use Report

Table 3: Reason for Visit

| Activity                  | Number of Parties | Percentage of Groups |
|---------------------------|-------------------|----------------------|
| Fishing                   | 10                | 13%                  |
| Picnicking                | 28                | 35%                  |
| Swimming                  | 41                | 52%                  |
| Sightseeing               | 48                | 61%                  |
| Walking                   | 34                | 43%                  |
| Tramping                  | 2                 | 3%                   |
| Snorkelling               | 12                | 15%                  |
| Scuba Diving              | 1                 | 1%                   |
| Boating (trailer)         | 2                 | 3%                   |
| Boating (roof-rack)       | 4                 | 5%                   |
| Curiosity                 | 37                | 47%                  |
| Other: Relatives          | 1                 | 1%                   |
| Native Flora and Fauna    | 1                 | 1%                   |
| Surfing                   | 4                 | 5%                   |
| Canoeing                  | 1                 | 1%                   |
| Revisiting old Homestead  | 1                 | 1%                   |
| Looking for Land Purchase | 1                 | 1%                   |
| No Response               | 1                 | 1%                   |

Table 8: Areas Visited - Length of Stay

|                     | Half Day | Full Day | Unspecified |
|---------------------|----------|----------|-------------|
| Kupe Beach          | 76%      | 80%      | 61%         |
| Mimiwhangata Beach  | 49%      | 80%      | 56%         |
| Tohumoana Track     | 4%       | 27%      | 6%          |
| Farm                | 18%      | 27%      | 17%         |
| Airstrip            | 7%       |          | 6%          |
| Stream Walk         | 2%       |          |             |
| Other Coastal Areas | 9%       | 20%      | 6%          |
| Not specified       |          |          | 6%          |
| Total No. Groups    | 45       | 15       | 18          |

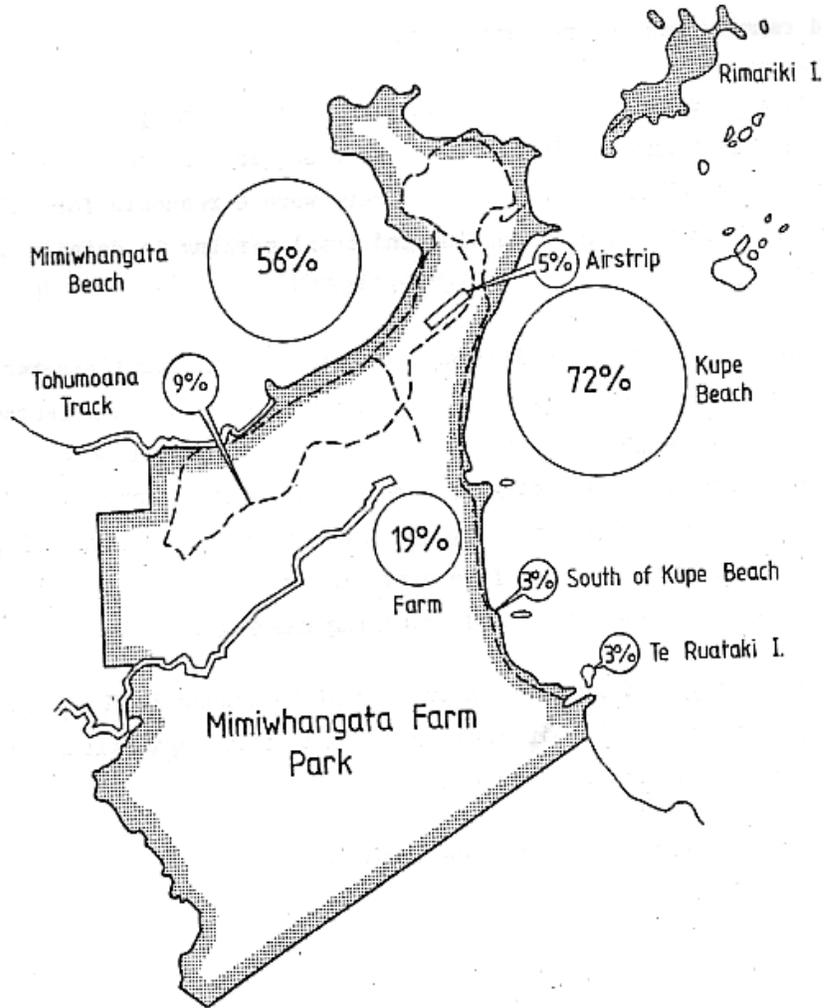
Table 9: Areas Visited - Reason for Visit

|                    | Kupe Beach | Mimiwhangata Beach | Tohumoana Track | Farm | Airstrip | Stream Walk | Other Coastal areas | Number of Parties |
|--------------------|------------|--------------------|-----------------|------|----------|-------------|---------------------|-------------------|
| Fishing            | 70%        | 60%                | 20%             | 10%  |          |             | 20%                 | 10                |
| Picnicking         | 70%        | 70%                | 13%             | 20%  | 7%       |             | 3%                  | 30                |
| Swimming           | 67%        | 65%                | 12%             | 19%  | 2%       |             | 9%                  | 43                |
| Sightseeing        | 70%        | 62%                | 10%             | 26%  | 8%       |             | 8%                  | 50                |
| Walking            | 78%        | 61%                | 17%             | 19%  | 3%       | 3%          | 14%                 | 36                |
| Tramping           | 100%       |                    |                 |      |          |             |                     | 2                 |
| Snorkelling        | 67%        | 58%                | 17%             | 8%   |          |             | 8%                  | 12                |
| Scuba Diving       |            | 100%               |                 |      |          |             |                     | 1                 |
| Boating (trailer)  |            | 100%               |                 |      |          |             |                     | 2                 |
| Boating (roofrack) | 75%        | 50%                |                 |      |          |             | 25%                 | 4                 |
| Curiosity          | 78%        | 54%                | 14%             | 14%  |          |             | 11%                 | 37                |
| Surf/Canoe         | 50%        | 25%                |                 |      |          |             | 25%                 | 4                 |
| Other              | 75%        | 50%                |                 | 100% |          |             | 25%                 | 4                 |

Table 12: Areas of Park Visited

| <u>Areas Visited</u>                                      | <u>Number of Parties</u> | <u>Percentage</u> |
|---|--------------------------|-------------------|
| Kupe Beach  | 57                       | 72%               |
| Mimiwhangata Beach  | 44                       | 56%               |
| Tohumoana Track   | 7                        | 9%                |
| Farm  | 15                       | 19%               |
| Airstrip  | 4                        | 5%                |
| South of Kupe Beach                                       | 2)                       | 3%                |
| Te Ruataki Island   | 2) i.e. other            | 3%                |
| Rocks   | 1) coastal               |                   |
| Tuakawpio   | 1) areas                 | 10%               |
| Stream Walk   | 1                        | 1%                |
| Total of 136 responses on roughly 1.7 responses per party |                          |                   |

FIGURE 14 Areas Visited



## Appendix 2 Wind Analysis Tables

### Mimiwhangata East Southeast Wind - Analysis of Use

| <u>Mimiwhangata -<br/>Wind E-SE -<br/>Areas 1,2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 21         | 5            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 9          | 0            | 0            |
| Fishing off shore                                   | 0          | 0            | 0            |
| Swimming/surfing                                    | 0          | 4            | 0            |
| People on shore                                     | 22         | 28           | 3            |
| <b>Total</b>  | <b>52</b>  | <b>37</b>    | <b>3</b>     |

| <u>Mimiwhangata -<br/>Wind E-SE - Area 4</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                    | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                  | 8          | 0            | 0            |
| <b>Shore Activities</b>                      |            |              |              |
| Snorkeling                                   | 0          | 0            | 0            |
| Kayaking                                     | 0          | 0            | 0            |
| Fishing off shore                            | 0          | 0            | 0            |
| Swimming/surfing                             | 0          | 0            | 0            |
| People on shore                              | 0          | 0            | 0            |
| <b>Total</b>                                 | <b>8</b>   | <b>0</b>     | <b>0</b>     |

| <u>Mimiwhangata -<br/>Wind E-SE -<br/>Areas 3,5</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 6          | 6            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off shore                                   | 10         | 8            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 0          | 1            | 0            |
| <b>Total</b>  | <b>16</b>  | <b>15</b>    | <b>0</b>     |

| <u>Mimiwhangata -<br/>Wind E-SE - Area 6</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                    | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                  | 15         | 3            | 22           |
| <b>Shore Activities</b>                      |            |              |              |
| Snorkeling                                   | 0          | 0            | 0            |
| Kayaking                                     | 10         | 2            | 0            |
| Fishing off shore                            | 2          | 2            | 0            |
| Swimming/surfing                             | 6          | 8            | 0            |
| People on shore                              | 19         | 24           | 5            |
| <b>Total</b>                                 | <b>52</b>  | <b>39</b>    | <b>27</b>    |

| <u>Mimiwhangata -<br/>Wind E-SE -<br/>Area 7</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                        | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                      | 3          | 2            | 0            |
| <b>Shore Activities</b>                          |            |              |              |
| Snorkeling                                       | 0          | 0            | 0            |
| Kayaking   | 0          | 0            | 0            |
| Fishing off shore                                | 0          | 2            | 0            |
| Swimming/surfing                                 | 6          | 6            | 0            |
| People on shore                                  | 0          | 8            | 0            |
| <b>Total</b>                                     | <b>9</b>   | <b>18</b>    | <b>0</b>     |

### Mimiwhangata North Northeast Wind - Analysis of Use

| <u>Mimiwhangata -<br/>Wind N-NE –<br/>Areas 1,2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 5          | 0            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off shore                                   | 0          | 0            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 16         | 0            | 0            |
| <b>Total</b>  | <b>21</b>  | <b>0</b>     | <b>0</b>     |
|   |            |              |              |
| <u>Mimiwhangata -<br/>Wind N-NE –<br/>Area 3,5</u>  |            |              |              |
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 4          | 0            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off the shore                               | 4          | 0            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 0          | 0            | 0            |
| <b>Total</b>  | <b>8</b>   | <b>0</b>     | <b>0</b>     |
|   |            |              |              |
| <u>Mimiwhangata -<br/>Wind N-NE –<br/>Area 7</u>    |            |              |              |
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 11         | 0            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off the shore                               | 0          | 0            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 5          | 0            | 0            |
| <b>Total</b>  | <b>16</b>  | <b>0</b>     | <b>0</b>     |

| <u>Mimiwhangata -<br/>Wind N-NE - Area 4</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                    | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                  | 6          | 0            | 0            |
| <b>Shore Activities</b>                      |            |              |              |
| Snorkeling                                   | 0          | 0            | 0            |
| Kayaking                                     | 0          | 0            | 0            |
| Fishing off the shore                        | 0          | 0            | 0            |
| Swimming/surfing                             | 0          | 0            | 0            |
| People on shore                              | 0          | 0            | 0            |
| <b>Total</b>                                 | <b>6</b>   | <b>0</b>     | <b>0</b>     |

| <u>Mimiwhangata -<br/>Wind N-NE - Area 6</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                    | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                  | 16         | 1            | 0            |
| <b>Shore Activities</b>                      |            |              |              |
| Snorkeling                                   | 0          | 0            | 0            |
| Kayaking                                     | 0          | 0            | 0            |
| Fishing off the shore                        | 1          | 3            | 0            |
| Swimming/surfing                             | 3          | 0            | 0            |
| People on shore                              | 12         | 0            | 0            |
| <b>Total</b>                                 | <b>32</b>  | <b>4</b>     | <b>0</b>     |

### Mimiwhangata Northwest West Wind – Analysis of Use

| <u>Mimiwhangata -<br/>Wind NW-W -<br/>Areas 1,2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 8          | 8            | 4            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 2          | 0            | 0            |
| Fishing off the shore                               | 0          | 0            | 3            |
| Swimming/surfing                                    | 6          | 2            | 0            |
| People on shore                                     | 5          | 42           | 20           |
| <b>Total</b>  | 21         | 52           | 27           |
|   |            |              |              |
| <u>Mimiwhangata -<br/>Wind NW-W -<br/>Areas 3,5</u> |            |              |              |
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 2          | 4            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off the shore                               | 2          | 0            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 2          | 0            | 0            |
| <b>Total</b>  | 6          | 4            | 0            |
|   |            |              |              |
| <u>Mimiwhangata -<br/>Wind NW-W -<br/>Area 7</u>    |            |              |              |
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 8          | 6            | 0            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off the shore                               | 0          | 0            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 6          | 13           | 0            |
| <b>Total</b>  | 14         | 19           | 0            |

| <u>Mimiwhangata -<br/>Wind NW-W -<br/>Area 4</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                        | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                      | 7          | 4            | 0            |
| <b>Shore Activities</b>                          |            |              |              |
| Snorkeling                                       | 1          | 1            | 0            |
| Kayaking   | 0          | 8            | 0            |
| Fishing off the shore                            | 0          | 0            | 0            |
| Swimming/surfing                                 | 0          | 0            | 0            |
| People on shore                                  | 0          | 0            | 0            |
| <b>Total</b>                                     | 8          | 13           | 0            |

| <u>Mimiwhangata -<br/>Wind NW-W -<br/>Area 6</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                        | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                      | 1          | 3            | 0            |
| <b>Shore Activities</b>                          |            |              |              |
| Snorkeling                                       | 0          | 0            | 0            |
| Kayaking   | 0          | 0            | 0            |
| Fishing off the shore                            | 0          | 0            | 0            |
| Swimming/surfing                                 | 0          | 0            | 0            |
| People on shore                                  | 5          | 9            | 0            |
| <b>Total</b>                                     | 6          | 12           | 0            |

### Mimiwhangata South Southwest Wind - Analysis of Use

| <u>Mimiwhangata -<br/>Wind S-SW -<br/>Areas 1,2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 9          | 1            | 3            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 1          | 0            | 0            |
| Fishing off the shore                               | 4          | 0            | 0            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 30         | 0            | 6            |
| <b>Total</b>  | <b>44</b>  | <b>1</b>     | <b>9</b>     |

| <u>Mimiwhangata -<br/>Wind S-SW -<br/>Areas 3,5</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                           | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total   | 15         | 2            | 1            |
| <b>Shore Activities</b>                             |            |              |              |
| Snorkeling  | 0          | 0            | 0            |
| Kayaking  | 0          | 0            | 0            |
| Fishing off the shore                               | 11         | 0            | 5            |
| Swimming/surfing                                    | 0          | 0            | 0            |
| People on shore                                     | 0          | 0            | 3            |
| <b>Total</b>  | <b>26</b>  | <b>2</b>     | <b>9</b>     |

| <u>Mimiwhangata -<br/>Wind S-SW -<br/>Area 7</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                        | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                      | 15         | 10           | 4            |
| <b>Shore Activities</b>                          |            |              |              |
| Snorkeling                                       | 0          | 0            | 0            |
| Kayaking   | 0          | 0            | 0            |
| Fishing off the shore                            | 0          | 0            | 0            |
| Swimming/surfing                                 | 0          | 0            | 0            |
| People on shore                                  | 0          | 0            | 0            |
| <b>Total</b>                                     | <b>15</b>  | <b>10</b>    | <b>4</b>     |

| <u>Mimiwhangata -<br/>Wind S-SW - Area 4</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                    | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                  | 5          | 8            | 5            |
| <b>Shore Activities</b>                      |            |              |              |
| Snorkeling                                   | 0          | 0            | 0            |
| Kayaking                                     | 0          | 0            | 0            |
| Fishing off the shore                        | 0          | 0            | 0            |
| Swimming/surfing                             | 0          | 0            | 0            |
| People on shore                              | 0          | 0            | 0            |
| <b>Total</b>                                 | <b>5</b>   | <b>8</b>     | <b>5</b>     |

| <u>Mimiwhangata -<br/>Wind S-SW - Area 6</u> |            |              |              |
|--|------------|--------------|--------------|
| <b>Boating Activities</b>                    | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                                  | 7          | 2            | 0            |
| <b>Shore Activities</b>                      |            |              |              |
| Snorkeling                                   | 0          | 0            | 0            |
| Kayaking                                     | 0          | 2            | 0            |
| Fishing off the shore                        | 1          | 0            | 0            |
| Swimming/surfing                             | 3          | 0            | 0            |
| People on shore                              | 2          | 0            | 15           |
| <b>Total</b>                                 | <b>13</b>  | <b>4</b>     | <b>15</b>    |

### Whananaki East Southeast Wind - Analysis of Use

| <u>Whananaki - Wind<br/>E-SE - Area 1</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 1          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 0          | 0            | 0            |
| Fishing off the shore                     | 4          | 0            | 0            |
| Swimming/surfing                          | 1          | 5            | 0            |
| People on shore                           | 8          | 3            | 0            |
| <b>Total</b>                              | 14         | 8            | 0            |
| <u>Whananaki - Wind<br/>E-SE - Area 3</u> |            |              |              |
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 1          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 0          | 0            | 0            |
| Fishing off the shore                     | 0          | 0            | 0            |
| Swimming/surfing                          | 0          | 0            | 0            |
| People on shore                           | 0          | 0            | 0            |
| <b>Total</b>                              | 1          | 0            | 0            |

| <u>Whananaki - Wind<br/>E-SE - Area 2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 2          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 0          | 0            | 0            |
| Fishing off the shore                     | 0          | 0            | 0            |
| Swimming/surfing                          | 3          | 0            | 0            |
| People on shore                           | 10         | 0            | 0            |
| <b>Total</b>                              | 14         | 0            | 0            |

### Whananaki North Northeast Wind - Analysis of Use

| <u>Whananaki - Wind<br/>N-NE - Area 1</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 6          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 6          | 0            | 0            |
| Kayaking                                  | 12         | 0            | 0            |
| Fishing off the shore                     | 7          | 0            | 1            |
| Swimming/surfing                          | 110        | 0            | 7            |
| People on shore                           | 125        | 0            | 3            |
| <b>Total</b>                              | 266        | 0            | 11           |
| <u>Whananaki - Wind<br/>N-NE - Area 3</u> |            |              |              |
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 11         | 0            | 1            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 0          | 0            | 0            |
| Fishing off the shore                     | 0          | 0            | 0            |
| Swimming/surfing                          | 0          | 0            | 0            |
| People on shore                           | 0          | 0            | 0            |
| <b>Total</b>                              | 8          | 0            | 0            |

| <u>Whananaki - Wind<br/>N-NE - Area 2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 6          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 6          | 0            | 0            |
| Kayaking                                  | 2          | 0            | 0            |
| Fishing off the shore                     | 0          | 0            | 2            |
| Swimming/surfing                          | 80         | 0            | 2            |
| People on shore                           | 195        | 0            | 5            |
| <b>Total</b>                              | 289        | 0            | 9            |

### Whananaki Northwest West Wind - Analysis of Use

| <u>Whananaki - Wind<br/>NW-W - Area 1</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 4          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 4          | 0            | 0            |
| Fishing off the shore                     | 8          | 0            | 0            |
| Swimming/surfing                          | 22         | 4            | 0            |
| People on shore                           | 50         | 10           | 0            |
| <b>Total</b>                              | <b>88</b>  | <b>14</b>    | <b>0</b>     |
| <u>Whananaki - Wind<br/>NW-W - Area 3</u> |            |              |              |
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 5          | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 0          | 0            | 0            |
| Fishing off the shore                     | 0          | 0            | 0            |
| Swimming/surfing                          | 0          | 0            | 0            |
| People on shore                           | 0          | 0            | 0            |
| <b>Total</b>                              | <b>2</b>   | <b>0</b>     | <b>0</b>     |

| <u>Whananaki - Wind<br/>NW-W - Area 2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 2          | 2            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 1          | 0            | 0            |
| Kayaking                                  | 2          | 0            | 0            |
| Fishing off the shore                     | 3          | 0            | 0            |
| Swimming/surfing                          | 30         | 5            | 0            |
| People on shore                           | 30         | 4            | 0            |
| <b>Total</b>                              | <b>68</b>  | <b>11</b>    | <b>0</b>     |

### Whananaki South Southwest Wind – Analysis of Use

| <u>Whananaki - Wind<br/>S-SW - Area 1</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 23         | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 2          | 0            | 0            |
| Kayaking                                  | 4          | 0            | 0            |
| Fishing off the shore                     | 10         | 0            | 0            |
| Swimming/surfing                          | 41         | 0            | 0            |
| People on shore                           | 104        | 0            | 10           |
| <b>Total</b>                              | <b>171</b> | <b>0</b>     | <b>10</b>    |
| <u>Whananaki - Wind<br/>S-SW - Area 3</u> |            |              |              |
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 12         | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 0          | 0            | 0            |
| Fishing off the shore                     | 0          | 0            | 0            |
| Swimming/surfing                          | 0          | 0            | 0            |
| People on shore                           | 0          | 0            | 0            |
| <b>Total</b>                              | <b>2</b>   | <b>0</b>     | <b>0</b>     |

| <u>Whananaki - Wind<br/>S-SW - Area 2</u> |            |              |              |
|---|------------|--------------|--------------|
| <b>Boating Activities</b>                 | <b>0-9</b> | <b>10-14</b> | <b>15-20</b> |
| Boats total                               | 19         | 0            | 0            |
| <b>Shore Activities</b>                   |            |              |              |
| Snorkeling                                | 0          | 0            | 0            |
| Kayaking                                  | 5          | 0            | 0            |
| Fishing off the shore                     | 3          | 0            | 0            |
| Swimming/surfing                          | 56         | 0            | 0            |
| People on shore                           | 166        | 0            | 0            |
| <b>Total</b>                              | <b>239</b> | <b>0</b>     | <b>0</b>     |

## Appendix 3 Mimiwhangata Visitor Accommodation Records

### Accommodation - Visitor Numbers

#### November 2002 – April 2003

|              |              |
|--------------|--------------|
| Lodge        | 1,274        |
| Cottage      | 959          |
| Beach House  | 798          |
| <b>TOTAL</b> | <b>3,031</b> |

*Plus:* Mimiwhangata Open Day 16 March 2003 approx. 150 visitors

### Accommodation - Visitor Numbers

#### May 2003 - October 2003

|              |              |
|--------------|--------------|
| Lodge        | 686          |
| Cottage      | 476          |
| Beach House  | 378          |
| <b>Total</b> | <b>1,540</b> |

*Plus:* Conservation Week Planting 4-10 August 2003 approx. 20 visitors

Note: Source of figures - Mimiwhangata Accommodation Booking File

### Waikahoa campground – Visitor Numbers

Summer Season 2002 2,590 (booked sites)

*Plus:* School Groups 180 (60 children per day x 3 days)

Note: Figures do not include ‘casual’ campers

Source of figures - Waikahoa Bay Campground Bookings and discussion with Ranger

### Day Visitors

Average summer weekend 10 - 20 cars per day (average of 4-5 people/car)

Christmas school holidays 20 - 30 cars per day

Winter weekend 2 - 4 cars per day

Note: Source of figures – discussion with Ranger

### Calculations for Total visitor Use Estimate

| <b>Approximations used</b>                                 |     |
|--|-----|
| Correction factor survey boat count to estimated day total | 1.3 |
| People/boat  | 3   |
| # Days Peak Holiday  | 10  |
| # Days Easter and holiday weekends                         | 13  |
| # Days Summer  | 155 |
| # Days off season  | 178 |
| Avg # of people/car  | 5   |

| <b>Period</b>                                     | <b>Avg # boats/survey</b> | <b>Total # boats</b> | <b>Total # of people</b> |
|---|---------------------------|----------------------|--------------------------|
| Peak Holiday                                      | 21                        | 213                  | 639                      |
| Easter & Holiday weekends                         | 10                        | 127                  | 382                      |
| Summer  | 5                         | 727                  | 2181                     |
| Off Season (estimate only)                        | 2                         | 267                  | 801                      |
| Subtotal  |                           |                      | 4003                     |
| <b>Estimated total # people visiting in boats</b> |                           |                      | <b>5204</b>              |

| <b>Day Visitors (adapted from carpark counts above)</b> | <b>Avg # cars/day</b> | <b>Total # of cars</b> | <b>Total # of people</b> |
|---|-----------------------|------------------------|--------------------------|
| Peak Holiday  | 30                    | 300                    | 1350                     |
| Easter & Holiday weekends                               | 20                    | 260                    | 1170                     |
| Summer  | 15                    | 2325                   | 10463                    |
| Off Season (estimate only)                              | 3                     | 534                    | 2403                     |
| <b>Estimated total # Day visitors in cars</b>           |                       |                        | <b>15386</b>             |

## Appendix 4 Survey Forms and Instructions

### Mimiwhangata Summer Use Survey Reporting Card Instructions:

#### Goal

To assist with identifying and understanding the use of and impact on the Marine Park by visitors, including illegal activities, on its important biodiversity features.

**Trial Dates:** Summer 2002/2003 – Labour Weekend to April 2003

**Method** Observation points have been selected and trialled which offer the opportunity to observe boats in the selected use areas, (see map). A viewing scope is used to assist with determining the type of activity that is being carried out. The survey will be primarily land based, but when the opportunity arises to check counts by boat this will be done and recorded. Notes will be kept on suspected illegal fishing activity, however because of the obscure nature of the regulations in place in the Park this cannot be done in a precise way in the context of this study.

**Total Records to be filled in:** approximately 25-40 Our minimum goal is to do a boat survey at least once a month during a favourable period and a land based survey at least once each weekend and once in 2 weeks on a weekday. Surveys time should be between 8am-10:00am and 3:00pm- 7:00pm

#### What to Do with Filled in Forms:

**Hold in a safe place for collection by V.Kerr.**

#### Reporting Card Instructions:

1. **One** form is **one** Patrol. A Patrol is an assessment of the areas indicated on the survey map with a clear start and finish time. For example, you assess half of the marine reserve one day and then the other half the other day that is **2 patrols**, therefore **2 forms**.
2. For each patrol or each survey fill in the 'General Record Sheet'
3. Fill in 'Boat/Shore Survey Form'

- 3.1. The map attached has been split up into seven ‘areas’
- 3.2. Make sure you move through the areas systematically so you don’t re-count certain activities or people
- 3.3. An ‘area’ is only evaluated **once**
- 3.4. Using the map of the survey areas, indicate for each ‘area’ the **number** of, for example, ‘boats anchored’ in ‘area 1’, ‘area 2’, ‘area 3’ etc.
- 3.5. Blank squares mean that information was not recorded for that activity, yet ‘0’ indicates that, for example, diving did not occur in ‘Area 1’ because the ranger checked that activity for that area. **NOTE: Important to make this distinction.**

**4. Please record any illegal activity in the notes section of the Survey**

**Mimiwhangata Summer Use Survey 2002 -2003**

**General Record Sheet**

Date:

Recorder:

Other personnel involved:

**Weather conditions**

**Survey Number:**

|      |       |        |          |             |         |      |
|------|-------|--------|----------|-------------|---------|------|
| Fine | Sunny | Cloudy | Overcast | Shower<br>s | Drizzle | Rain |
|------|-------|--------|----------|-------------|---------|------|

**Intensity (Amount of Cloud)**

|     |     |     |     |      |
|-----|-----|-----|-----|------|
| 20% | 40% | 60% | 80% | 100% |
|-----|-----|-----|-----|------|

**Wind (direction & knots)**

|      |      |       |       |       |       |     |   |    |
|------|------|-------|-------|-------|-------|-----|---|----|
| Wind | N    | NE    | E     | SE    | S     | SW  | W | NW |
| 0-5  | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30+ |   |    |

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|

**Sea conditions:**

|          |         |         |         |         |         |      |
|----------|---------|---------|---------|---------|---------|------|
| Swell(M) | 0.5-1.0 | 1.0-1.5 | 1.5-2.0 | 2.0-2.5 | 2.5-3.0 | 3.0+ |
|          |         |         |         |         |         |      |

**State of Tide:**

|          |
|----------|
| Tide (m) |
|----------|

Survey Form:

Survey Number:

Date:

Recorder:

Start Patrol:

Finish Patrol:

Total Survey time:

**Blank= not recorded      zero indicates checked but not nil result**

**Boat survey      Land survey (circle one)**

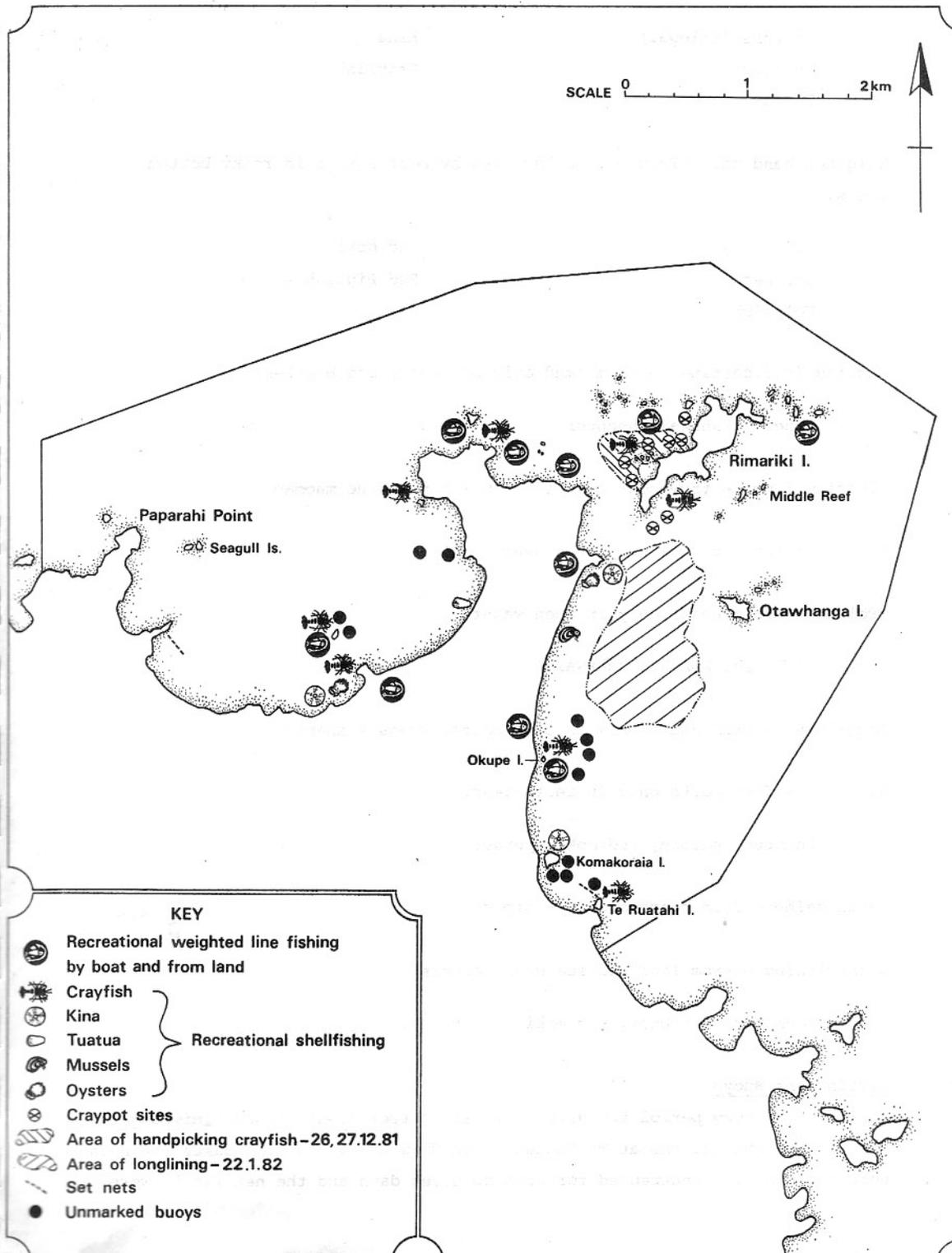
| Area | Time | Boat anchored | Boat moving | Waving | Verbal contact | Written information | Number of people on boat | Fishing Number of people | Fishing Number of | Diving | Snorkelling | Kayaks | Other | Shellfish gathering | Swimming/surfing | Waterskiing | People on the shore | Scientific research | Educational groups | Commercial operators |
|------|------|---------------|-------------|--------|----------------|---------------------|--------------------------|--------------------------|-------------------|--------|-------------|--------|-------|---------------------|------------------|-------------|---------------------|---------------------|--------------------|----------------------|
| 1    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |
| 2    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |
| 3    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |
| 4    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |
| 5    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |
| 6    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |
| 7    |      |               |             |        |                |                     |                          |                          |                   |        |             |        |       |                     |                  |             |                     |                     |                    |                      |

Notes:

# Appendix 5 1982 Environmental Impact Report Diving and Fishing Visitor Use

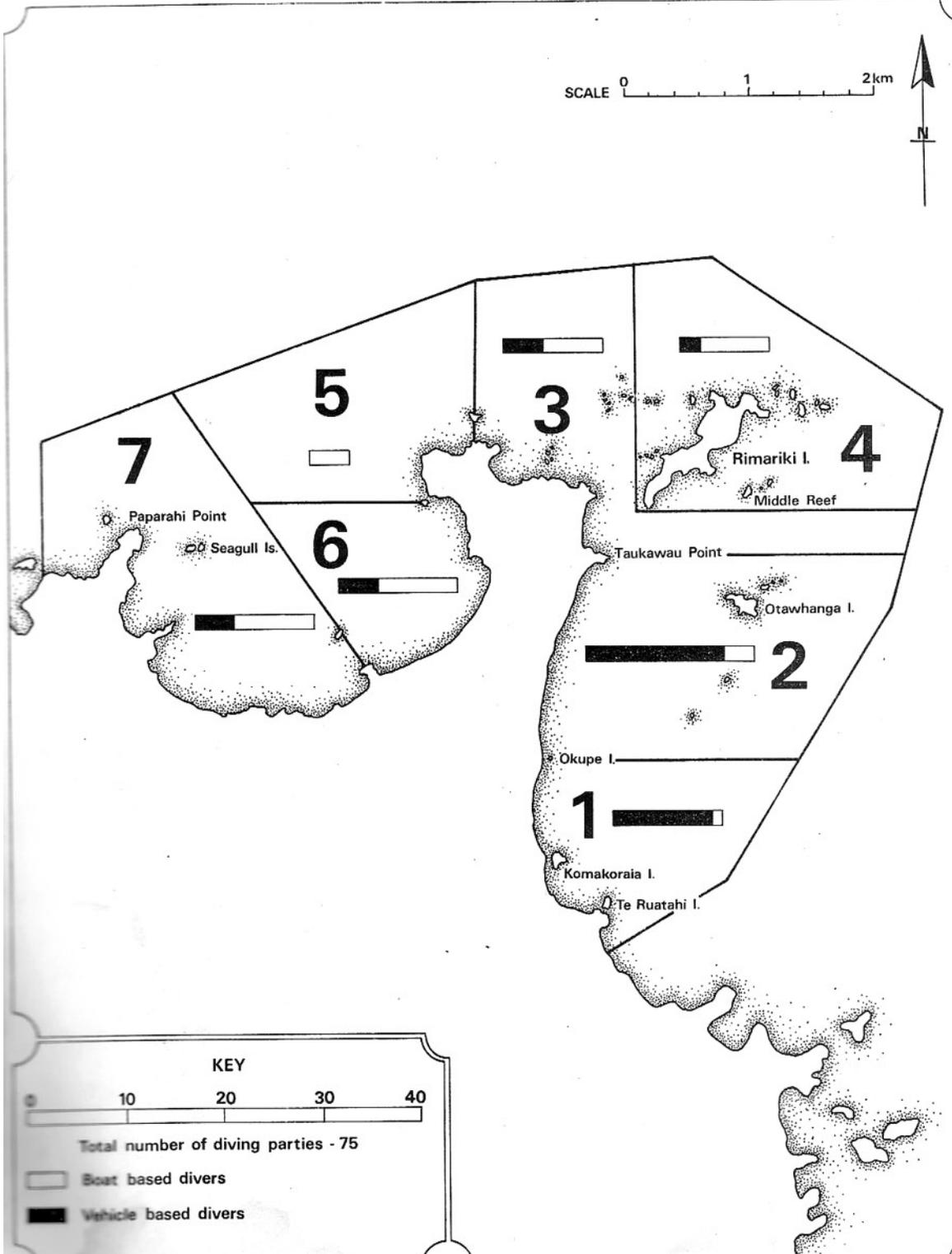
## Mimiwhangata Environmental Impact Report

### 7. Observed Fishing and Diving Activity



# Mimiwhangata Environmental Impact Report

## 8. Proportionate use of areas by divers



## Appendix 6

### Observation of Current (2003-2004) Christmas and New Year Period

On January 10, 2004 the author conducted an interview with the Mimiwhangata resident ranger and his partner (Chris and Nadeane Moretti) to gain some idea of the pattern of use over the current Christmas period.

Chris has carried out an informal survey of use on December 31 2003, which provides a useful comparison point with the 2002-2003 survey. The following observations were made and recorded at approximately 10:30am:

- Weather was fine and very warm with light winds and sea breezes.
- 43 cars were counted in the car park, compared to 33 cars the previous day (December 30<sup>th</sup>).
- 37 boats were recorded in the anchorage at Whale Bay (Area 6). Of these, approximately two thirds were yachts and the remainder large launches.
- In the far northeast corner of Mimiwhangata Beach (Area 6), 6 motor boats were pulled up on the beach and their occupants were using the beach.
- The Paparahi area was also busy, with a combination of small motor boats, larger launches and kayaks on the water. There were 12 boats on anchor in the bay and 6 moving.
- In the general area covering Paparahi, Mimiwhangata Bay and Whale Bay, (Areas 6 & 7), 1 jet ski was operating and up to 4 boats were waterskiing at any one time.
- Total boat count for all of Mimiwhangata Marine Park was estimated at 80-100.

Boat count total for Areas 5, 6 and 7 was 65. This does not include Rimariki Island and the eastern side of the Park. Areas 1-4 on the eastern side were not counted and recorded during this period, but the ranger described them as 'busy'. Considering the very light wind and sea conditions which normally accompany use of the exposed eastern areas of the Park, these areas probably had higher average boat counts than on the equivalent day in 2002. There could therefore have been 80-100 boats in the total Park area during the time the count was taken on December 31st. This reflects a substantial increase on the level of use recorded in the 2002-2003 study, where the maximum boat count for a single day over Christmas was 35.

General comments from the Rangers:

- Pressure on the camping facility at Waikahoa Bay increased this Christmas season, with the campground being full over the Christmas and New Year period. The campground was also full for a longer period before Christmas and after the New Year than it had been before.
- Along with the notable general increase in visitors, the increase in boat use was very noticeable. This season saw the occasional use of Mimiwhangata Bay for waterskiing and jet-skiing, which hasn't been a common use in past years.
- With the frequency of light wind days, an increase in kayaks and small boats has also been noticeable.
- Most day visitors are staying for approximately ½ day and average 4-5 people to each car.
- People consistently comment on the special natural character of Mimiwhangata as the main reason for their visit.