



Water Safety and Auckland's West Coast Fishers – 2009 Report



Preface and Acknowledgements

This report is an evaluation of the 2009 collaborative project between the Auckland Regional Council (ARC), Surf Life Saving Northern Region (SLSN), and Watersafe Auckland Incorporated (WAI).

The *West Coast Rock Fishing Safety Pilot Project* was originally set up in October 2005 in response to a spate of rock- fishing fatalities on Auckland’s rugged west coast in the previous six months (5 fatalities in 4 months). As a consequence of the success of the pilot project in 2006-2008, recommendations to continue the rock fishing safety initiative were acted upon and the safety advisory service was re-established for the summer season of 2009. In addition, a 2 year trial of the installation of angel rings to provide another layer of protection at high risk sites was also initiated. In the 4 years that the safety project has been in place, 4 fishers have drowned.

Our thanks to the New Zealand Chinese Youth Trust for promotion of the project within the Chinese community. Our thanks to Michael Jones for his commitment to promoting water safety within the Pasifika community. The project team is again grateful for the contribution of ARC Cr Sandra Coney and the ARC Parks Committee, whose support over the duration of the project has helped maintain the lifesaving momentum among the collaborative partners and the team working at the ‘rock face’.

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We would also like to thank the Iwi of Te Kawerau a Maki and the Lusk family for allowing some of the Angel Rings to be installed on their land and allowing us access to maintain them.

Finally, a very special vote of thanks to the field officers, James Lee, Jae Hee Ban, Lina Wang, Esther Wang, Terry Seo and Ed Eves. They again were the public face of the project who worked hard in often challenging circumstances with commitment and dedication to the task at hand

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Executive Summary

1. Background

The Auckland Regional Council (ARC), WaterSafe Auckland Inc (WAI) and Surf Life Saving Northern Region (SLSNR) jointly conducted the final year of a 3-year project that built on the rock fishing safety campaign entitled *West Coast Fishing Safety* initiated in the summer of 2006 and developed in 2007 that addressed mounting concerns over the increasing number of fishing fatalities on Auckland's west coast. The purposes of this third phase of the project were threefold: 1) to continue the on-site rock fishing safety education promotion in 2006-07; 2) to determine the effect of the project on Auckland's west coast fishers' safety practices and beliefs and 3) to make recommendations for future rock fishing safety promotion based on the information obtained.

2. Methods

A cross sectional study of fishers at high risk locations on Auckland's west coast was undertaken at the end of the summer safety campaign in April 2009. A sample of 128 fishers voluntarily completed a written questionnaire that sought information on whether they had taken part in the 2006/08 campaign and if they were aware of the follow-up 2009 fishing safety promotion. The structured written questionnaire (see Appendix 1) was anonymous, designed to be completed on site and take a maximum of 10 minutes to complete. The questionnaire contained 14 questions, ten of which had been included in the 2008 survey. Three new questions sought fishers opinion on the recently installed angel rings (flotation aids) at high-risk west coast sites.

3. Key Findings

4.1 Participant demographics:

- As was the case in 2006-2008, the sample consisted predominantly of males (males 84%, females 16%) and most fishers were aged between 20-44 years (59%).
- Proportionally more Asian peoples (68%) and proportionally less European (16%) and Maori (6%) New Zealanders took part in the survey.
- One third (31%) of fishers were of recent residency (< 4 years).
- Almost two thirds (63%) of fishers had visited the site where they were interviewed less than 5 times. For one third (35%) it was their first visit to the site.

4.2 Awareness of the West Coast Fishing Safety Project

- Almost half of fishers (44%) reported that they were aware of the previous West Coast Fishing Safety Project 2006-2008.
- Of those who had taken part, most thought that the campaign had been highly successful/successful (64%), a quarter felt that it had been slightly/not successful (23%) or did not know (13%).
- Less than half of fishers (45%) reported that they were aware of the current 2009 West Coast Fishing Safety Project.
- Of these, one third (33%) identified the fishing advisors as their source of information. Other sources included radio (28%), television (16%), newspapers (11%), magazines (4%), and retail outlets (5%).

4.3. Angel ring installation

- One half (52%) of fishers had seen the new on-site angel rings and, of these, 78% considered them to be *highly successful/successful*
- Almost half (48%) *agreed/strongly agreed* that the angel rings were accompanied with clear instructions, and 44% were *unsure*.
- Most of those who were unsure about the clarity of instructions were recent immigrants for whom English was a second language (75%) which suggest that further multilingual signage may be necessary for the angel rings.
- Almost half of the fishers (45%) *agreed/strongly agreed* that angel rings were the best source of public rescue equipment (PRE) and almost half (47%) were *unsure*.

- Almost half (46%) of the fishers were *unsure* as to whether they were located in the most needed sites, 43% that that they were located in the most needed sites.
- Asian fishers were most likely to be *unsure* as to whether the angel rings were the best source of assistance (68%) or were located at the most needed sites (66%).

4.4. Perceptions of Drowning Risk

- Almost three quarters of fishers (2009, 71%; 2006, 70%) agreed that getting swept off rocks is likely to result in drowning. More believed that drowning was a constant threat to life when fishing from rocks (2009, 61%; 2006, 50%). This would suggest a beneficial shift in fishers' attitudes over the 4 years to one of having a greater appreciation of the risk of drowning
- One third of the 2009 cohort again thought that others were at greater risk than themselves (2009, 31%; 2006, 32%) and fewer considered that they were strong swimmers compared with others (2009, 39%; 2006, 46%).
- Slightly fewer disagreed that lifejackets made fishing safer (2009, 18%; 2006, 20%).
- Fewer fishers still thought that their swimming ability would get them out of trouble (2009, 38%; 2006, 44%).
- Fishers of recent residency were least likely to agree that their local knowledge (25%), their experience of the sea (30%) or their swimming ability (25%) would reduce their risk of drowning

4.5. Water Safety Behaviours of Fishers

- The most noticeable positive change in self-reported behaviour relates to the use of lifejackets or buoyancy aids. Fewer fishers reported never wearing a lifejacket/buoyancy aid (2009, 34%; 2006, 72%) and more reporting wearing them often (2009, 26%; 2006, 4%).
- However, it is still a concern that one third of fishers (34%) report never wearing any lifejacket/flotation aid.
- One third (34%) of fishers in 2009 reported sometimes/often consuming alcohol when fishing. Further promotional work on the folly of mixing alcohol with fishing from rocks would appear prudent.

- The contributing factors that may explain this persistence include the predominance of males among fishers (2009, 84%), the transience of the fisher population (2009, less than half [46%] had taken part in previous surveys), and the culturally and linguistically diverse population (2009, more than half [52%] of the survey respondents had completed the non-English version of the questionnaire).
- In addition, one third of the respondents were also first time users of the site where interviewed (2009, 33%, 2006, 36%) and thus may not have seen the recently installed safety signage or angel rings.
- Finally, many of the respondents in each year of the study had lived for less than 4 years in New Zealand (2009, 32%)

4.6 Self-reported Changes in Fishers' Knowledge, Attitudes and Behaviours in the Previous Year

- More than half of fishers (52%) considered that their safety knowledge had improved in the past year
- Almost half (45%) considered that their safety attitudes had improved, though some (12%) considered that their attitude had not improved.
- As was the case in 2006, approximately half of the fishers in 2009 thought that their safety behaviour when fishing had improved (2009, 48%; 2007, 53%).
- Fewer participants in 2009 compared with 2006 thought that the safety behaviour of their mates (2009, 44%; 2007, 53%) or other fishers (2009, 45%; 2007, 55%) had improved.

5. Recommendations

In light of these findings, several recommendations are made. These are:

1. To the Auckland Regional Council (ARC):

- Given the transient nature of the rock fishing population and the persistence of risky attitudes and behaviours as reported, retain the services of the safety advisors for a 2010 summer campaign.
- Given the ethnic diversity of the rock fishing population, retain the multilingual advisory service and look to ways of presenting safety information in multiple languages
- Maintain a regional leadership role in the collaborative venture by allocating funds to support future fishing safety promotion, including the installation of angel rings and safety signage at high risk sites thereby affirming ARC's commitment to its mandate to maintain harbour and coastal safety

2. To WaterSafe Auckland, Surf Life Saving Northern and other safety organizations:

- Consider ways of addressing the concerns highlighted in this Report by reinforcing and extending the current provision of public safety information and resources.
- Commit resources and personnel to the ongoing work collaboratively with all partners to promote best practice for West Coast fishing safety education beyond 2009.
- Disseminate the findings of the study to member organizations, national water safety organisations, community organisations (especially migrant community organisations), recreational fishing groups and businesses and the public at large.

3. To recreational fishers, fishing clubs and fishing organizations:

- Learn and implement the fishing safety messages promoted by the West Coast Fishing Safety Project.
- Encourage others in the rock fishing fraternity to adopt safe practices - especially the wearing of inflatable lifejackets when fishing at Auckland's high-risk west coast locations.
- Support the work of frontline fishing advisors and lifeguards in their efforts to make rock fishing a safe and happy experience without undue risk for all concerned.

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1. Background

Rock fishing is one of New Zealand's most dangerous pastimes. In the 16 years from 1980-1995, 63 people lost their lives while fishing off New Zealand's rugged coastline (Davies, 1996). More recently, 11 fatalities have occurred on Auckland's west coast from 1999-2005 prompting concerns both nationally and regionally for the targeted promotion of rock fishing safety advice (Moran, 2006). In response to these concerns, The Auckland Regional Council (ARC), WaterSafe Auckland Inc (WAI) and Surf Life Saving Northern Region (SLSNR) jointly conducted a rock fishing safety campaign entitled *West Coast Fishing Safety* in the summer of 2006 aimed at reducing the number of fishing fatalities on Auckland's rugged west coast.

The purpose of the campaign was twofold. Firstly, the campaign piloted a fishing safety education programme that would help fishers identify and manage the risks associated with fishing on Auckland's west coast. Secondly, the organisers conducted a survey of fishers towards the end of the summer campaign in order to enhance understanding of their fishing safety knowledge, beliefs and behaviours. The project has been unique in that the fishing safety education programme was conducted on-site at high-risk fishing locations with supplementary promotion of safety messages via the relevant media outlets of television and radio, newspapers and magazines as well as through retail outlets and community organisations.

Furthermore, the programme is believed to be the first of its kind to utilize an 'action research' model that initially identified fishers safety beliefs and behaviours and then integrated the findings of the summative surveys (in 2006) into the subsequent prevention programme in the following years (in 2007-08) before again evaluating responses and again responding to them in the final year of the project (in 2008). For example, having recognized the gap between what fishers think and what they do with regards to the wearing of buoyancy aids at dangerous locations in the first year of the programme, subsequent promotions focused on the wearing of inflatable lifejackets and offered incentives to fishers to purchase lifejackets at reduced cost. In addition, in the final year of the project, fishers were asked their opinion on the installment of angel rings and safety signage (Royal National Lifeboat Institute, 2007) at dangerous west coast fishing locations and their overwhelming support of such an intervention constitutes part of the recommendations of this final report.

Details of the first two years of the project were published in reports entitled *Water Safety and Auckland's West Coast Rock Fishers* (Moran, 2006) and again the following year in a report entitled *Water Safety and Auckland's West Coast Rock Fishers: Follow-up study* (Moran, 2007a). In addition, the results of the initial 2006 study have been reported internationally at the *World Water Safety Conference* in Oporto, Portugal (Moran 2007b) and in the research literature via the *International Journal of Aquatic Research and Education* (Moran, 2008). Most recently, the Project was presented as an example of best practice using a cyclic 'action research' model at the Australian Injury Prevention Conference in Melbourne (Moran, 2009)

2. Purpose and Outcomes of the Study

2.1 Purpose

The purposes of this fourth phase of the project were threefold:

- 1) To continue the on-site rock fishing safety education promotion initiated in 2006
- 2) To determine the effect of the project on Auckland's west coast fishers' safety practices and beliefs, and
- 3) To make recommendations for future rock fishing safety promotion based on the information obtained.

2.2 Outcomes

The specific outcomes of this report are:

1. Ascertain the effect of on-site rock fishing safety promotion via the deployment of field officers during the summer months of 2009,
2. Survey fishers to ascertain whether they had taken part in the previous surveys and, if so, what effect that safety campaign had had on their current understanding and practice of water safety when fishing from rocks,
3. Survey fishers opinions on the value of safety signage and angel ring floatation devices currently being piloted at high risk west coast fishing locations,
4. Compare and contrast:
 - a. fishers' perception of drowning risk,
 - b. their safety behaviour and
 - c. self-reported changes in knowledge, attitudes and behaviours, and,
5. Make recommendations and suggest future strategies that enhance fishers' understanding and practice of safety when fishing from rocks on Auckland's west coast.

3. Methods

3.1 Preliminary Organisation

A final report (Moran, 2008) on the third year of the *West Coast Fishing Safety Project* was presented to representatives of the collaborating partners from WaterSafe Auckland Inc [WAI], the Auckland Regional Council [ARC] and Surf Life Saving Northern [SLSN], as well as to other water safety organizations, in July 2008. Among its recommendations, the following were highlighted as necessary in order to maintain the momentum of the first three years of drowning prevention programme:

- Retain collaborative network between the ARC, SLSN, and WAI.
- Continuation of West Coast Fishing Safety Advisory Service
- Continuation of Fisher Safety Survey: Knowledge-Attitudes -Behaviour
- Pilot study of Angel Rings at high-risk West Coast sites to ascertain their impact and cost in terms of installation, monitoring, maintenance
- Continued high profile promotion of fishing safety in the community especially males, new migrants, Maori and Pasifika

Preliminary discussion among the Project Team focussed on the availability of public rescue equipment (PRE). Information was sought from the Royal National Lifeboat Institute who had recently completed a feasibility study on public rescue equipment (RNLI, 2007) as well as discussion with their Beach Safety Manager (personal communication, Steve Wills, RNLI, October 23rd 2009) and with key personnel from Australia at the Australian Water Safety Conference (personal communication, Stan Konstantaras, May, 5th 2008)

3.2 Procedures

As was the case in 2008, the field officers (n = 6) were trained to conduct all aspects of the fieldwork process from education to data collection and management. The participants in the survey were all those who were either fishing from the chosen sites or in transit to and from the site. Rock fishing was again defined as not only fishing with rod and reel but also included activities that used other devices such as baskets or hand lines as well as those gathering shellfish from the rocks. Potential participants were approached, the purpose of the Project explained and a request to voluntarily participate in an anonymous written survey was made to all adult fishers over 16 years of age.

Given the large proportion of fishers of Asian origins previously reported (Moran, 2008), the questionnaire was again produced in English, Mandarin and Korean. To further assist non-English speaking Chinese/Taiwanese fishers, four of the field officers were fluent Chinese speakers.

The water safety advice and survey data gathering took place during weekends between February and April in the summer of 2009 and included several peak holiday weekends. The sample did not therefore include fishers who used the sites during the weekdays or at times outside of 'peak' hours (such as night fishing) or fishers who frequented other high-risk west coast locations.

3.3 Measures

The structured written questionnaire (see Appendix 1) was anonymous, designed to be completed on site and take a maximum of 10 minutes to complete. The questionnaire contained 14 questions, eleven of which had been included in the 2008 survey. Five questions sought socio-demographic information on gender, length of residency, age, ethnicity, and their previous rock fishing activity.

Two questions on at-risk fishing behaviours and perceptions of drowning risk from the earlier surveys were again included in order to compare fishing safety behaviours and attitudes. The question on behaviours asked fishers to self-report on six behaviours (for example, *when rock fishing, do you wear a lifejacket/buoyancy aid*) using four response categories *never, sometimes, often* and *always*. The question on attitudes consisted of 12 statements and required fishers to state whether they *strongly agreed, agreed, were unsure, disagreed, or strongly disagreed* with the statement. A five-part question asked fishers to estimate whether their knowledge, attitudes and behaviours (as well as that of fishing mates and other fishers) had improved in the intervening year by using three response categories - *agree, disagree* or *don't know*.

Three new questions seeking information on whether fishers had seen new angel rings being piloted in five high risk locations and what they thought about them using four response categories ranging from *essential* to *waste of money*. Fishers were also asked to suggest other locations they would like to see angel rings on the west coast. They were also asked to comment on the clarity of instruction for their use, whether they were the best source of assistance and whether they were located at the most suitable sites, using five response categories ranging from *strongly agree* to *strongly disagree*.

3.4 Data analysis

Data from the completed questionnaires were entered into Microsoft Excel 2003 for statistical analysis using SPSS Version 16.0 in Windows. Descriptive statistics such as means and proportions were used to describe the baseline characteristics of the population. Frequency tables were generated for all questions and, unless otherwise stated, percentages are expressed in terms of the number of respondents to each survey question within groups.

Data were analysed using a number of socio-demographic variables including gender, age length of residency and ethnicity. Mann Whitney *U* tests and Chi-square analyses were used to determine significant differences between dependent variables (such as behaviour and attitudes) and independent variables (such as gender and ethnicity).

4. Key Findings

The results of the 2009 survey are presented in six related sections:

4.1 Demographics of Fishers

All fishers at the sites chosen to survey were invited to take part in the survey but several declined. A total of 128 questionnaires were returned from participants in rock fishing activity at popular locations on the west coast of Auckland at the end of the summer season of 2009. Analysis of respondents' age, gender, length of residency, and ethnicity indicated that the demographic structure of the sample reflected previous findings (Moran, 2006, 2007, 2008).

Table 1. *Demographic Characteristics of Fishers*

Demographic Characteristic		<i>n</i>	%	Total
Gender	Male	107	83.6	128 (100%)
	Female	21	16.4	
Ethnicity	European	21	16.4	128 (100%)
	Maori	8	6.2	
	Pasifika	9	7.0	
	Asian	87	70.0	
	Other	3	2.3	
Age group	15-19 years	12	9.4	128 (100%)
	20-29 years	32	25.0	
	30-44 years	43	33.6	
	45-64 years	34	26.6	
	65+ years	7	5.5	
Length of residency	< 1 year	10	7.8	128 (100%)
	1-4 years	30	23.4	
	5-9 years	38	29.7	
	>10 years	20	15.6	
	All my life	30	23.4	

As was the case in 2006-2008, the sample population was predominantly male (84% male; 16% female) and most were aged between 20-44 years (59%; $n = 75$). In terms of ethnicity, proportionally more Asian peoples (70%; $n = 87$) were included in the study whereas proportionally less European (16%; $n = 21$) and Maori (6%; $n = 8$) New Zealanders were included. One third (31%; $n = 40$) of those surveyed were of recent residency (< 4 years). Further analysis of the ethnicity of respondents revealed a diverse range of backgrounds among Auckland's west coast rock fishers. Those who were broadly categorised as of Asian ethnicity, self-identified with six Asian region countries (see Table 2). The English language version of the 2008 survey was completed by almost half of the fishers (48%; $n = 62$), 32 (25%) fishers completed the Mandarin version, and 34 (27%) fishers opted to complete the Korean language version of the survey.

Table 2. *Self-identified Ethnicity of Fishers*

Ethnic group	<i>n</i>	%
European	21	16.4
Maori	8	6.2
Pasifika	9	7.0
Chinese/Taiwanese	43	33.6
Korean	40	31.2
Indian	4	3.1
Philipino	1	0.8
African/South African	1	0.8
Other European	1	0.8
Total	128	100

Fishers were asked to describe how often they had fished at the location where they completed the questionnaire (see survey question 8, Appendix 1). Table 2 shows that, as was the case in previous surveys, many of the fishers were not frequent visitors to the site, with one third (35%; $n = 45$) reporting that this was their first visit and a further one quarter (28%; $n = 36$) reporting that they had visited the site 2-5 times. Cumulatively, almost two thirds (63%; $n = 81$) had visited the site less than five times. Collectively, only one fifth (20%; $n = 26$) of the fishers had visited the site more than 10 times, with one tenth (9%; $n = 12$) having visited the site more than 20 times.

Table 3. *Fishing Frequency at Site where Interviewed and Other Places Fished*

How often have you fished at this site?	<i>n</i>	%	Cumulative %
First time at site	45	35.2	35.2
2-5 times	36	28.1	63.3
6-10 times	21	16.4	79.7
11-20 times	14	10.9	90.6
>20 times	12	9.4	100.0
Where else have you fished?	<i>n</i>		
Other Auckland west coast sites	18		
Northland	6		
Auckland Harbours (inc. Manukau, Waitemata)	14		
Inner Hauraki Gulf (inc. Whangaparoa, Maraetai etc)	8		
Outer Hauraki Gulf (inc. Coromandel, Great Barrier Island)	4		
Other New Zealand sites	2		

4.2 Awareness of West Coast Rock Fishing Safety Project

More than half of fishers (56%; $n = 72$) reported that they had not taken part in the 2006-2008 rock fishing safety surveys (see survey question 1, Appendix1). As was the case in previous studies, it would appear that the fishing population of the west coast is quite transient which suggests that educating them on water safety when fishing from high risk sites will need to be an ongoing process.

Table 4. *Participation in, and estimation of success of, the previous Fishing Safety Projects*

Did you take part in the previous rock fishing projects?	<i>n</i>	%
Yes	56	43.8
No	72	56.2
Total	128	100.0
If Yes, how successful do you think it was?	<i>n</i>	%
Highly successful	13	23.2
Successful	23	41.1
Slightly successful	11	19.6
Not successful	2	3.6
Don't know	7	12.5
Total	56	100.0

Table 4 shows that, of the 56 fishers who had taken part in the previous surveys, two thirds (64%; $n = 36$) considered that the campaign had been *highly successful/successful* compared with less than one quarter who either considered it *slightly/not successful* (23%; $n = 13$) or who *did not know* (13%; $n = 7$)

Fishers were also asked whether they were aware of the current safety project (see survey question 2, Appendix1). Table 5 shows that less than half of the fishers (45%; $n = 57$) reported that they were aware of the current project. Several possibilities may help explain why relatively few fishers were aware of the campaign. Firstly, as was reported in previous surveys (Moran, 2006, 2007, 2008), many of the participants were relatively infrequent visitors to the sites where they were interviewed (see Table 3, 63% had visited the site <5 times). Secondly, many of the participants were of recent residency (see Table 1, 31% had been resident <4 years). Thirdly, most fishers (52%) completed the survey in a language other than English which may suggest that targeted promotion of the campaign may not have reached those of culturally and linguistically diverse background, a problem also reported in water safety campaigns in Australia (Mitchell & Haddrill, 2003). Fourthly, the remoteness of the sites and the logistic difficulties of providing onsite information to a transient population as identified above makes the promotion of the

campaign very problematic. Finally, given the cultural and linguistic diversity of the rock fishing community, the use of non-traditional avenues of communication need to be further explored.

When those who were aware of the current project were asked how they had found out about the project, one third of the fishers (33%; $n = 19$) identified the fishing safety advisors as their source of information. Other sources of information, in descending order of frequency, included radio (28%), television (15%), newspapers (11%), retail outlets (5%), magazines (3%) and friends (2%). As was the case in the previous year, most fishers (34%; $n = 48$) had heard of the current safety promotion through the advisors, which again suggests the benefit of engaging staff for on-site safety promotion to a group that is characteristically diverse and who may be difficult to reach through traditional channels such as television, radio and magazines as indicated by the lesser recall of the current project via these channels (see Table 5).

Table 5. *Are you aware of, and how did you find out about, the current (2009) project?*

Are you aware of the current (2009) project?	<i>n</i>	%
Yes	57	44.5
No	71	55.5
Total	128	100.0
If Yes, how did you find out about the current project?*	<i>n</i>	%
Fishing safety advisors	19	33.3
Radio	16	28.1
Television	9	15.8
Newspapers	6	10.5
Retail outlets	3	5.3
Magazines	2	3.5
Other sources (friends)	2	3.5
Total	57	100.0

4.3 The Installation of Angel rings

Fishers were asked whether they had seen the new angel rings recently installed and being trialled on dangerous fishing sites (see survey question 9, Appendix 1) and asked their opinion of how effective they considered them to be. One half of the respondents (52%; $n = 67$) reported having seen the new angel rings and, of these, 78% ($n = 52$) considered them to be *highly successful/successful*, 17% ($n = 11$) considered them to be *slightly/not successful* and 3% ($n = 4$) reported that they *did not know*.

Table 6. *Awareness and success of the newly-installed angel rings*

Have you seen the newly installed angel rings?	<i>n</i>	%
Yes	67	52.3
No	61	47.7
Total	128	100.0
If YES, how effective do you think they are?*	<i>n</i>	%
Highly successful	34	50.7
Successful	18	26.9
Slightly successful	6	9.0
Not successful	5	7.5
Don't know	4	6.0
Total	67	100.0

Fishers were also asked to comment on the clarity of the instruction for their use, whether they were considered to be the best source of assistance and whether they were located in the most suitable sites (see question 10, Appendix 2). Table 7 shows that almost half (48%; $n = 62$) *agreed/strongly agreed* that the angel rings were accompanied with clear instructions, 7% *disagreed/strongly disagreed* and 44% ($n = 56$) were *unsure*. Most of those who were unsure about the clarity of instructions were recent immigrants for whom English was a second language (75%; $n = 42$) which suggest that further multilingual signage may be necessary for the angel rings.

In addition, almost half of the fishers (45%; $n = 58$) *agreed/strongly agreed* that angel rings were the best source of public rescue equipment (PRE), 10% thought they were not the best source of assistance, and almost half (47%; $n = 60$) were *unsure*. Almost half (46%; $n = 59$) of the fishers were *unsure* as to whether they were located in the most needed sites, 43% ($n = 55$) that that they were located in the most needed sites.

Table 7. Fisher opinions on the newly-installed angel rings

Do you think that-	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
- the angel rings have clear instructions	62	48.4	56	43.8	10	7.8
- the angel rings are the best source of assistance	58	45.3	60	46.9	10	7.8
- the angel rings are located at the most suitable sites	55	43.0	59	46.1	14	10.9

Significant differences were found when awareness of the angel rings was analysed by ethnicity ($\chi^2(6) = 18.301, p = .006$) and length of residency ($\chi^2(4) = 21.299, p = < 0.001$). Most European (81%), Maori fishers (88%), residents with more than 10 years residency (70%), and fishers over the age of 30 years (58%, 54%) reported having seen the newly installed angel rings. More Asian and Pasifika fishers, those of recent residency (< 4 years) and younger fishers (< 30 years) were likely not to have seen the newly-installed angel rings (see Table 4.3.a, Appendix 2).

Compared with other ethnic groups, fewer Asian fishers agreed that the rings had clear instructions (45%), were the best source of equipment (45%), or were situated in the best locations (44%) (see Table 4.3b, Appendix 2). Asian fishers were also most likely to be *unsure* as to whether the angel rings were the best source of assistance (68%; $n = 41$) or were located at the most needed sites (66%; $n = 39$).



Illustration 1.

The angel ring installed on Flat Rock, Muriwai being held by representatives of the collaborating bodies - the Auckland Regional Council (ARC), Watersafe Auckland Inc (WAI), and Surf Life Saving Northern (SLSN)

No significant differences was found among opinions about the angel rings when analysed by age group ($\chi^2(4) = 3.669, p = .453$) although slightly more fishers over the age of 30 years thought the rings had clear instructions and were the best form of assistance (see Table 4.3c, Appendix 2). Most fishers of recent residency (<4 years) were *unsure* of the clarity of instructions (65%), or whether the angel rings were the best source of equipment (58%), or that the angel rings were located in the best positions (63%) (see Table 4.3d, Appendix 2).

The lack of positive opinion (that is, where less than half agreed/strongly agreed that rings had clear instructions, or were the best form of assistance or were located in the most suitable sites) among Asian fishers, younger fishers (<30 years of age), and those of recent residency (<4 years) is a cause of concern and suggest that further advertising and public messaging may be necessary to inform these particular groups.

On 31 March 2009, an unconscious Asian fisherman was plucked from the surf, 50m from Flat Rock, Muriwai and resuscitated by lifeguards. The victim was airlifted to hospital, placed in intensive care, and released after 2 days. Another fisher was also rescued during the same incident. Neither fisher was wearing a personal flotation device (PFD), they were not aware of the angel ring, and bystanders had not phoned the emergency services or contacted the nearby surf patrol at the time of the incident. The patrol involved in the rescue subsequently won the SLSNZ BP Rescue of the Year Award for their outstanding efforts.

4.4 Fisher perceptions of drowning risk

Fishers were asked to respond to a series of 12 statements relating to their perception of the risk of drowning associated with fishing from rocks (see survey question 12, Appendix 1). The question consisted of a 5-point scale that included the categories *strongly agree*, *agree*, *unsure*, *disagree* and *strongly disagree*. For ease of interpretation, the *strongly agree/agree* and *disagree/strongly disagree* responses were aggregated and subdivided into four separate tables. In addition, comparable data from the 2006 survey have been included and are reported in italics and parentheses in Tables 8-11 below.

Table 8 shows responses to statements 1-3 (Question 11) that relate to fisher perceptions of the severity of the risk of drowning when fishing from rocks (see Appendix 1 – survey questionnaire). Little change in the perception of severity of risk was evident in response to the first statement, with almost three quarters of fishers (2009, 71%; 2006, 70%) again agreeing that getting swept off rocks is likely to result in drowning. Fewer fishers believed that rock fishing was no more risky than other aquatic activities (2009, 38%; 2006, 41%) and more believed that drowning was a constant threat to life when fishing from rocks (2009, 61%; 2006, 50%). This would suggest a beneficial shift in fishers' attitudes over the 4 years to one of having a greater appreciation of the risk of drowning associated with fishing from rocks off Auckland's west coast.

Table 8. *Fisher Perceptions of the Severity of Risk of Drowning, 2006 and 2009*

Do you think that-	Year	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1. Getting swept off the rocks is likely to result in my drowning	2009	91	71.1	20	15.6	17	13.3
	<i>(2006)</i>	<i>(176)</i>	<i>(70.2)</i>	<i>(39)</i>	<i>(15.6)</i>	<i>(31)</i>	<i>(12.4)</i>
2. Rock fishing is no more risky than other water activities	2009	49	38.3	22	17.2	56	43.8
	<i>(2006)</i>	<i>(103)</i>	<i>(41.2)</i>	<i>(46)</i>	<i>(18.4)</i>	<i>(97)</i>	<i>(38.8)</i>
3. Drowning is a constant threat to my life when rock fishing	2009	78	60.9	24	18.8	26	20.3
	<i>(2006)</i>	<i>(126)</i>	<i>(50.0)</i>	<i>(45)</i>	<i>(18.0)</i>	<i>(75)</i>	<i>(30.0)</i>

When analysed by ethnicity, proportionally more European and Asian fishers than other ethnic groups thought it likely that they would drown if swept off rocks (71 and 70% respectively) Asian fishers were most likely to disagree that rock fishing was no more risky than other aquatic activities (46%) (See Table 4.3b, Appendix 2). When analysed by age group, the older age groups were more likely to perceive lesser risk of drowning than the 16-29 year age group. For example, more considered that getting swept off the rocks was likely to result in drowning (75% compared with 67 and 71% for each of the older age groups) (see Table 4.3c, Appendix 2). Similar differences were evident when perceptions of the severity of the risk were analysed by length of

residency with those of most recent residency likely to consider greater likelihood of drowning if swept off rocks (see Table 4.3d, Appendix 2).

Table 9 shows responses to statements 4-6 (Question 11) relating to fisher perceptions of their vulnerability to drowning when fishing from rocks (see Appendix 1 – survey questionnaire). Little change in the perception of vulnerability to drowning was evident in response to the three statements with most fishers disagreeing that they were not concerned about the risk of drowning (2009, 62%; 2006, 61%). As was the case in 2006, one third of the 2009 cohort again thought that others were at greater risk of drowning than themselves (2009, 31%; 2006, 32%), although more now disagreed with the statement (2009, 43%; 2006, 36%). Table 7 also shows fewer fishers considered that they were strong swimmers compared with others (2009, 39%; 2006, 46%). Conversely, considerably more fishers disagreed that they were strong swimmers in comparison with others (2009, 45%; 2006, 33%). These slight shifts in attitudes suggest an enhanced perception of vulnerability which, in turn, may reflect a more realistic appraisal of the magnitude of the risk of drowning when fishing.

Table 9. Fisher Perceptions of their Vulnerability to Drowning, 2006 and 2009

Do you think that-	Year	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
		n	%	n	%	n	%
4. I am not concerned about the risks of rock fishing	2009	34	26.6	15	11.7	79	61.7
	(2006)	(68)	(27.2)	(26)	(10.4)	(152)	(60.5)
5. Others rock fishers are at greater risk of drowning than me	2009	40	31.2	33	25.8	55	43.0
	(2006)	(81)	(32.4)	76	(30.4)	(89)	(35.6)
6. I am a strong swimmer compared with most other people	2009	50	39.1	21	16.4	57	44.5
	(2006)	(116)	(46.4)	48	(19.2)	82	(32.8)

When perceptions of vulnerability to drowning were analysed by ethnicity, age group and length of residency, fewer Asian fishers (31%) and recent residents (25%) considered themselves to be strong swimmers. More young fishers under 30 years of age considered themselves to be strong swimmers when compared with the 30-44 and over 45 years older age groups (48% v 39% and 29%). Fishers of recent residency (<4 years) and of Asian origin disagreed that other fishers were at greater risk of drowning than themselves (See Tables 4.4b, 4.4c and 4.4d, Appendix 2).

Table 10 shows responses to statements 7-9 (Question 10) relating to fisher perceptions of the efficacy of preventive action in reducing drowning risk when fishing from rocks (see Appendix 1 – survey questionnaire). As was the case in 2006, most fishers taking part in the 2009 survey responded positively to all three statements of the efficacy of preventive actions to reduce drowning risk (See Table 8). However, responses to perceptions of the efficacy of avoiding fishing in bad conditions (2009, 76%; 2006, 86%) and not turning your back to the sea (2009,

70%; 2006, 92%) were not as safety conscious. Slightly fewer disagreed that lifejackets made fishing safer (2009, 18%; 2006, 20%). Surprisingly, a smaller proportion of fishers agreed that always wearing a lifejacket made fishing safer (2009, 63%; 2006, 71%) which is, as was the case in 2008, at odds with the more frequent use of lifejackets reported in Section 4.4 and observations by the Rock Fishing Advisors and lifeguards at the high risk sites throughout the summer period. This slightly poorer response to the efficacy of preventive actions may be explained by several compounding influences including the lack of awareness of the fishing safety project previously reported, the ‘newness’ of the 2009 cohort to fishing on the west coast, their recent residency, and cultural and linguistic diversity. The persistence of such potentially dangerous attitudes suggests that getting the message across to this sub-group continues to present a challenge to water safety advocates.

Table 10. *Fisher Perceptions of the Efficacy of Preventive Action in Reducing Drowning Risk, 2006 and 2009*

Do you think that-	Year	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
		n	%	n	%	n	%
7. I avoid fishing in bad conditions to reduce the risk of drowning	2009	97	75.8	20	15.6	11	8.6
	(2006)	(219)	(85.8)	(10)	4.0	(17)	6.8
8. Always wearing a lifejacket makes fishing a lot safer	2009	80	62.5	25	19.5	23	18.0
	(2006)	(177)	(70.6)	(20)	(8.0)	(49)	(19.6)
9. Turning my back to the waves when rock fishing is very dangerous	2009	90	70.3	26	20.3	12	9.4
	(2006)	(229)	(91.8)	(14)	(5.6)	(3)	(1.2)

When perceptions of the efficacy of preventive action in reducing drowning risk were analysed by ethnicity, age group and length of residency, fewer fishers of European origin, younger fishers (<30 years), and those who had lived in New Zealand less than 4 years thought that always wearing a lifejacket made fishing a lot safer (See Tables 4.4b, 4.4c and 4.4d, Appendix 2).

Table 11 shows responses to statements 10-12 (Question 10) relating to fisher perceptions of the self-efficacy of their preventive behaviours in reducing drowning risk when fishing from rocks (see Appendix 1 – survey questionnaire). As can be seen in Table 9, responses from the participants in 2009 to each of these three statements were similar to those of the fisher who took part in the 2006 survey.

Table 11. Fisher Perceptions of Self-efficacy of Preventive Behaviours in Reducing Drowning Risk, 2006 and 2009

Do you think that -	Year	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
10. My local knowledge of this site means I'm unlikely to get caught out	2009	49	38.3	32	25.0	48	37.5
	(2006)	(127)	(50.4)	(46)	(18.4)	(73)	(29.2)
11. My experience of the sea will keep me safe when rock fishing	2009	58	45.3	23	18.0	47	36.7
	(2006)	(144)	(57.8)	(51)	(20.4)	(51)	(20.4)
12. My swimming ability means I can get myself out of trouble	2009	49	38.3	34	26.6	45	35.1
	(2006)	(110)	(44.0)	(56)	(22.4)	(80)	(32.0)

Fewer fishers in the most recent survey felt that their local knowledge of the site where interviewed meant that they were unlikely to get into difficulties (2009, 38%; 2006, 50%) which, given the relatively infrequent visits to the site where they were interviewed, would suggest a rather more realistic estimation of their ability to read the conditions and estimate the risks of specific sites. In addition, fewer fishers considered that their knowledge of the sea would help keep them safe (2009, 45%; 2006, 58%) and fewer thought that their swimming ability would get them out of trouble (2009, 38%; 2006, 44%). Given the relative infrequencies of site visits (see Table 3) and the recency of residency (see Table 1) of many of the fishers previously reported, it would appear that more fishers have a realistic estimation of their ability to cope with the risk of fishing at high risk sites. Whether this translates into a permanent shift in attitude that may result in greater safety behaviour needs further study.

When perceptions of the self-efficacy of their preventive behaviours in reducing drowning risk when fishing from rocks were analysed by ethnicity, age group and length of residency, Maori fishers (76%) were most likely and Asian fishers (35%) least likely to consider that their experience of the sea would keep them safe and that their swimming ability would get them out of trouble (Maori, 88%, Asian 26%) (See Table 4.4b, Appendix 2). Young fishers in the 16-29 year age group were less likely than 30-44 year and 45 years+ age groups to agree that their experience would keep them safe (34% compared with 51% for both groups (See Table 4.4c, Appendix 2). Not surprisingly, fishers with most recent residency were least likely to agree that their local knowledge (25%), their experience of the sea (30%) or their swimming ability (25%) would reduce their risk of drowning (see Table 4.4d, Appendix 2).

4.5 Water Safety Behaviours of Fishers

Fishers were asked to report previous water safety behaviours (see survey question 13, Appendix 1) using a four-point frequency scale including *never*, *sometimes*, *often* and *always* in order to describe whether they had performed at-risk behaviours when fishing from rocks. Because there were relatively few *always* responses the latter two responses were aggregated and are reported in the tables and text as *often* (see Table 12).

Table 12 shows the self-reported fishing behaviours in 2009 compared with 2006 results (italicized and in parentheses). As was the case in 2008, the most noticeable positive change in self-reported behaviour relates to the use of lifejackets or buoyancy aids. Fewer fishers reported *never* wearing a lifejacket/buoyancy aid (2009, 34%; 2006, 72%) and more reporting wearing them *sometimes* (2009, 40%; 2006, 23%) or *often* (2009, 26%; 2006, 4%). This positive change in self-reported behaviour was again reinforced by anecdotal evidence from fishing advisors and lifeguards of greater use of buoyancy aids at the end of the 2009 summer season.

Table 12. Fisher Self-reported Water Safety Behaviours, 2006 and 2009

When rock fishing, do you -	Year	Never		Sometimes		Often	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Wear a lifejacket or other flotation device	2009	44	34.4	51	39.8	33	25.8
	(2006)	(180)	(72.0)	(58)	(23.2)	(11)	(4.4)
Turn your back to the sea when fishing	2009	61	47.7	48	37.5	19	14.9
	(2006)	(146)	(58.4)	(90)	(36.0)	(13)	(5.2)
Wear gumboots or waders	2009	43	33.6	58	45.3	27	22.1
	(2006)	(159)	(63.6)	(58)	(23.2)	(32)	(12.8)
Drink alcohol when you are fishing	2009	84	65.6	32	25.0	12	9.3
	(2006)	(200)	(80.0)	(39)	(15.6)	(10)	(4.0)
Take a cell phone in case of emergencies	2009	10	7.8	23	18.0	95	74.2
	(2006)	(24)	(9.6)	(33)	(13.2)	(192)	(76.6)
Check weather/water conditions first	2009	15	11.7	32	25.0	81	63.3
	(2006)	(11)	(4.4)	(40)	(16.0)	(198)	(79.6)
Go down rocks to retrieve snagged line	2009	44	34.4	45	35.2	39	30.5
	(2006)	(129)	(51.6)	(95)	(38.0)	(25)	(10.0)

While the positive change in behaviour related to the use of flotation devices, one of the key safety messages of the 2009 fishing safety promotion, is gratifying, it is still a concern that

almost half of fishers (44%) report *never* wearing any lifejacket/buoyancy aid. As was suggested in the 2007 Report (Moran, 2007), further exposure to the sight of fishers wearing inflatable jackets at high-risk locations, publicity about the convenience and survival benefits of such jackets, and the sale of jackets at reduced prices should all continue to be strategies in future on-site fishing safety campaigns.

As was reported at the end of the 3 year campaign in 2008, with the exception of the non-use of lifejackets, other at-risk behaviours have not diminished over the years. The contributing factors that may explain this persistence include the predominance of males among fishers (2009, 84%), the transience of the fisher population (2009, less than half [46%] had taken part in previous surveys), and the culturally and linguistically diverse population (2009, more than half [52%] of the survey respondents had completed the non-English version of the questionnaire). In addition, one third of the respondents were also first time users of the site where interviewed (2009, 33%, 2006, 36%) and thus may not have seen the recently installed safety signage or angel rings. Finally, many of the respondents in each year of the study had lived for less than 4 years in New Zealand (2009, 32%). As stated in the 2008 Report (Moran, 2008), any one of the above factors may make the task of changing risky attitudes and behaviour challenging. Taken collectively, the combined effects of a predominantly male population, transitory participation, infrequent visits to the fishing sites, English as a second language, and recent residency, offer strong reasons why changes in attitude and behaviour appear resistant to change.

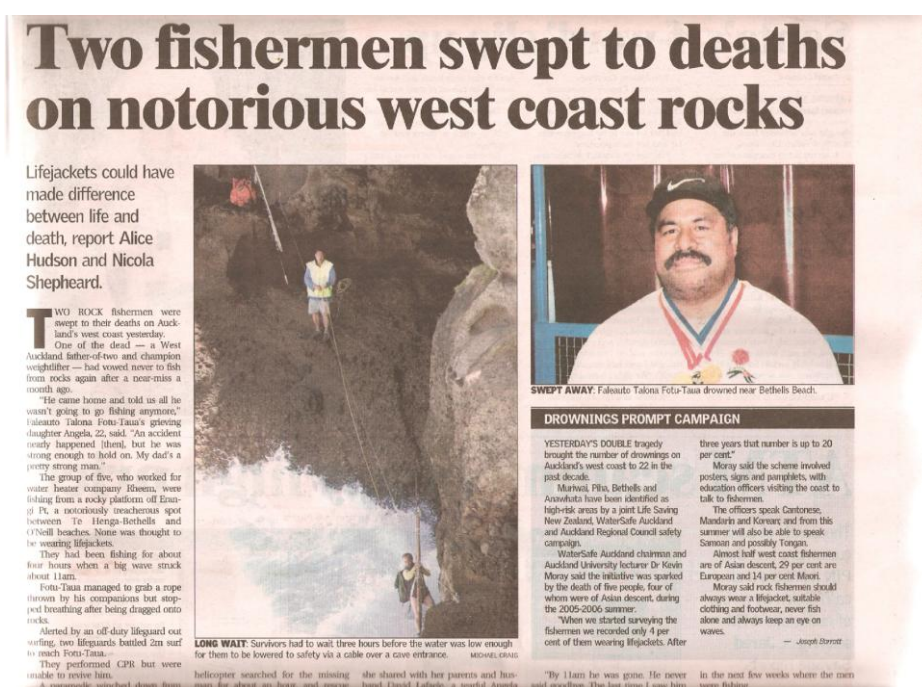


Illustration 2. In December 2008, two fishers drowned off Bethells Beach, a couple of weeks before the angel rings were installed at this remote and dangerous site reached only by a precarious cable.

4.6. Changes in Fishers' Knowledge, Attitudes and Behaviours

Fishers were asked to estimate whether their fishing safety knowledge, attitudes and behaviour and that of their mates and other fishers had improved in the previous three years (see question 14, Appendix 1). Table 13 shows that more than half of fishers (52%) considered that their safety knowledge had improved in the past year, a small proportion (15%) thought that it had not improved and one third (34%) didn't know whether it had improved. Almost half (45%) considered that their safety attitudes had improved, though some (12%) considered that their attitude had not improved. As was the case in 2006, approximately half of the fishers in 2009 thought that their safety behaviour when fishing had improved (2009, 48%; 2007, 53%).

Table 13. Self-Reported Changes in Fishers' Safety Knowledge, Attitudes and Behaviours

In the past year -		Agree		Disagree		Don't know		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Your rock fishing safety knowledge has improved?	2009	66	51.6	19	14.8	43	33.6	128	100.0
	2007	71	63.4	7	6.3	34	30.4	112	100.0
Your rock fishing safety attitude has improved?	2009	58	45.3	15	11.7	54	42.2	128	100.0
	2007	70	62.5	10	8.9	32	28.6	112	100.0
Your rock fishing safety behaviour has improved?	2009	62	48.4	19	14.8	47	36.7	128	100.0
	2007	59	52.7	17	15.2	36	32.1	112	100.0
Your mates rock fishing behaviour has improved?	2009	56	43.8	14	10.9	58	45.3	128	100.0
	2007	59	52.7	8	7.1	45	40.2	112	100.0
Other rock fisher's behaviour has improved?	2009	57	44.5	9	7.0	62	48.4	128	100.0
	2007	61	54.5	9	8.0	42	37.5	112	100.0

To ascertain whether there had been an overall improvement in safety behaviour among the fishing community, fishers were asked to indicate whether they thought the safety behaviour of friends or other rock fishers had improved. Table 13 shows that fewer participants in 2009 compared with 2006 thought that the safety behaviour of their mates (2009, 44%; 2007, 53%) or other fishers (2009, 45%; 2007, 55%) had improved.

Two thirds (67%) of fishers who self-identified as European thought that their fishing safety knowledge had improved compared with Maori (50%), Asian (49%), Pasifika (44%) and other ethnic groups (33%). They were also more likely to report that their safety attitudes (62%) and behaviour (67%) when fishing had improved (See Table 4.6a, Appendix 2). Compared with

other ethnic groups, more Maori thought that their friends (63%) and other fishers (63%) had improved their rock fishing behaviour.

When analysed by age group, older fishers in the 30-44 and 45+ years were more likely to report an improvement in knowledge than the younger 16-29 year age groups (53% and 54% compared with 48% for the younger group). They were also more likely to report improvements in their personal safety attitudes. In contrast, the 16-29 year age group were more likely than the older age groups to report an improvement in their friend's behaviour and that of other fishers (see Table 4.6c Appendix 2).

When analysed by length of residency, fewer fishers of recent residency thought that their fishing safety knowledge (35%), attitude (27.5%), and behaviour (30%) had improved (See Table 4.6c, Appendix 2).



Illustration 3.

Fisher, complete with inflatable lifejacket, studies the safety instructions on the angel ring at Flat Rock, Muriwai. Note the rescue throw rope, the pictorial instructions for angel ring use, and safety signage indicating large waves and recommended use of lifejacket

5. Recommendations

In light of these findings, several recommendations are made. These are:

1. To the Auckland Regional Council (ARC):

- Given the transient nature of the rock fishing population and the persistence of risky attitudes and behaviours as reported, retain the services of the safety advisors for a 2010 summer campaign.
- Given the ethnic diversity of the rock fishing population, retain the multilingual advisory service and look to ways of presenting safety information in multiple languages
- Maintain a regional leadership role in the collaborative venture by allocating funds to support future fishing safety promotion, including the installation of angel rings and safety signage at high risk sites thereby affirming ARC's commitment to its mandate to maintain harbour and coastal safety

2. To WaterSafe Auckland, Surf Life Saving Northern and other safety organizations:

- Consider ways of addressing the concerns highlighted in this Report by reinforcing and extending the current provision of public safety information and resources.
- Commit resources and personnel to the ongoing work collaboratively with all partners to promote best practice for West Coast fishing safety education beyond 2009.
- Disseminate the findings of the study to member organizations, national water safety organisations, community organisations (especially migrant community organisations), recreational fishing groups and businesses and the public at large.

3. To recreational fishers, fishing clubs and fishing organizations:

- Learn and implement the fishing safety messages promoted by the West Coast Fishing Safety Project.
- Encourage others in the rock fishing fraternity to adopt safe practices - especially the wearing of inflatable lifejackets when fishing at Auckland's high-risk west coast locations.
- Support the work of frontline fishing advisors and lifeguards in their efforts to make rock fishing a safe and happy experience without undue risk for all concerned.

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7. Appendix

7.1 Appendix 1 - The survey questionnaire

7.2 Appendix 2 – Additional frequency tables

Rock-Fishing in Auckland: 2009

In 2006, a pilot study asked Auckland's west coast rock fishers their opinions on rock fishing water safety. This follow-up survey is designed to gather further information from you about your current views. Many of the questions ask you about the possible dangers of fishing from rocks and your opinions on rock fishing safety.

Most questions offer a range of responses, for these questions there are no right or wrong answers –an answer is correct if it is true for you.

Please do not take too long over each question – normally your first answer is best. Please be honest in your responses, the survey is voluntary and anonymous so no names will ever be known.

If you have any queries about the survey please ask the researcher who will be happy to assist you.

- Did you take part in the Auckland west coast rock-fishing project in the past two years?**
1. Yes No
- If Yes, do you think the pilot project was:**
- Highly successful
 Successful
 Slightly successful
 Not successful
 Don't know
2. **Are you aware of the current rock fishing safety promotion in Auckland?**
- Yes No
- If Yes, how do you know about it?**
- Radio
 Television
 Rock fishing advisors
 Newspapers
 Magazines
 Retail outlets (eg fishing shops, gas stations)
 Other
-
3. **Are you?**
- Male Female
4. **How old are you?**
- 15-19 years
 20-29 years
 30-44 years
 45-64 years
 65+years
5. **Where else have you fished in the last year?**
-
6. **How would you best describe yourself?**
- European New Zealander
 Maori
 Pasifika
 Chinese/Taiwanese
 Korean
 Indian
 Other,
-
7. **How long have you lived in New Zealand?**
- Less than 1 year
 Between 1-4 years
 Between 5-9 years
 More than 10 years
 All my life
8. **How often have you fished at this location?**
- This my first time
 Between 2-5 times
 Between 6-10 times
 Between 11-20 times
 More than 20 times
9. **Have you seen the new angel rings on the west coast?**
- Yes No If **Yes**, do you think they are-
- Essential
 Very useful
 Not very useful
 Waste of money
 Don't know
10. **Can you suggest other dangerous sites without angel rings on the west coast -**
-

11. Do you think that the angel rings	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
1 – Have clear instructions on how to use them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 – Are the best source of assistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 – Are located in the most suitable sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Do you think that-	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
1 - Getting swept off the rocks while fishing is likely to result in my drowning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 - Rock fishing is no more risky than other water activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 –Drowning is a constant threat to my life when rock fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 - I am not concerned about the risks of rock fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 - Other fishers are at greater risk of drowning than me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 - I am a strong swimmer compared with most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 – I avoid fishing in bad conditions to reduce the risk of drowning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 - Always wearing a lifejacket makes rock fishing a lot safer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 - Turning my back to the waves when rock-fishing is very dangerous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 - My local knowledge of this site means I'm unlikely to get caught out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 - My experience of the sea will keep me safe when rock fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 - My swimming ability means I can get myself out of trouble	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. When rock fishing, do you –	Never	Sometimes	Often	Always
1 Wear a lifejacket/buoyancy aid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Check weather forecast beforehand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Drink alcohol when fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Wear gumboots or waders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Turn your back on the sea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Take a cell phone in case of emergencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Go down the rocks to retrieve snagged line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Do you believe that:	Agree	Disagree	Don't know
1 My knowledge of rock fishing safety has improved in the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 My practice of rock fishing safety has improved in the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 My attitudes towards rock fishing safety have improved in the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 My rock fishing mates seem more safety conscious in the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Other rock fishers around me seem more safety conscious in the past 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for taking part in the survey, please return this form to the Fishing Safety Advisor

7.2. Appendix 2: Additional Tables of Results

Question 9. Sighting of angel rings (Public Rescue Equipment) on west coast fishing locations by ethnicity, age group, and length of residency.

(See Section 4.3 of the Key Findings)

Table 4.3a. *Awareness of newly-installed angel rings by ethnicity, age group and length of residency*

Have you seen the newly-installed angel rings?	Yes		No	
	<i>n</i>	%	<i>n</i>	%
European	17	81.0	4	19.0
Maori	7	87.5	1	12.5
Pasifika	5	55.6	4	44.4
Asian	38	43.7	49	56.3
Other	0	0.0	3	100.0
16-29 years	20	45.5	24	54.5
30-44 years	25	58.1	18	41.9
45+ years	22	53.7	19	46.3
< 4 years residency	13	32.5	27	67.5
5-9 years residency	19	50.0	19	50.0
10+ years residency	35	70.0	15	30.0
All respondents	67	52.3	61	47.7

Question 10. Opinions on the angel rings (Public Rescue Equipment) on west coast fishing locations by ethnicity, age group, and length of residency.

Table 4.3b. *Opinions on newly-installed angel rings by ethnicity*

Do you think that -	Strongly agree/agree					Strongly disagree/disagree				
	Eur n/%	Maori n/%	Pac n/%	Asian n/%	Other n/%	Eur n/%	Maori n/%	Pac n/%	Asian n/%	Other n/%
- the angel rings have clear instructions	12 57.1	5 62.5	6 66.7	39 44.8	0	4 19.1	0	0	6 6.9	0
- the angel rings are the best source of assistance	11 52.4	2 25.0	6 66.7	39 44.8	0	3 14.3	0	0	7 8.1	0
- the angel rings are located at the most suitable sites	10 47.6	3 37.5	3 33.3	38 43.7	1 33.3	2 9.5	1 12.5	1 11.1	10 11.5	0

Note: *Unsure* responses not included

Table 4.3c. *Opinions on newly-installed angel rings by age group*

Do you think that -	Strongly agree/agree			Strongly disagree/disagree			Unsure		
	16-29 yrs	30-44 yrs	45yrs+	16-29 yrs	30-44 yrs	45yrs+	16-29 yrs	30-44 yrs	45yrs+
	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%
- the angel rings have clear instructions	20 45.5	23 52.5	19 46.3	4 9.1	4 9.3	2 4.9	20 45.5	16 37.2	20 48.8
- the angel rings are the best source of assistance	20 45.5	21 48.8	17 41.5	5 11.4	3 7.0	2 4.9	19 43.2	19 44.2	22 53.7
- the angel rings located at the most suitable sites	19 43.2	18 41.9	18 43.9	2 4.5	5 11.6	7 17.1	23 52.3	20 46.5	16 39.0

Table 4.3d. *Opinions on newly-installed angel rings by length of residency*

Do you think that -	Strongly agree/agree			Strongly disagree/disagree			Unsure		
	< 4 yrs	5-9 yrs	10yrs+	< 4 yrs	5-9 yrs	10yrs+	< 4 yrs	5-9 yrs	10yrs+
	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%
- the angel rings have clear instructions	11 27.5	20 52.6	21 42.0	3 7.5	2 5.3	5 10.0	26 65.0	16 42.1	14 28.0
- the angel rings are the best source of assistance	14 35.0	21 55.3	23 46.0	3 7.5	1 2.6	6 12.0	23 57.5	16 42.1	21 42.0
- the angel rings located at the most suitable sites	12 30.0	22 57.9	21 42.0	3 7.5	3 7.9	9 18.0	25 62.5	13 34.2	21 42.0

Question 11. Fisher perceptions of risk of drowning

(See Section 4.4 of the Key Findings)

Table 4.4a. *Fishers' Perceptions of risk of drowning when fishing from rocks*

Do you think that -	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Getting swept off the rocks is likely to result in my drowning	91	71.1	20	15.6	17	13.3
Rock fishing is no more risky than other water activities	49	38.3	22	17.2	56	43.8
Drowning is a constant threat to my life when rock fishing	78	60.9	24	18.8	26	20.3
I am not concerned about the risks of rock fishing	34	26.6	15	11.7	79	61.7
Others rock fishers are at greater risk of drowning than me	40	31.2	33	25.8	55	43.0
I am a strong swimmer compared with most other people	50	39.1	21	16.4	57	44.5
I avoid fishing in bad conditions to reduce the risk of drowning	97	75.8	20	15.6	11	8.6
Always wearing a lifejacket makes fishing a lot safer	80	62.5	25	19.5	23	18.0
Turning my back to the waves when rock fishing is very dangerous	90	70.3	26	20.3	12	9.4
My local knowledge of this site means I'm unlikely to get caught out	97	75.8	20	15.6	11	8.6
My experience of the sea will keep me safe when rock fishing	58	45.3	23	18.0	47	36.7
My swimming ability means I can get myself out of trouble	49	38.3	34	26.6	45	35.1

Table 4.4b. *Fisher Perceptions of Drowning Risk by Ethnicity*

Do you think that -	Strongly agree/agree					Strongly disagree/disagree				
	Eur <i>n</i> / %	Maori <i>n</i> / %	Pac <i>n</i> / %	Asian <i>n</i> / %	Other <i>n</i> / %	Eur <i>n</i> / %	Maori <i>n</i> / %	Pac <i>n</i> / %	Asian <i>n</i> / %	Other <i>n</i> / %
Getting swept off the rocks is likely to result in my drowning	15 71.4	5 62.5	6 66.7	60 70.0	1 33.3	6 28.6	3 37.5	3 33.3	7 8.1	1 33.3
Rock fishing is no more risky than other water activities	12 57.1	4 50.0	5 55.6	29 33.3	0	8 38.1	3 37.5	3 33.3	40 46.0	2 66.7
Drowning is a constant threat to my life when rock fishing	13 61.9	4 50.0	5 55.6	55 63.2	1 33.3	8 38.1	2 25.0	3 33.3	14 16.1	1 33.3
I am not concerned about the risks of rock fishing	6 28.6	4 50.0	1 11.1	22 23.0	1 33.3	13 61.9	4 50.0	6 66.7	54 62.1	2 66.7
Others rock fishers are at greater risk of drowning than me	11 47.6	4 50.0	4 44.4	21 24.1	0	5 23.8	3 37.5	2 22.2	43 49.4	2 66.7
I am a strong swimmer compared with most other people	13 61.9	6 75.0	3 33.3	27 31.0	1 33.3	7 33.3	1 12.5	2 22.2	46 52.9	2 66.7
I avoid fishing in bad conditions to reduce the risk of drowning	16 76.2	6 75.0	7 77.7	66 75.9	2 66.7	2 9.5	2 25.0	2 22.2	5 5.7	0
Always wearing a lifejacket makes fishing a lot safer	14 66.7	5 62.5	5 55.6	54 62.1	2 66.7	6 28.6	2 25.0	2 22.2	12 13.8	1 33.3
Turning my back to the waves when rock fishing is very dangerous	16 76.2	5 62.5	6 66.7	60 69.0	3 100.0	2 9.5	3 37.5	2 22.2	5 5.7	0
My local knowledge of this site means I'm unlikely to get caught out	14 66.7	6 75.0	4 44.4	25 28.7	0	3 14.3	1 12.5	2 22.2	40 46.0	1 33.3
My experience of the sea will keep me safe when rock fishing	16 76.2	7 87.5	5 55.6	30 34.5	0	2 9.5	0	2 22.2	41 47.1	2 66.7
My swimming ability means I can get myself out of trouble	13 61.9	7 87.5	5 55.6	23 26.45	1 33.3	3 14.3	1 12.5	2 22.2	38 43.7	1 33.3

Note: *Unsure* responses not included

Table 4.4c. Fisher Perceptions of Drowning Risk by Age Group

Do you think that -	Strongly agree/agree			Strongly disagree/disagree		
	16-29 yrs	30-44 yrs	45yrs+	16-29 yrs	30-44 yrs	45yrs+
	n/%	n/%	n/%	n/%	n/%	n/%
Getting swept off the rocks is likely to result in my drowning	33 75.0	29 67.4	29 70.7	4 9.1	6 14.0	7 17.1
Rock fishing is no more risky than other water activities	15 34.1	19 44.2	16 39.0	19 43.2	20 46.5	17 41.5
Drowning is a constant threat to my life when rock fishing	25 56.8	25 58.1	28 68.3	10 22.7	9 20.9	7 17.1
I am not concerned about the risks of rock fishing	11 25.0	12 27.9	11 26.8	28 63.6	26 60.5	25 61.0
Others rock fishers are at greater risk of drowning than me	14 31.8	12 27.9	14 34.1	20 45.5	18 41.9	17 41.5
I am a strong swimmer compared with most other people	21 47.7	17 39.5	12 29.3	16 36.4	19 44.1	22 53.7
I avoid fishing in bad conditions to reduce the risk of drowning	31 70.5	35 81.4	31 75.6	2 4.5	4 9.3	5 12.2
Always wearing a lifejacket makes fishing a lot safer	25 56.8	28 65.9	27 65.9	9 20.5	6 14.0	8 19.5
Turning my back to the waves when rock fishing is very dangerous	31 70.5	28 65.9	31 75.6	3 6.8	5 11.6	4 9.8
My local knowledge of this site means I'm unlikely to get caught out	13 29.5	21 65.4	15 36.6	16 36.4	12 27.9	19 46.3
My experience of the sea will keep me safe when rock fishing	15 34.1	22 48.8	21 51.2	19 43.2	13 30.2	15 36.6
My swimming ability means I can get myself out of trouble	15 34.1	19 51.2	15 36.6	16 36.4	14 32.6	15 36.6

Note: *Unsure* responses not included

Table 4.4d. Fisher Perceptions of Drowning Risk by Length of Residency

Do you think that -	Strongly agree/agree			Strongly disagree/disagree		
	< 4 yrs	5-9 yrs	10yrs+	< 4 yrs	5-9 yrs	10yrs+
	n/%	n/%	n/%	n/%	n/%	n/%
Getting swept off the rocks is likely to result in my drowning	30 75.0	27 71.1	34 68.0	1 2.5	3 7.9	13 26.0
Rock fishing is no more risky than other water activities	9 22.5	14 36.8	27 54.0	21 52.5	18 47.4	17 34.0
Drowning is a constant threat to my life when rock fishing	25 62.5	25 65.8	28 56.0	6 15.0	5 13.2	15 30.0
I am not concerned about the risks of rock fishing	10 25.0	10 26.3	14 28.0	23 57.5	24 63.2	32 64.0
Others rock fishers are at greater risk of drowning than me	10 25.0	8 21.1	22 44.0	22 55.0	19 50.0	14 28.0
I am a strong swimmer compared with most other people	10 25.0	12 31.6	28 56.0	22 55.0	19 50.0	16 32.0
I avoid fishing in bad conditions to reduce the risk of drowning	26 65.0	31 81.6	38 76.0	3 7.5	2 5.3	6 12.0
Always wearing a lifejacket makes fishing a lot safer	23 57.5	26 68.4	31 62.0	7 17.5	5 13.2	11 22.0
Turning my back to the waves when rock fishing is very dangerous	23 57.5	29 76.3	35 70.0	2 5.0	2 5.3	8 16.0
My local knowledge of this site means I'm unlikely to get caught out	10 25.0	10 26.3	29 58.0	17 42.5	17 44.7	13 26.0
My experience of the sea will keep me safe when rock fishing	12 30.0	12 31.6	34 68.0	20 50.0	18 47.4	9 18.0
My swimming ability means I can get myself out of trouble	10 25.0	10 26.3	29 58.0	20 50.0	15 37.5	10 20.0

Notes: *Unsure* responses not included

Question 12. Self-reported behaviours of fishers

(See Section 4.5 of the Key Findings)

Table 4.5a. *Water Safety Behaviours of Fishers*

When fishing from rocks, do you	Never		Sometimes		Often		Always	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Wear a lifejacket or other flotation device	44	34.4	51	39.8	24	18.8	9	7.0
Turn your back to the sea when fishing off rocks	61	47.7	48	37.5	12	9.4	7	5.5
Wear gumboots or waders when fishing off rocks	43	33.6	58	45.3	20	15.6	7	5.5
Drink alcohol when you are fishing	84	65.6	32	25.0	9	7.0	3	2.3
Take a cell phone in case of emergencies	10	7.8	23	18.0	26	20.3	69	53.9
Check weather/water conditions first	15	11.7	32	25.0	35	27.3	46	35.9
Go down rocks to retrieve snagged lines	44	34.4	45	35.2	24	18.8	15	11.7

Table 4.5b. *Water Safety Behaviours of Fishers by Ethnicity*

When fishing from rocks, do you –	Never					Sometimes					Often/always				
	Eur n/%	Ma n/%	Pac n/%	Asia n/%	Other n/%	Eur n/%	Ma n/%	Pac n/%	Asia n/%	Other n/%	Eur n/%	Ma n/%	Pac n/%	Asia n/%	Other n/%
Wear a lifejacket or other flotation device	6 28.6	3 37.5	1 11.1	34 39.1	0	6 28.6	4 50.0	6 66.7	33 37.9	2 66.7	9 42.9	1 12.5	2 22.2	20 22.9	1 33.3
Turn your back to the sea when fishing	14 66.7	2 25.0	3 33.3	28 26.8	0	4 19.0	3 37.5	2 22.2	38 43.7	1 33.3	3 14.3	3 37.5	2 22.2	11 12.6	0
Wear gumboots or waders	10 47.6	2 25.0	5 55.6	26 29.9	0	4 19.0	4 50.0	3 33.3	35 40.2	2 66.7	7 33.3	2 25.0	1 11.1	16 18.4	1 33.3
Drink alcohol when you are fishing	10 47.6	2 25.0	3 33.3	66 75.9	2 66.7	9 42.9	3 37.5	5 55.5	15 17.2	0	2 9.5	3 37.5	1 11.1	6 6.9	1
Take a cell phone in case of emergencies	1 4.8	1 12.5	1 11.1	7 8.1	0	5 23.8	2 25.0	3 33.3	19 27.8	0	15 71.4	5 62.5	5 55.5	67 77.0	3 100.0
Check weather/water conditions first s	1 4.8	2 25.0	0	12 13.8	0	3 14.3	2 25.0	4 44.4	23 26.5	0	17 81.0	4 50.0	5 55.5	52 59.8	3 100.0
Go down rocks to retrieve snagged lines	4 19.0	2 25.0	3 33.3	34 39.1	1 33.3	6 28.6	1 12.5	4 44.4	32 36.8	2 66.7	11 52.4	5 62.5	2 22.2	21 24.1	0 100.0

Table 4.5c. *Water Safety Behaviours of Fishers by Age Group*

When fishing from rocks, do you -	Never			Sometimes			Often/always		
	16-29	30-44	45-64	16-29	30-44	45-64	16-29	30-44	45-64
	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%
Wear a lifejacket or other flotation device	16 40.0	13 34.2	15 30.0	20 50.0	16 42.1	15 30.0	8 20.0	14 36.8	11 22.0
Check weather/water conditions first	7 17.5	3 7.9	5 10.0	11 27.5	12 31.6	9 18.0	26 65.0	28 73.7	27 54.0
Drink alcohol when you are fishing	27 67.5	27 71.1	30 60.0	11 27.5	13 34.2	8 16.0	6 15.8	3 7.9	3 6.0
Wear gumboots or waders	12 30.0	14 36.8	17 34.0	24 60.0	19 50.0	15 30.0	8 21.1	10 26.3	9 18.0
Turn your back to the sea when fishing	16 40.0	24 63.2	21 42.0	20 50.0	15 39.5	13 26.0	8 21.1	4 10.5	7 14.0
Take a cell phone in case of emergencies	10 253.0	4 10.5	5 10.0	5 12.5	10 25.0	8 16.0	38 97.0	29 76.3	28 56.0
Go down rocks to retrieve snagged lines	15 37.5	17 44.7	12 24.0	19 47.5	14 26.7	12 24.0	12 31.6	10 26.3	12 24.0

Table 4.5d. *Water Safety Behaviours of Fishers by Length of Residency*

When fishing from rocks, do you -	Never			Sometimes			Often/always		
	< 4 yrs	5-9 yrs	10 yrs+	< 4 yrs	5-9 yrs	10 yrs+	< 4 yrs	5-9 yrs	10 yrs+
	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%	n/%
Wear a lifejacket or other flotation device	17 42.5	9 23.7	18 36.0	14 35.0	20 52.6	17 34.0	9 22.5	9 23.7	15 30.0
Check weather/water conditions first	8 20.0	2 5.3	5 10.0	11 27.5	13 34.2	8 16.0	21 52.0	23 60.5	37 72.0
Drink alcohol when you are fishing	25 62.5	30 79.0	29 58.0	10 25.0	7 18.4	15 30.0	5 12.5	1 26.3	6 12.0
Wear gumboots or waders	13 32.5	8 21.1	22 44.0	23 57.5	21 55.3	14 28.0	4 10.0	15 39.5	14 28.0
Turn your back to the sea when fishing	20 50.0	15 39.5	26 52.0	20 50.0	15 39.5	13 26.0	0 0.0	8 21.1	11 22.0
Take a cell phone in case of emergencies	7 17.5	1 2.6	2 4.0	6 15.0	8 21.1	9 18.0	27 67.5	29 76.3	39 78.0
Go down rocks to retrieve snagged lines	15 37.5	17 44.8	12 24.0	18 45.0	8 21.1	17 34.0	7 17.5	13 34.2	19 38.0

Question 13. Perceived Changes in Water Safety Knowledge, Attitudes and Behaviours in the Previous Year

(See Section 4.6 of the Key Findings)

Table 4.6a. *Self-reported Improvements in Rock Fishing Safety Knowledge, Attitudes and Behaviours (of Self, Friends and Other Fishers) by Ethnicity*

In the past year -	European n/%	Maori n/%	Pasifika n/%	Asian n/%	Other n/%	Total n/%
Your rock fishing safety knowledge has improved?	14 66.7	4 50.0	4 44.4	43 49.4	1 33.3	66 51.6
Your rock fishing safety attitude has improved?	13 61.9	4 50.0	3 33.3	38 43.7	1 33.3	59 46.1
Your rock fishing safety behaviour has improved?	14 66.7	4 50.0	3 33.3	40 46.0	1 33.3	62 48.4
Your mates rock fishing behaviour has improved?	11 52.4	5 62.5	5 55.5	34 39.1	1 33.3	56 43.8
Other fishers behaviour has improved?	14 66.7	5 62.5	4 44.4	32 363.8	2 66.7	57 44.5

Table 4.6b. *Self-reported Improvements in Rock Fishing Safety Knowledge, Attitudes and Behaviours (of Self, Friends and Other Fishers) by Age Group*

In the past year -	16-29 years n/%	30-44 years n/%	45 -64 years n/%	Total n/%
Your rock fishing safety knowledge has improved?	21 47.7%	23 53.4%	22 53.7%	66 51.6%
Your rock fishing safety attitude has improved?	18 40.9%	24 55.8%	16 39.0%	58 45.3%
Your rock fishing safety behaviour has improved?	20 45.5%	25 40.3%	17 41.5%	62 48.4%
Your mates rock fishing behaviour has improved?	18 40.9%	22 39.3%	16 39.0%	56 43.8%
Other rock fishers behaviour has improved?	21 47.7%	21 36.8%	15 36.6%	57 44.5%

Table 4.6c. *Self-reported Improvements in Rock Fishing Safety Knowledge, Attitudes and Behaviours (of Self, Friends and Other Fishers) by Length of Residency*

In the past year -	< 4 years		5-9 years		10 years+		Total	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Your rock fishing safety knowledge has improved?	14	35.0%	21	55.3%	31	62.0%	66	51.6%
Your rock fishing safety attitude has improved?	11	27.5%	20	52.6%	27	54.0%	58	45.3%
Your rock fishing safety behaviour has improved?	12	30.0%	21	55.3%	29	58.0%	62	48.4%
Your mates rock fishing behaviour has improved?	13	32.5%	16	28.6%	27	54.0%	56	43.8%
Other rock fishers behaviour has improved?	12	30.0%	18	47.4%	18	36.0%	57	44.5%