Water Safety and Auckland's West Coast Fishers –

Follow-up Report 2007

Preface and Acknowledgements

This report is the second evaluation of a collaborative project between the Auckland Regional Council (ARC), Surf Life Saving Northern Region (SLSN) and Watersafe Auckland Incorporated (WAI) entitled the *West Coast Rock Fishing Safety Pilot Project.*

The 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. As a consequence of the success of the initial pilot project in the summer of 2006, recommendations to continue the rock fishing safety initiative for a further two years were acted upon and the safety advisory service was re-established for the summer season of 2007.

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Report authored and produced by:

Dr Kevin Moran, Principal lecturer in Health and Physical Education
Faculty of Education, The University of Auckland, Auckland, New Zealand.

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Further enquiries about the report should be made to:
WaterSafe Auckland
PO Box 8163, Symonds Street, Auckland
3 Arawa Street, Grafton, Auckland
Ph 09 306 0809
Fax 09 306 0811

Further copies of the report are available in PDF format on the website of Watersafe Auckland at:
http://www.watersafe.org.nz

Executive Summary

1. Background

The Auckland Regional Council (ARC), WaterSafe Auckland Inc (WAI) and Surf Life Saving Northern Region (SLSNR) jointly conducted a follow-up project that built on the pilot rock fishing safety campaign entitled *West Coast Fishing Safety* initiated in the summer of 2006 to address mounting concerns over the increasing number of fishing fatalities on Auckland's west coast. The purposes of this second 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. Objectives

The specific objectives of this report are:

1. **Ascertain the fishers awareness of the current on-site fishing safety promotion on Auckland's west coast during the summer months of 2007**
2. **Survey fishers to find out if they had taken part in the 2006 project and, if so, what effect that safety campaign had had on their current understanding and practice of water safety when fishing from rocks**
3. **Compare and contrast fishers' perception of drowning risk, their safety behaviour and self-reported changes in knowledge, attitudes and behaviours from 2006-2007**
4. **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

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 2007. A sample of 112 fishers voluntarily completed a written questionnaire that sought information on whether they had taken part in the 2006 campaign and if they were aware of the follow-up 2007 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 11 questions, seven of which had been included in the 2006 survey. Two new introductory questions sought information on their participation in the previous 2006 study and their knowledge of the current project, two concluding questions asked them if they thought that their fishing safety knowledge, attitudes and behaviours had improved in the past year.

4. Key Findings

(Important comments on findings are italicized)

4.1 Participant demographics:

- **As was the case in 2006, the sample consisted of ten times as many males (males 88%, females 12%) and most were aged between 20-44 years (85%).**
- **Proportionally more Asian peoples (46%) and proportionally less European (23%) and Maori (11%) New Zealanders took part in the survey.**
- **More than one third (37%) of those surveyed were of recent residency (< 4 years).**

4.2 Awareness of the West Coast Fishing Safety Project

- **More than one third of fishers (39%) reported that they had taken part in the West Coast Fishing Safety Project in 2006.**
- **Of those who had taken part, most thought that the campaign had been highly successful/successful (59%) and a third felt that it had been slightly/not successful (32%).**
- **Two thirds of fishers (66%) reported that they were aware of the current 2007 West Coast Fishing Safety Project**
- **Of these, more than half of the fishers (56%) identified the fishing advisers as their source of information. Other sources included retail outlets (15%), magazines (9%), television (7%), newspapers (6%) and radio (5%).**

4.3. Perceptions of Drowning Risk

- **Fewer fishers believed that rock fishing was less dangerous than other aquatic activities (2007, 33%; 2006, 41%)**
- **More believed that drowning was a constant threat to life when fishing from rocks (2007, 70%; 2006, 50%).**
- ***This would suggest that fishers in the 2007 survey perceived greater severity of risk in rock fishing than reported by fishers in the 2006 survey.***

- **Fewer Asian fishers (33%), recent residents (39%) and fishers over 45 years of age (36%) considered themselves to be strong swimmers**
- **More fishers agreed that always wearing a lifejacket made fishing a lot safer (2007, 80%; 2006, 71%) and fewer disagreed that lifejackets made fishing safer (2007, 6%; 2006, 20%)**
- ***This suggests that one of the key safety messages of the 2006 fishing safety campaign, always wearing a lifejacket when fishing at high risk locations such as Auckland's west coast, may have started to positively influence entrenched attitudes towards the wearing of flotation aids among a group traditionally resistant to their use.***
- **Half of the fishers still felt that their local knowledge of the site where interviewed meant that they were unlikely to get into difficulties (2007, 55%; 2006, 50%) and over half in both surveys considered that their knowledge of the sea would help keep them safe (2007, 63% 2006, 58%).**
- ***This continued confidence in their supposed knowledge of the site and the sea is a cause for concern given that for one quarter (24%) of the 2007 respondents it was their first visit to the site (compared with 36% in 2006).***
- ***The confidence of many fishers in the protective value of their knowledge of New Zealand sea conditions may also in question given that more than one third (37%) of the fishers had lived in New Zealand for less than 4 years (compared with 42% in 2006).***

4.4. 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 (2007, 53%; 2006, 72%) and more reporting wearing them often (2007, 15%; 2006, 4%).**
- ***However, it is still a concern that more than half of fishers (53%) report never wearing any lifejacket/flotation aid. Clearly resistance to the use of lifejackets is still endemic among the rock fishing community.***
- **More fishers reported never turning their back to the sea (2007, 68%; 2006, 58%) and always taken a cell phone in case of emergencies (2007, 91%; 2006, 77%).**
- **While more fishers (68%) reported never turning their back on the sea, *it is a concern that one third (32%) report still sometimes/often engaging in this dangerous practice and promotion of the dangers inherent in this at-risk behaviour need to continue.***

- **Almost all 2007 respondents (91%) reported *often/always* taking a cell phone with them as emergency equipment.**
- ***Of particular concern is that one third (32%) of fishers in 2007 reported sometimes/often consuming alcohol when fishing. Further promotional work on the folly of mixing alcohol with fishing from rocks would appear prudent.***

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

- **Two thirds of fishers (63%) considered that their safety knowledge had improved in the past year, a small proportion (6%) thought that it had not**
- **A similar proportion (63%) also considered that their safety attitudes had improved though some (9%) considered that their attitude had not improved.**
- **More than half (53%) reported that their own safety behaviour when fishing had improved.**
- **More than half of participants thought that the safety behaviour of their mates (53%) or other fishers' (55%) had improved.**

5. Recommendations

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

1. To the Auckland Regional Council (ARC):

- **Retain the services of the safety advisers for a 2008 summer campaign in order to refine and reinforce the pilot project messages as well as to assess the ongoing effect of the programme on fisher's knowledge and behaviours.**
- **Explore ways of maintaining a fishing safety presence on the west coast beyond the third and final year of the pilot programme in 2008.**
- **Maintain a regional leadership role in the collaborative venture by allocating funds to support future fishing safety promotion, thereby affirming ARC's commitment to its mandate for 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 completion of the pilot project in 2008 and work collaboratively with all partners to ascertain best practice for ongoing West Coast fishing safety education beyond 2008.**
- **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 advisers and lifeguards in their efforts to make your 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 (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 pilot 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 2006 campaign was twofold. Firstly, the campaign piloted a fishing safety education programme that would help rock 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 pilot project was unique in that the fishing safety education programme was conducted on-site at high-risk fishing locations. Furthermore, the survey is believed to be the first of its kind to investigate the beliefs and behaviours of fishers in order to target future drowning prevention messages. Details of the pilot study were published in a report entitled *Water Safety and Auckland's West Coast Rock Fishers* and was presented to the collaborating partners in May, 2006.

A recent Water Safety New Zealand media release (11th January, 2007) reported that, of significant note in the provisional drowning figures for 2006, was the reduction in the number of land-based fishing fatalities from 13 in each of 2004 and 2005 to six (7%) of all drowning incidents in 2006 (WSNZ, 2007). This reduction was especially evident in relation to "the rocky foreshore, notable as popular fishing and kaimoana gathering sites from nine (8%) in 2005 to five (6%) in 2006" (WSNZ, 2007, p. 2). While it is difficult to attribute this reduction in fatalities directly to the drowning prevention initiative put in place by the collaborating partners, it is encouraging that such a reduction has taken place and it provides the impetus for the continuation of the campaign in 2007 which is the subject of this follow-up report.

2. Purpose and Outcomes of the Study

2.1 Purpose

The purposes of this second 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 2006 and 2007
2. Survey fishers to ascertain whether they had taken part in the 2006 study and, if so, what effect that safety campaign had had on their current understanding and practice of water safety when fishing from rocks
3. Compare and contrast:
    a. fishers' perception of drowning risk,
    b. their safety behaviour and
    c. self-reported changes in knowledge, attitudes and behaviours from 2006-2007
4. 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 report on the 2006 pilot study entitled *Water Safety and Auckland's west coast rock fishers* (Moran, 2006) 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 May 2006. Recommendations from the report were accepted and all collaborating partners agreed to support a continuation of the project for 2007.

The original four Chinese-speaking field officers used in 2006 and two additional Korean-speaking advisers were employed as safety advisers and survey administrators. The same four well-known black spots for rock fishing fatalities were again targeted as key locations for disseminating safety advice and surveying rock fishers, these included Karekare, Piha, Whatipu and Muriwai. The latter two sites were given extra attention because of their popularity among fishers.

3.2 Procedures

As was the case in 2006, the field officers (n = 6) were trained to conduct all aspects of the fieldwork process from education to data collection and management. The field officers operated in pairs and were systematically allocated to one of the four sites to be surveyed. 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 others devices such as baskets or hand lines as well as those gathering shellfish from the rocks.

Given the large proportion of fishers of Chinese (38%) and Korean (6%) origins reported in the 2006 study (Moran, 2006), the questionnaire was again produced in English and Mandarin. To further assist non-English speaking Chinese/Korean fishers, four of the field officers were fluent Chinese speakers and an additional two Korean speaking advisers were also employed in both the safety promotion and survey phases of the 2007 study. 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 rock fishers over 16 years of age.

The water safety advice and survey data gathering took place during weekends between February and April in the summer of 2006 and included several peak holiday

weekends. The sample did not therefore include fishers who used the four 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 11 questions, seven of which had been included in the 2006 survey. Two new introductory questions sought information on their participation in the previous 2006 study and their knowledge of the current project. 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 2006 survey were 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 final 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*.

3.4 Data analysis

Data from the completed questionnaires were entered into Microsoft Excel 2003 for statistical analysis using SPSS Version 15.0 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 survey are presented in five 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 115 questionnaires were returned and, of these, 3 (2.6%) were considered invalid because of incorrect completion and were excluded from the data analysis. Thus, the final database for this study included 112 adults who were interviewed while participating in rock fishing activity at popular locations on the west coast of Auckland at the end of the summer season of 2007. Analysis of respondents' age, gender, length of residency, and ethnicity indicated that the demographic structure of the sample reflected the previous findings of the 2006 Report (Moran, 2006).

Table 1. *Demographic Characteristics of Fishers*

Demographic Characteristic		***n***	**%**	**Total**
Gender	Male	99	88.4	112
	Female	13	11.6	100%
Ethnicity	European	26	23.2	112 100%
	Maori	12	10.7	
	Pasifika	18	16.1	
	Asian	51	45.5	
	Other	5	4.5	
Age group	16-24 years	3	2.7	112 100%
	20-29 years	46	41.1	
	30-44 years	49	43.8	
	45-64 years	14	12.5	
Length of residency	<4 years	41	36.6	112 100%
	5-9 years	10	8.9	
	>10 years	21	18.8	
	All my life	40	35.7	

As was the case in 2006, the sample consisted of ten times as many males than females and most were aged between 20-44 years. In terms of ethnicity, proportionally more Asian peoples (46%; $n = 51$) were included in the study whereas proportionally less European (23%; $n = 26$) and Maori (11%; $n = 12$) New Zealanders were included. More than one third (37%; $n = 41$) 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 in Table 2 as of Asian ethnicity, self-identified with six Asian region countries. Fewer fishers

(18%; *n* = 20) than was the case in 2006 opted to complete the survey using the Chinese language version of the questionnaire (2007 survey, 18%; 2006 survey, 24%).

Table 2. *Self-identified Ethnicity of Fishers*

Ethnic group	***n***	***%***	**Cumulative %**
European	26	23.2	23.2
Maori	12	10.7	33.9
Pasifika	18	16.1	50.0
Chinese/Taiwanese	28	25.0	75.0
Korean	13	11.6	86.6
Indian	3	2.6	89.3
Philippino	5	4.6	93.8
Other Asian	2	1.8	96.4
South African	2	1.8	98.2
Unspecified	3	2.6	100.0
Total	112	100.0	100.0

Fishers were asked to describe how often they had fished at the location where they completed the questionnaire (see survey question 7, Appendix 1). Table 2 shows that, as was the case in 2006, many of the fishers were not frequent visitors to the site, with one quarter (24%; *n* = 27) reporting that this was their first visit to the site.

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

How often have you fished at this site?	***n***	***%***	**Cumulative %**
First time at site	27	24.1	24.1
2-5 times	48	42.9	67.0
6-10 times	18	16.1	83.0
11-20 times	12	10.7	93.8
>20 times	7	6.3	100.0
Where else have you fished?	***n***		
Other Auckland west coast sites	17		
East coast	8		
Auckland Harbours	6		
Other New Zealand sites	6		

Slightly less than half (43%; *n* = 48) reporting that they had visited the site 2-5 times. Cumulatively, more than two thirds of the fishers (67%; *n* = 75) had visited the site less than five times. Less than one fifth (17%; n = 19) of the fishers had visited the site more than 10 times.

When asked where else they had fished from rocks (see survey question 8, Appendix 1), one third of respondents reported fishing at other locations as indicated in Table 3 with 17 fishers reporting having fished at other Auckland west coast locations.

4.2 Awareness of West Coast Rock Fishing Safety Project

Table 4 shows that, when asked if they had participated in the 2006 Rock Fishing Safety Project (see survey question 1, Appendix1), most fishers reported that they had not taken part (61%; n = 68), and more than one third of fishers (39.3%; *n* = 44) reported that they had.

Table 4. *Participation in, and estimation of success of, the 2006 Rock Fishing Project*

Did you take part in the 2006 rock fishing study?	***n***	**%**
Yes	44	39.3
No	68	60.7
Total	112	100.0
If Yes, how successful do you think it was?	***n***	***%***
Highly successful	5	11.4
Successful	21	47.7
Slightly successful	12	27.3
Not successful	2	4.5
Don't know	4	9.1
Total	44	100.0

When those who had participated were asked whether they had considered the safety project to have been successful, more than half thought that the campaign had been *highly successful/successful* (59%; *n* = 26), slightly more than a quarter (27%; n = 12) felt that it had been *slightly successful* and a small proportion considered that it was *not successful* (5%; *n* = 2).

Fishers were also asked whether they were aware of the current safety project (see survey question 2, Appendix1). Table 5 shows that two thirds of fishers (66%; *n* = 74) reported that they were aware of the current project When those who were aware of the current project were asked how they had found out about the project, more than half of the fishers (56%; *n* = 46) identified the fishing safety advisers as their source of information. Other sources of information, in descending order of frequency, included retail outlets (15%), magazines (9%), television (7%), newspapers (6%) and radio (5%).

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

Are you aware of the current project?	***n***	**%**
Yes	74	66.1
No	38	33.9
Total	112	100.0
If Yes, how did you find out about the current project?	***n***	***%***
Fishing safety advisers	46	56.2
Retail outlets	12	14.6
Magazines	7	8.5
Television	6	7.3
Newspapers	5	6.1
Radio	4	4.9
Other sources (friends, club notice board)	2	2.4
Total	82*	100.0

*several fishers identified more than one source of information

That most fishers (56%; n = 46) had heard of the current safety promotion through the advisers 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 low recall of the current project via these channels (see Table 5).

4.3 Fishers' perceptions of drowning risk

As was the case in the 2006 Rock Fishing Safety Project, 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 9, 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 6-9 below.

Table 6 shows responses to statements 1-3 (Question 9) 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 three quarters of fishers (2007, 74% *v* 2006,70%) again agreeing that getting swept off rocks is likely to result in drowning. Fewer fishers believed that rock fishing was less dangerous than other aquatic activities (2007, 33% *v* 2006, 41%) and more believed that drowning was a constant threat to life when fishing from rocks (2007, 70% *v* 2006, 50%). This would suggest that fishers in the 2007 survey perceived greater severity of risk in rock fishing than reported by fishers in the 2006 survey.

Table 6. *Fishers' Perceptions of the Severity of Risk of Drowning, 2006-2007*

Do you think that-	**2007 (*2006*)**	**Strongly agree/ Agree**		**Unsure**		**Strongly disagree/ Disagree**	
		n	***%***	***n***	***%***	***n***	***%***
1. Getting swept off the rocks is likely to result in my drowning	2007	83	74.1	12	10.7	17	15.2
	(2006)	*(176)*	*(70.2)*	*(39)*	*(15.6)*	*(31)*	*(12.4)*
2. Rock fishing is no more risky than other water activities	2007	37	33.1	31	27.7	44	39.3
	(2006)	*(103)*	*(41.2)*	*(46)*	*(18.4)*	*(97)*	*(38.8)*
3. Drowning is a constant threat to my life when rock fishing	2007	75	66.9	18	16.1	19	17.0
	(2006)	*(126)*	*(50.0)*	*(45)*	*(18.0)*	*(75)*	*(30.0)*

When analysed by age group and length of residency, few major differences were evident in fishers' perceptions of the severity of the risk of drowning (see Tables 4.3c and 4.3d, Appendix 2). When analysed by ethnicity, proportionally fewer Maori than other ethnic groups thought it likely that they would drown if swept off rocks (42%) or considered drowning a constant threat to their life when fishing from rocks (42%) (See Table 4.3b, Appendix 2). In contrast to this, more Asian fishers agreed that getting swept off rocks was likely to result in drowning (87%) and considered drowning a constant threat to their lives when fishing from rocks (69%).

Table 7 shows responses to statements 4-6 (Question 9) 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 first statement with most fishers disagreeing that they were not concerned about the risk of drowning (59% *v* 61%). Surprisingly, almost half of the 2007 cohort thought that others were at greater risk than themselves (47% *v* 32%). Table 7 also shows no changes were evident in the proportions of fishers who considered that they were strong swimmers compared with others (45% *v* 46%).

Table 7. *Fishers' Perceptions of their Vulnerability to Drowning, 2006-2007*

Do you think that-	**2007 (2006)**	**Strongly agree/ Agree**		**Unsure**		**Strongly disagree/ Disagree**	
		n	***%***	***n***	***%***	***n***	***%***
4. I am not concerned about the risks of rock fishing	2007	36	32.2	10	8.9	66	58.9
	(2006)	*(68)*	*(27.2)*	*(26)*	*(10.4)*	*(152)*	*(60.5)*
5. Others rock fishers are at greater risk of drowning than me	2007	52	46.5	34	30.4	26	23.2
	(2006)	*(81)*	*(32.4)*	*76*	*(30.4)*	*(89)*	*(35.6)*
6. I am a strong swimmer compared with most other people	2007	50	44.6	33	29.5	29	25.9
	(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 (33%), recent residents (39%) and fishers over 45 years of age (36%) considered themselves to be strong swimmers. In addition, more young fishers (<29 years), those with recent residency (<4 years) and of

Asian origin disagreed that other fishers were at greater risk of drowning than themselves (See Tables 4.3b, 4.3c and 4.3d, Appendix 2).

Table 8 shows responses to statements 7-9 (Question 9) 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 2007 survey responded positively to all three statements of the efficacy of preventive actins to reduce drowning risk (See Table 8). While responses to perceptions of the efficacy of avoiding fishing in bad conditions (85% *v* 87%) and not turning your back to the sea (87% *v* 92%) did not differ greatly, more fishers agreed that always wearing a lifejacket made fishing a lot safer (80% *v* 71%) and fewer disagreed that lifejackets made fishing safer (6% *v* 20%). This suggests that one of the key safety messages of the 2006 fishing safety campaign, always wearing a lifejacket when fishing at high risk locations such as Auckland's west coast, may have started to positively influence entrenched attitudes towards the wearing of flotation aids among a group traditionally resistant to their use.

Table 8. *Fishers' Perceptions of the Efficacy of Preventive Action in Reducing Drowning Risk, 2006-2007*

Do you think that-	**2007** *(2006)*	**Strongly agree/ Agree**		**Unsure**		**Strongly disagree/ Disagree**	
		n	***%***	***n***	***%***	***n***	***%***
7. I avoid fishing in bad conditions to reduce the risk of drowning	2007	95	84.8	10	8.9	7	6.3
	(2006)	*(219)*	*(85.8)*	*(10)*	*4.0*	*(17)*	*6.8*
8. Always wearing a lifejacket makes fishing a lot safer	2007	89	79.5	16	14.3	7	6.3
	(2006)	*(177)*	*(70.6)*	*(20)*	*(8.0)*	*(49)*	*(19.6)*
9. Turning my back to the waves when rock fishing is very dangerous	2007	97	86.6	11	9.8	4	3.6
	(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 older fishers (45+ years) and those of European origin thought that always wearing a lifejacket made fishing a lot safer (See Tables 4.3b, 4.3c and 4.3d, Appendix 2).

Table 9 shows responses to statements 10-12 (Question 9) 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 the 2007 to each of these three statements were similar to those of the fisher who took part in the 2006 survey. Half of the fishers still felt that their local knowledge of the site where interviewed meant that they were unlikely to get into difficulties (55% *v* 50%) and over half in both surveys considered that their knowledge of the sea would help keep them safe (63% *v* 58%).

Table 9. *Fishers' Perceptions of Self-efficacy of Preventive Behaviours in Reducing Drowning Risk, 2006-2007*

Do you think that -	**2007 (*2006*)**	**Strongly agree/ Agree**		**Unsure**		**Strongly disagree/ Disagree**	
		n	***%***	***n***	***%***	***n***	***%***
10. My local knowledge of this site means I'm unlikely to get caught out	2007	62	55.4	25	22.3	25	22.4
	(2006)	*(127)*	*(50.4)*	*(46)*	*(18.4)*	*(73)*	*(29.2)*
11. My experience of the sea will keep me safe when rock fishing	2007	70	62.5	24	21.4	18	16.1
	(2006)	*(144)*	*(57.8)*	*(51)*	*(20.4)*	*(51)*	*(20.4)*
12. My swimming ability means I can get myself out of trouble	2007	54	48.2	33	29.5	25	22.4
	(2006)	*(110)*	*(44.0)*	*(56)*	*(22.4)*	*(80)*	*(32.0)*

However, this continued confidence in their supposed knowledge of the site and the sea is a cause for concern given that for one quarter (24%) of the 2007 respondents it was their first visit to the site (compared with 36% in 2006). In addition, Table 3 shows that two thirds (67%) of fishers had visited the site less than five times, very similar to the proportions found in 2006 (69%) which again suggests that many fishers are unlikely to be as knowledgeable about the site as they imagine themselves to be. Furthermore, the confidence of many fisher in the protective value of their knowledge of New Zealand sea conditions may also in question given that more than one third (37%) of the fishers had lived in New Zealand for less than 4 years (compared with 42% in 2006). It would appear that fishers' beliefs in the protective value of their local and general knowledge of site and sea have not changed in the intervening year. It is possible that overconfidence in their ability to identify hazards and manage the potentially dangerous conditions inherent at many of these high-risk sites may exacerbate their risk of drowning. Further emphasis in future fishing safety promotion on the dangers of underestimation of risk and overestimation of ability may help address these entrenched attitudes.

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 (83%) were most likely and Asian fishers (40%) least likely to consider that their local knowledge of the site would keep them safe. Similarly, fishers in the 30-44 years and 45+ years age groups were more likely than 16-29 year age group to agree that their local knowledge would keep them safe (71% and 57% compared with 39% respectively) (See Tables 4.3b, 4.3c and 4.3d, Appendix 2).

4.4 Water Safety Behaviours of Fishers

Fishers were asked to self-report previous water safety behaviours (see survey question 10, Appendix1) 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 Table10).

Table 10 shows the self-reported fishing behaviours in 2007 compared with 2006 results (italicized and in parentheses). 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 (2007, 53%; 2006, 72%) and more reporting wearing them *often* (2007, 15%; 2006, 4%). More fishers reported *never* turning their back to the sea (2007, 68%; 2006, 58%) and *always* taken a cell phone in case of emergencies (2007, 91%; 2006, 77%).

Table 10. *Fishers' Self-reported Water Safety Behaviours, 2006-2007*

When rock fishing, do you -	2007 (2006)	Never		Sometimes		Often	
		n	*%*	*n*	*%*	*n*	*%*
Wear a lifejacket or other flotation device	2007	59	52.7	36	32.1	17	15.2
	(2006)	*(180)*	*(72.0)*	*(58)*	*(23.2)*	*(11)*	*(4.4)*
Turn your back to the sea when fishing	2007	76	67.9	27	24.1	9	8.1
	(2006)	*(146)*	*(58.4)*	*(90)*	*(36.0)*	*(13)*	*(5.2)*
Wear gumboots or waders	2007	50	44.6	35	31.3	27	24.2
	(2006)	*(159)*	*(63.6)*	*(58)*	*(23.2)*	*(32)*	*(12.8)*
Drink alcohol when you are fishing	2007	76	67.9	26	23.2	10	8.9
	(2006)	*(200)*	*(80.0)*	*(39)*	*(15.6)*	*(10)*	*(4.0)*
Take a cell phone in case of emergencies	2007	8	7.1	11	9.8	92	91.0
	(2006)	*(24)*	*(9.6)*	*(33)*	*(13.2)*	*(192)*	*(76.6)*
Check weather/water conditions first	2007	8	7.1	18	16.1	86	76.8
	(2006)	*(11)*	*(4.4)*	*(40)*	*(16.0)*	*(198)*	*(79.6)*

Surprisingly, in the 2007 survey, more fishers reported *sometimes/often* wearing gumboots or waders (2007, 56%; 2006, 36%) and drinking alcohol when fishing (2007,

32%; 2006, 20%). Similar proportions reported that they *often/always* checked the weather water conditions beforehand (2007, 77%; 2006, 80%).

While the positive change in behaviour related to the use of flotation devices, one of the key safety messages of the 2006 fishing safety promotion, is gratifying for participating organisations, it is still a concern that more than half of fishers (53%) report *never* wearing any lifejacket/flotation aid. Clearly resistance to the use of lifejackets, even the inflatable type recommended in the previous study because of their less intrusive design than traditional lifejackets, is still endemic among the rock fishing community. 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.

Two other positive changes in safety behaviour that were key safety messages in the 2006 promotion, not turning your back to the sea and having a cell phone for use in emergencies, were also evident in responses in 2007. While more fishers (68%) reported never turning their back on the sea, it is a concern that one third (32%) report still *sometimes/often* engaging in this dangerous practice and further promotion of the dangers inherent in this at-risk behaviour need to continue. Almost all 2007 respondents (91%) reported *often/always* taking a cell phone with them as emergency equipment. Such a high response is especially important on Auckland's west coast because it implies increased access to emergency services when fishing at remote fishing sites.

Two safety behaviours that did not improve from 2006 to 2007 were those related to alcohol consumption and the wearing of gumboots or waders when fishing. Of particular concern is that one third (32%) of fishers in 2007 reported *sometimes/often* consuming alcohol when fishing. It is difficult to explain why these behaviours appear to be more prevalent and further research is required to verify or refute these findings. Whatever the reason for these apparent negative changes in fishing behaviour however, further promotional work on both potentially lethal practices would appear prudent.

4.5. Changes in Fishers' Knowledge, Attitudes and Behaviours in the previous year

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 year (see question 11, Appendix1). Table 11 shows that almost two thirds of fishers (63%) considered that their safety knowledge had improved in the past year, a small proportion (6%) thought that it had not improved and almost one third (30%) didn't know whether it had improved. The same proportion (63%) also considered that their safety attitudes had improved though some (9%) considered that their attitude had not improved. More than half (53%) of the respondents reported that their safety behaviour when fishing had improved whereas some fishers (15%) thought their behaviour had not improved.

Table 11. Self-Reported Changes in Fishers' Safety Knowledge, Attitudes and Behaviours

In the past year -	Agree		Disagree		Don't know		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Your rock fishing safety knowledge has improved?	71	63.4	7	6.3	34	30.4	112	100.0
Your rock fishing safety attitude has improved?	70	62.5	10	8.9	32	28.6	112	100.0
Your rock fishing safety behaviour has improved?	59	52.7	17	15.2	36	32.1	112	100.0
Your mates rock fishing behaviour has improved?	59	52.7	8	7.1	45	40.2	112	100.0
Other rock fishers behaviour has improved?	61	54.5	9	8.0	42	37.5	112	100.0

In order to ascertain if their 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 11 shows that more than half of participants thought that the safety behaviour of their mates (53%) or other fisher (55%) had improved.

When analysed by ethnicity, three quarters (78%) of fishers who self-identified as Pacific Islanders thought that their fishing safety knowledge had improved compared with European (69%), Maori (58%), and Asian (58%) fishers. They were also more likely to report that their safety behaviour (68%) and that of their mates (72%) when fishing had improved (See Table 4.5a Appendix 2). Asian fishers were less likely than others to report improvement in their behaviour (48%) or that of their mates (40%) or other fishers (40%). Among possible reasons for this lesser response is the possibility that the 2006-2007 fishing safety promotion may not have reached the Asian target audience as effectively as other ethnic groups that reported greater improvements in fishing safety knowledge, attitudes and behaviours.

When analysed by age group, fishers older than 45 years were less likely to report an improvement in knowledge than the younger 16-29 and 30-44 year age groups (36% compared with 67% for each of the younger groups respectively). They were also less likely to report improvements in their personal safety attitudes and behaviours (see Table 4.5b Appendix 2. The reasons for this lesser response among the older age group are difficult to ascertain. It may be that the older fishers already have high standards of safety practice; alternately it could suggest that they may be more reluctant to change ingrained unsafe habits and beliefs. Whatever the reason, continued emphasis on improving all fishers' knowledge, attitudes and behaviours in future promotion irrespective of age would seem prudent.

When analysed by length of residency, those with less than 4 years of residency were less likely than long-term residents (>5 years) to report improvement in personal fishing safety knowledge, attitudes and behaviours in the previous year They were also less likely to report improved safety behaviour of friends or other fishers (See Table 4.5c, Appendix 2). As was the case with those who self-identified as Asian, this lesser response from recent residents may suggest that greater effort is required to reach this important target audience on future safety promotion especially since they have been over-represented in recent fishing drowning statistics (Source: Water Safety New Zealand Drownbase™, 2006)

5. Recommendations

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

1. To the Auckland Regional Council (ARC):

- Retain the services of the safety advisers for a 2008 summer campaign in order to refine and reinforce the pilot project messages as well as to assess the ongoing effect of the programme on fisher's knowledge and behaviours.
- Explore ways of maintaining a fishing safety presence on the west coast beyond the third and final year of the pilot programme in 2008.
- Maintain a regional leadership role in the collaborative venture by allocating funds to support future fishing safety promotion, 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 completion of the pilot project in 2008 and work collaboratively with all partners to ascertain best practice for ongoing West Coast fishing safety education beyond 2008.
- 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 advisers and lifeguards in their efforts to make your rock fishing a safe and happy experience without undue risk for all concerned.

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9. Appendix

9.1 Appendix 1 - The survey questionnaire

9.2 Appendix 2 – Additional frequency tables

Rock-Fishing in Auckland: Follow-up Study 2007

In 2005-06, 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 dangers of rock fishing 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.

1. Did you take part in the Auckland west coast rock-fishing project last season?

o Yes o No

*If **Yes**, do you think the pilot project was:*

- o Highly successful
- o Successful
- o Slightly successful
- o Not successful
- o Don't know

2. Are you aware of the current rock fishing safety promotion in Auckland/

o Yes o No

If **Yes**, how do you know about it?

- o Radio
- o Television
- o Rock fishing advisors
- o Newspapers
- o Magazines
- o Retail outlets (fishing shops, gas stations etc)
- o Other _____

3. *Are you?*

o Male o Female

4. *How old are you?*

- o 15-19 years
- o 20-29 years
- o 30-44 years
- o 45-64 years
- o 65+years

5. *How would you best describe yourself?*

- o European New Zealander
- o Maori
- o Pasifika
- o Chinese/Taiwanese
- o Korean
- o Indian
- o Other, _____

6. *How long have you lived in New Zealand?*

- o Less than 1 year
- o Between 1-4 years
- o Between 5-9 years
- o More than 10 years
- o All my life

7. How often have you fished at <u>this location</u> in the past year?

- o This my first time
- o Between 2-5 times
- o Between 6-10 times
- o Between 11-20 times
- o More than 20 times

8. Where else have you fished from rocks in the past year?

_____
_____
_____
_____

(PLEASE TURN OVER)

9. 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	o	o	o	o	o
2 - Rock fishing is no more risky than other water activities	o	o	o	o	o
3 –Drowning is a constant threat to my life when rock fishing	o	o	o	o	o
4 - I am not concerned about the risks of rock fishing	o	o	o	o	o
5 - Other fishers are at greater risk of drowning than me	o	o	o	o	o
6 - I am a strong swimmer compared with most other people	o	o	o	o	o
7 – I avoid fishing in bad conditions to reduce the risk of drowning	o	o	o	o	o
8 - Always wearing a lifejacket makes rock fishing a lot safer	o	o	o	o	o
9 - Turning my back to the waves when rock-fishing is very dangerous	o	o	o	o	o
10 - My local knowledge of this site means I'm unlikely to get caught out	o	o	o	o	o
11 - My experience of the sea will keep me safe when rock fishing	o	o	o	o	o
12 - My swimming ability means I can get myself out of trouble	o	o	o	o	o

10. When rock fishing, do you –	Never	Sometimes	Often	Always
1 wear a lifejacket/buoyancy aid	o	o	o	o
2 check weather forecast beforehand	o	o	o	o
3 drink alcohol when fishing	o	o	o	o
4 wear gumboots or waders	o	o	o	o
5 turn your back on the sea	o	o	o	o
6 take a cell phone in case of emergencies	o	o	o	o

11. Finally, do you believe that:	Agree	Disagree	Don't know
1 My knowledge of rock fishing safety has improved in the past year	o	o	o
2 My practice of rock fishing safety has improved in the past year	o	o	o
3 My attitudes towards rock fishing safety have improved in the past year	o	o	o
4 My rock fishing mates seem more safety conscious in the past year	o	o	o
5 Other rock fishers around me seem more safety conscious in the past year	o	o	o

Thank you for taking part in the survey, please return this form to the researcher

9.2. Appendix 2: Additional Tables of Results

Question 9. Fishers perceptions of risk of drowning

(See Section 4.3 of the Key Findings)

Table 4.3a. *Fishers' Perceptions of risk of drowning when fishing from rocks*

(See statements 1-3 in Question 9, Appendix 1 - Survey Questionnaire)

Do you think that -	Strongly agree/ Agree		Unsure		Strongly disagree/ Disagree	
	n	*%*	*n*	*%*	*n*	*%*
1. Getting swept off the rocks is likely to result in my drowning	83	74.1	12	10.7	17	15.2
2. Rock fishing is no more risky than other water activities	37	33.1	31	27.7	44	39.3
3. Drowning is a constant threat to my life when rock fishing	75	66.9	18	16.1	19	17.0
4. I am not concerned about the risks of rock fishing	36	32.2	10	8.9	66	58.9
5. Others rock fishers are at greater risk of drowning than me	52	46.5	34	30.4	26	23.2
6. I am a strong swimmer compared with most other people	50	44.6	33	29.5	29	25.9
7. I avoid fishing in bad conditions to reduce the risk of drowning	95	84.8	10	8.9	7	6.3
8. Always wearing a lifejacket makes fishing a lot safer	89	79.5	16	14.3	7	6.3
9. Turning my back to the waves when rock fishing is very dangerous	97	86.6	11	9.8	4	3.6
10. My local knowledge of this site means I'm unlikely to get caught out	62	55.4	25	22.3	25	22.4
11. My experience of the sea will keep me safe when rock fishing	70	62.5	24	21.4	18	16.1
12. My swimming ability means I can get myself out of trouble	54	48.2	33	29.5	25	22.4

Table 4.3b. *Fishers' Perceptions of Drowning Risk 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/%*
Getting swept off the rocks is likely to result in my drowning	18 69.2	5 41.7	12 66.7	45 86.5	3 75.0	5 19.2	6 50.0	2 11.1	4 7.7	0
Rock fishing is no more risky than other water activities	11 42.3	7 58.3	6 33.3	11 21.2	2 50.0	9 34.6	4 33.3	4 22.2	27 51.9	0
Drowning is a constant threat to my life when rock fishing	19 73.1	5 41.7	12 66.7	36 69.2	3 75.0	3 11.5	6 50.0	2 11.1	7 13.5	1 25.0
I am not concerned about the risks of rock fishing	8 30.8	7 58.3	8 44.4	11 21.1	2 50.0	16 48.1	3 25.0	10 55.5	35 67.3	2 50.0
Others rock fishers are at greater risk of drowning than me	16 61.5	8 66.7	13 72.2	15 28.8	0	5 19.2	2 16.7	3 16.7	15 28.8	1 25.0
I am a strong swimmer compared with most other people	14 53.8	8 66.7	9 50.0	17 32.7	2 50.0	5 19.2	0	5 27.8	17 32.7	2 50.0
I avoid fishing in bad conditions to reduce the risk of drowning	21 80.8	9 75.0	16 88.9	47 90.4	2 50.0	4 15.4	2 16.7	1 5.6	0	0
Always wearing a lifejacket makes fishing a lot safer	16 61.5	9 75.0	15 83.3	46 88.5	3 75.0	3 11.5	0	0	4 7.7	0
Turning my back to the waves when rock fishing is very dangerous	22 84.6	9 75.0	18 100.0	45 86.5	3 75.0	0	2 16.7	0	1 1.9	1 25.0
My local knowledge of this site means I'm unlikely to get caught out	18 69.2	10 83.3	12 66.7	21 40.4	1 25.0	6 23.1	0	0	18 34.6	1 25.0
My experience of the sea will keep me safe when rock fishing	18 69.2	9 75.0	16 88.9	25 48.1	2 50.0	4 15.4	1 8.3	0	12 23.1	1 25.0
My swimming ability means I can get myself out of trouble	18 69.2	7 58.3	12 66.7	14 26.9	3 75.0	5 19.2	0	1 5.5	18 34.6	1 25.0

Note: *Unsure* responses not included

Table 4.3c. *Fishers' Perceptions of Drowning Risk by Age Group*

Do you think that -	Strongly agree/agree			Strongly disagree/disagree		
	16-29 yrs *n/%*	30-44 yrs *n/%*	45yrs+ *n/%*	16-29 yrs *n/%*	30-44 yrs *n/%*	45yrs+ *n/%*
Getting swept off the rocks is likely to result in my drowning	34 69.4	39 79.6	10 71.4	10 20.4	6 12.2	1 7.1
Rock fishing is no more risky than other water activities	18 36.7	16 32.7	3 21.4	20 40.8	21 42.9	3 21.4
Drowning is a constant threat to my life when rock fishing	32 65.3	35 71.4	8 57.1	9 18.4	6 12.2	4 28.6
I am not concerned about the risks of rock fishing	14 28.6	16 32.7	6 42.9	31 63.3	29 59.2	6 42.9
Others rock fishers are at greater risk of drowning than me	20 40.8	27 55.1	5 35.7	17 34.7	7 14.3	2 14.3
I am a strong swimmer compared with most other people	21 42.9	24 49.0	5 35.7	14 28.6	12 24.5	3 21.4
I avoid fishing in bad conditions to reduce the risk of drowning	39 79.6	44 89.8	12 85.7	5 10.2	0	2 14.3
Always wearing a lifejacket makes fishing a lot safer	38 77.6	43 87.8	8 51.1	4 8.2	1 2.0	2 14.3
Turning my back to the waves when rock fishing is very dangerous	45 91.8	41 83.7	11 78.6	0	0	2 14.3
My local knowledge of this site means I'm unlikely to get caught out	19 38.8	35 71.4	8 57.1	16 38.8	8 16.3	1 7.1
My experience of the sea will keep me safe when rock fishing	24 49.0	36 73.5	10 71.4	12 24.5	4 8.2	2 14.3
My swimming ability means I can get myself out of trouble	23 46.9	26 53.1	5 35.7	14 28.6	10 20.4	1 7.1

Note: *Unsure* responses not included

Table 4.3d. *Fishers' Perceptions of Drowning Risk by Length of Residency*

Do you think that -	Strongly agree/agree			Strongly disagree/disagree		
	< 4 yrs *n/%*	5-9 yrs *n/%*	10yrs+ *n/%*	< 4 yrs *n/%*	5-9 yrs *n/%*	10yrs+ *n/%*
Getting swept off the rocks is likely to result in my drowning	35 85.4	6 60.0	42 68.9	4 9.8	2 20.0	13 21.3
Rock fishing is no more risky than other water activities	10 24.4	5 50.0	22 36.1	18 43.9	3 30.0	23 37.7
Drowning is a constant threat to my life when rock fishing	26 63.4	8 80.0	41 67.2	7 17.1	1 10.0	11 18.0
I am not concerned about the risks of rock fishing	11 26.8	3 30.0	22 36.1	25 61.0	7 70.0	34 55.7
Others rock fishers are at greater risk of drowning than me	11 26.8	5 50.0	36 59.0	11 26.8	3 30.0	12 19.7
I am a strong swimmer compared with most other people	16 39.0	3 30.0	31 50.8	13 31.7	3 30.0	13 21.1
I avoid fishing in bad conditions to reduce the risk of drowning	35 85.4	10 100.0	50 82.0	0	0	7 11.5
Always wearing a lifejacket makes fishing a lot safer	38 92.7	8 80.0	43 70.5	2 4.9	1 10.0	4 6.6
Turning my back to the waves when rock fishing is very dangerous	34 82.9	9 90.0	54 88.5	2 4.9	0	2 3.3
My local knowledge of this site means I'm unlikely to get caught out	15 36.6	8 80.0	39 63.4	15 36.6	1 10.0	9 14.8
My experience of the sea will keep me safe when rock fishing	18 43.9	9 90.0	43 70.5	11 26.8	0	7 11.5
My swimming ability means I can get myself out of trouble	13 31.7	3 30.0	38 62.3	14 34.1	2 20.0	9 14.8

Notes: *Unsure* responses not included

Question 10. Self-reported behaviours of fishers

(See Section 4.4 of the Key Findings)

Table 4.4a. *Water Safety Behaviours of Fishers*

When rock fishing, do you	Never		Sometimes		Often		Always	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Wear a lifejacket or other flotation device	59	52.7	36	32.1	16	14.3	1	0.9
Turn your back to the sea when fishing	76	67.9	27	24.1	6	5.4	3	2.7
Wear gumboots or wader	50	44.6	35	31.3	21	18.8	6	5.4
Drink alcohol when you are fishing	76	67.9	26	23.2	8	7.1	2	1.8
Take a cell phone in case of emergencies	8	7.1	11	9.8	22	19.6	70	62.5
Check weather/water conditions first	8	7.1	18	16.1	34	30.4	52	46.4

Table 4.4b. *Water Safety Behaviours of Fishers by Ethnicity*

When rock fishing, do you –	Never					Sometimes					Often				
	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	9 34.6	7 58.0	12 66.7	28 53.9	3 75.0	12 46.2	3 25.0	6 33.3	14 26.9	1 25.0	5 19.2	2 16.7	0 0.0	10 19.2	0 0.0
Turn your back to the sea when fishing	16 61. 4	7 58.3	12 66.7	38 73.1	3 75.0	6 23.1	4 33.3	4 22.2	12 23.1	1 25.0	4 15.4	1 8.3	2 11.1	2 3.8	0 0.0
Wear gumboots or waders	17 65.4	3 25.0	3 16.7	26 50.0	1 25.0	5 19.2	6 50.0	6 36.7	17 32.7	1 25.0	4 15.4	3 25.0	9 50.0	9 17.3	2 50.0
Drink alcohol when you are fishing	13 50.0	3 25.0	14 77.8	43 82.7	3 75.0	8 30.8	5 41.7	4 22.2	8 15.4	3 75.0	5 19.2	4 33.3	0 0.0	1 1.9	0 0.0
Take a cell phone in case of emergencies	1 3.8	1 8.3	3 16.7	3 5.8	0 0.0	2 3.8	0 0.0	4 22.2	5 9.6	0 0.0	23 88.5	11 83.3	11 61.1	43 82.7	4 100.0
Check weather/water conditions first s	1 3.9	1 8.3	0 0.0	5 9.6	1 25.0	6 23.1	0 0.0	3 16.7	9 17.3	0 0.0	19 73.1	11 91.7	15 83.3	38 73.1	3 75.0

Table 4.4c. *Water Safety Behaviours of Fishers by Age Group*

When rock fishing, do you –	Never			Sometimes			Often		
	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	24 49.0	26 53.1	8 57.1	16 32.7	14 28.6	6 42.9	8 16.3	9 18.4	0
Check weather/water conditions first	6 12.2	2 4.1	0	9 18.4	6 12.2	3 21.4	34 69.4	41 83.7	11 78.6
Drink alcohol when you are fishing	36 73.5	30 61.2	10 71.4	6 12.2	17 34.7	3 21.4	7 14.3	2 4.1	1 7.1
Wear gumboots or waders	26 53.1	20 40.8	4 28.6	10 20.4	19 38.8	6 42.9	13 26.5	10 20.4	4 28.6
Turn your back to the sea when fishing	34 69.4	33 67.3	9 64.3	11 22.4	13 26.5	3 21.4	4 8.2	3 6.1	2 14.3
Take a cell phone in case of emergencies	3 6.1	2 4.1	3 21.4	3 21.4	6 12.2	2 14.3	43 87.8	41 83.7	9 64.3

Table 4.4d. *Water Safety Behaviours of Fishers by Length of Residency*

When rock fishing, do you –	Never			Sometimes			Often		
	< 4 yrs	5-9 yrs	0yrs+	< 4 yrs	5-9 yrs	0yrs+	< 4 yrs	5-9 yrs	0yrs+
	n/%	*n/%*	*n/%*	*n/%*	*n/%*	*n/%*	*n/%*	*n/%*	*n/%*
Wear a lifejacket or other flotation device	22 53.7	7 70.0	30 49.2	13 31.7	1 10.0	22 36.1	6 14.6	2 20.0	9 14.6
Check weather/water conditions first	6 14.6	0	2 3.3	6 14.6	0	12 19.7	29 70.7	6 60.0	47 77.1
Drink alcohol when you are fishing	35 85.4	8 80.0	33 54.1	5 12.2	2 20.0	19 31.1	1 2.4	0	9 14.8
Wear gumboots or waders	20 48.8	4 40.0	26 42.6	13 31.7	2 20.0	20 32.8	8 19.8	4 40.0	15 24.6
Turn your back to the sea when fishing	27 65.9	7 70.0	42 68.9	12 29.3	2 20.0	13 21.3	2 4.9	1 10.0	6 9.8
Take a cell phone in case of emergencies	3 7.3	1 10.0	4 6.6	3 7.3	0	8 13.1	35 85.3	9 90.0	49 80.3

Question 11. Perceived Changes in Water Safety Knowledge, Attitudes and Behaviours in the Previous Year

(See Section 4.5 of the Key Findings)

Table 4.5a. *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?	18 69.2	7 58.3	14 77.8	30 57.7	2 50.0	71 63.4
Your rock fishing safety attitude has improved?	18 69.2	7 58.3	13 72.2	29 55.8	3 75.0	70 62.5
Your rock fishing safety behaviour has improved?	14 53.8	6 50.0	12 66.7	25 48.1	2 50.0	59 52.7
Your mates rock fishing behaviour has improved?	17 65.4	5 41.7	13 72.2	21 40.4	3 75.0	59 52.7
Other fishers behaviour has improved?	18 69.2	7 58.3	12 66.7	21 40.4	3 75.0	61 54.5

Table 4.5b. *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?	33 67.3	33 67.3	5 35.7	71 63.4
Your rock fishing safety attitude has improved?	31 63.3	33 67.3	6 42.9	59 52.7
Your rock fishing safety behaviour has improved?	25 51.0	30 61.2	4 28.6	59 52.7
Your mates rock fishing behaviour has improved?	28 57.1	23 46.9	8 57.1	59 52.7
Other rock fishers behaviour has improved?	23 46.9	29 59.2	9 64.3	61 54.5

Table 4.5c. *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** ***n*/%**	**5-9 years** ***n*/%**	**10 years+** ***n*/%**	**Total** ***n*/%**
Your rock fishing safety	21	9	41	71
knowledge has improved?	61.8	90.0	67.2	63.4
Your rock fishing safety	19	8	43	70
attitude has improved?	55.9	80.0	70.5	62.5
Your rock fishing safety	17	8	34	59
behaviour has improved?	50.0	80.0	55.7	52.7
Your mates rock fishing	16	7	36	59
behaviour has improved?	47.1	70.0	59.0	52.7
Other rock fishers	17	7	37	61
behaviour has improved?	50.0	70.0	60.7	54.5