West Coast Rock-Based Fisher Safety Project 2017

Preface and Acknowledgements

This report is an evaluation of the 2017 West Coast Rock-Based Fishers Project developed by the Auckland Council, Surf Life Saving Northern Region (SLSNR), and WaterSafe Auckland Incorporated (WAI). It reports on the 12th year of the Project during which time many people have been involved in supporting and promoting water safety to prevent drowning. As in previous years, many people have given their time and energy both in a work and volunteer capacity to promote safety among our west coast rock-based fishing community.

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

The project would not have been possible without the enthusiasm and skills of Reg Phillips, Auckland Council; Adam Wooler, Chase Cahalane, Sarah Mortimer and Claire Cotter of Surf Life Saving Northern Region; and James Lea and Harry Aonga, WaterSafe Auckland. Stuart Leighton, Auckland Council Park Ranger should yet again be recognised for his outstanding commitment and leadership of the project in the field.

Finally, a very special vote of thanks to the lifeguards, Nikolai Gordon and Ian Rhodes. Their contribution as public fishing safety advisors, data gatherers and frontline proponents of the Project make their contribution to the success of this collaboration especially significant.

Report authored by:
Dr Kevin Moran, 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 (t/a Drowning Prevention Auckland)
PO Box 147566, Ponsonby, Auckland 1144
Ph 09 376 5114

Further copy of the report is available in PDF format on the WaterSafe Auckland website under Community/Research/ Rock Fishing at: Available in PDF format at:
http://www.watersafe.org.nz/family-communities/research-and-information/rock-fishing/

Executive Summary

1. Background

This is the twelfth year of the *West Coast Rock-based Fisher Safety Project*, a collaborative intervention by the Auckland Council, WaterSafe Auckland Inc. (WAI), and Surf Life Saving Northern Region (SLSNR). This report provides information on the impact of the intervention aimed at reducing rock-based fishing fatalities and promoting a safety culture among this high risk group of aquatic recreationalists.

2. Purpose

The purposes of this twelfth year 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,
3) To make recommendations for future rock fishing safety promotion based on the information obtained in the survey conducted during the 2017-18 season.

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 2017. For 2017, all survey data was gathered online via an electronic version of the survey (first trialled in 2014) for on-site completion. A total sample of 200 fishers voluntarily completed the electronic survey. The survey sought information on participation in previous surveys, awareness of the current fishing safety promotion, awareness of west coast angel rings as public rescue equipment (PRE), and perceptions of fishing dangers and their capacity to manage associated risk when fishing from rocks on Auckland's west coast.

4. Key Findings

4.1 Participant demographics:

- The sample was predominantly male (males 91%) and half (50%) were aged between 20-44 years.
- Proportionally more Asian peoples (67%) and Pasifika peoples (13%) completed the survey, proportionally less European (16%) and Maori (4%) New Zealanders took part.
- One quarter (25%) had lived in New Zealand all their lives, one fifth (18%) were of recent residency (<4 years).

- For one third (33%) of the fishers, it was their first visit to the site where surveyed, although familiarity with the site continued to increase over previous years with almost one fifth (19%) having visited the site >20 times.
- The reason most fishers gave for fishing on the day of interview was fun and enjoyment (78%), 16% reported the reason was to be with friends, 7% said it was to feed the family or have a day out from work/home (7%).

4.2 Awareness of the West Coast Rock-based Fisher Safety Project

- One quarter of fishers (25%) reported that they were aware of previous west coast fisher safety projects (2016, 36%).
- Of these, most fishers (60%) thought that the campaign had been successful, 19% thought it highly successful, and 21% felt it had been slightly successful.
- Almost half (45%) were aware of the current 2017 Project (2016, 20%).
- Of these, many (44%) identified the fishing advisors as their source of information. Other sources included radio (17%), TV (14%), newspapers (11%), magazines (7%) and other sources (such as retail outlets and internet, 7%).

4.3. Public Rescue equipment (PREs) – angel rings, throw bags etc

- Most fishers (62%) had seen the on-site angel rings (2016, 87%).
- Almost one half (45%) of fishers had read the instructions on how to use the angel rings (2016, 26%).
- Most fishers (76%) thought that they could use the angel rings in an emergency (2016, 74%).

4.4. Perceptions of Drowning Risk

- Most fishers (75%) agreed that getting swept off rocks was likely to result in their drowning (2016, 22% agreed).
- Most fishers (57%) agreed that drowning was a constant threat when fishing from rocks on the west coast of Auckland (2016, 14% agreed).
- Almost one third (30%) thought that other fishers were at greater risk than themselves; 43% considered that they were strong swimmers compared with others (2016, 43% and 46% respectively).
- Most fishers (87%) agreed that wearing a lifejacket made rock-based fishing safer (2016, 63% agreed).
- Most (89%) avoided fishing in bad weather (2016, 93% agreed).
- Most (90%) thought that turning their backs to the sea was very dangerous (2016, 69% agreed).
- Many fishers (38%) thought that their swimming proficiency would get them out of trouble (2016, 76% agreed).

- Most fishers (54%) thought that their local knowledge of the site would keep them out of trouble (2016, 78% agreed).
- Most fishers (62%) thought that their experience of the sea would keep them safe when fishing from rocks (2016, 86% agreed).

4.5. Water Safety Behaviours of Fishers

- One quarter (24%) reported *often/always* wearing a life-jacket/buoyancy aid (2016, 24%).
- Fewer fishers (37%) reported *never* wearing any life jacket/buoyancy aid (2016, 65%), more did *sometimes* (2017, 41%: 2016, 11%)
- Most fishers (84%) reported *never* consuming alcohol when fishing (2016, 84%)
- One half (51%) reported *sometimes/often* wearing gumboots/waders, one half (50%) reported *sometimes/often* going down rocks to retrieve snagged lines (2016, 31% and 50% respectively).

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

- Most fishers (79%) considered that their safety knowledge had improved in the past year (2016, 90% agreed).
- Most fishers (88%) considered that their safety attitudes had improved (2016, 84% agreed).
- Most fishers (91%) of the fishers thought that their safety behaviour when fishing had improved (2016, 83% agreed).
- Most fishers thought that the safety behaviour of their mates (63%) or other fishers (50%) had improved (2016, 75% and 75% respectively agreed).

TAKE AWAY POINTS

- **Drowning fatalities have reduced to less than 1 per annum since the inception of the fisher safety project**
- **Fishing populations continues to be transient, culturally and linguistically diverse**
- **Changes in attitudes and behaviours with regard to lifejacket use are a cause for concern**
- **Other risky behaviours (such as wearing gumboots, retrieving lines) are still proving resistant to change**

6. Land-Based Fishing Safety Promotion Report – 2016-2017

Background

The land-based fishing programme targets rock, net and crab fishers who are of Asian, Pacific and Maori ethnicities as they are identified as at-risk groups for drowning when doing these types of activities. This project is a collaborative initiative with Surf Lifesaving Northern and Auckland Council who provide advice and guidance with their extensive knowledge in this field. The aim of the programme is to educate these population groups on the importance of wearing a lifejacket and to up-skill them on specific areas of water competence relating to land-based fishing.

Target Groups: Asian, Pacific and Maori.

Programme

This programme involves three main land-based fishing activities which is net fishing, crab fishing and rock fishing. WaterSafe Auckland's (WAI) role within the project is predominantly delivery based with the goal of increasing education and awareness of safer fishing on land using a number of activities such as practical workshops, educational seminars, radio and television appearances, presentations and events to ensure that these targeted groups are getting these key messages.

Lifejacket giveaways and an assortment of prizes were used to help promote the key message of 'always wear a lifejacket' at events, seminars and workshops. The Michael Jones Rock Fishing Safety brochure is in the 'redevelopment' stage as we look to updating this resource with a whole new look to help further promote safer fishing.

Surf Lifesaving Northern have the primary role of surveying rock fisherman out at Auckland's West Coast Beaches which is evaluated yearly with recommendations used, to help any future planning to improve the programme.

Auckland Council have been providing the bulk of funding for this proje
with important roles in identifying new sites for safety signage and ang
rings.

Results

The number of direct contacts made is 5571 for the year ending 2016-2017. The numbers were achieved through these 7 activities;

- **Rock Fishing Surveys** – 211 contacts
- **Personal Development Training** – Completed by Surf lifeguards = 4 contacts
- **Practical Workshops** – A total of 5 workshops were completed at Muriwai x 2, Whangaparoa Peninsula, Kawakawa Bay, Uretiti Beach = 175 contacts
- **Educational Seminars** – A total of 3 seminars completed at WAI - Westhaven Marina, Muriwai, Church of Tonga – Mangere = 253 contacts
- **Radio and Television** – 531 PI, Greenstone Media, Chinese World TV, New Zealand Herald
- **Presentations** – A total of 36 presentations - Puataunofo, Department of Corrections, Wai Wise, Wai Turama = 608 contacts
- **Events** – 29 attended within the Auckland region = 4320 contacts

Conclusion

The land-based fishing programme continues to be successful with the recent implementation of practical workshops and seminars which have been effective in reaching these at-risk groups. The partnership between Auckland Council, Surf Lifesaving Northern Region and WAI highlights the importance of collaboration, allowing each organisation to provide their expertise in helping to deliver a quality programme.

Report compiled by – Harry Aonga

7. 2016-17 Media

Simon Plumb, New Zealand Herald, page A13, Saturday 29th Oct 2016

Lucky escape from rogue wave drives safety message home

Simon Plumb

Life jackets should be worn when fishing from rocks, warns Water Safety New Zealand after a disturbing series of images showing someone being swept off their feet by a crashing wave.

Photographs taken at Muriwai Beach this month show one man narrowly escaping being swept into the sea at the west coast beach. Knocked off his feet, the man is helped to safety by a fellow fisherman who spots the danger.

Water Safety NZ chief executive Jonty Mills says the images are a stark reminder about the risks of rock fishing – a growing cause of safety concern on top of New Zealand's already poor drowning statistics.

"These photographs show how potentially dangerous and unpredictable rock fishing can be so people need to be aware of the conditions and make wise decisions," Mills said.

"We encourage all people rock fishing to wear life jackets or some kind of buoyancy jacket. Stay alert to the changing conditions, never fish alone and don't turn your back on the sea.

"It's an increasing concern as more people are participating in rock fishing, particularly in the Auckland region, and often they're not familiar with the conditions."

The images were taken by Bryce Bedford who feared he was about to witness the man being swept out to sea.

"The photographs show the guy completely knocked off his feet and actually going for a ride," Bedford said.

"I couldn't believe it, I thought I was about to watch something really bad. There's actually a sign on site saying be careful and warning people have died there."

The Muriwai rock fisherman disappears in a sea of foam as a wave knocks him off his feet. Picture / Bryce Bedford

Annual Water Safety NZ statistics show more 23 more people died last year than in 2014. There were 113 lives lost, a 26 per cent increase in deaths and well above the annual average over the previous five years of 103.

Mills says the majority of incidents would have been preventable, if only people followed basic guidelines.

"New Zealand has very high participation rates across a wide range of water-based activities. It's a big part of our culture and we want all New Zealanders to enjoy the water this summer," he said.

"We also want everyone to be aware of the risks and unpredictability and also know their own limits. Everyone should be able to come home to their families at the end of a day enjoying the water, whether it be the sea, a river, a lake or a pool.

"We know from the research and data that most drownings are preventable and that's our focus – to get the messages through.

"We are running a summer campaign targeted at the highest risk group of younger males. The wider sector is also running campaigns targeting boaties and fisherman and the supervision of kids."

Photos: Sequential shots of a Muriwai fisher being assisted to safety after he "disappears in a sea of foam as a wave knocks him off his feet"

 1 Sweep washes over the rock shelf	 2 Fisher in orange anorak swept off feet
 3 Submerged, he collides with another fisher, who grabs hold and hangs on	 4 Wave recedes, they retreat to safety and stop fishing, time taken 3-5 seconds

Pictures: Bryce Bedford

8. RECOMMENDATIONS

On the basis of the findings, it is recommended that:

1. **Auckland Council:**

- Retain the services of the safety advisors for a 2017/18 summer campaign
- Continue to provide regional leadership and support future fishing safety promotion, including the installation of angel rings and safety signage at high risk sites.

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

- The continued high profiling of lifejacket use seems necessary in case the slippage in attitudes and behaviours reported here and in the previous year are more than a temporary trend.
- Commit resources and personnel to the ongoing work collaboratively with all partners to promote best practice for West Coast fishing safety education beyond 2016-7.

3. **Recreational fishers, fishing organizations, lifejacket retailers, fishing outlets:**

- Adopt and endorse the fishing safety messages promoted by the 2017 West Coast Rock-based Fisher Safety Project.
- Encourage others in the rock fishing community to adopt safe practices - **especially the wearing of 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.
- Advocate for the promotion of rock fishing safety with community groups especially those that are identified high-risk including new migrants, Pasifika and Asian peoples.

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1. Background

The following extract is taken from the abstract of a presentation to be given at the *World Conference on Drowning*, Vancouver, 17-19th October, 2017. It provides a succinct summary of what has transpired in previous years of the *West Coast Rock-Based Fisher Project*. The published papers on the Project are available via the links in the references below, copies of annual reports are available on the WaterSafe Auckland website at:

http://www.watersafe.org.nz/family-communities/research-and-information/rock-fishing/

Summary

In the 11 years from 2006 - 2016, 7% of all New Zealand drowning fatalities were the consequence of land-based fishing activity. In 2006, a rock-based fisher safety campaign was launched on the west coast of Auckland to combat a spate of surf-related fisher drowning incidents. Findings of the initial survey and the first five years of the study (2006-2011) have been previously reported.[1,2]

Aims /Objectives

The aims of this presentation are:

1. *To report on a decade of safety promotion that has focussed on rock-based fishers understanding and practice of water safety principles, and*
2. *To ascertain whether any positive attitudinal or behavioural changes have been effected.*

Target Group

The target group were fishers engaged in recreational land-based fishing from the rocky foreshore of Auckland's west coast, a region of high risk because of its isolation, its exposure to strong surf, and changeable weather, water and tidal conditions.

Method

A cross sectional study was undertaken at the end of each summer safety campaign at high risk fishing sites on Auckland's rugged west coast - a coastline within 30km of metropolitan Auckland's city centre. Participants in the annual surveys were either fishing at the chosen sites or in transit to and from the site. The annual surveys were anonymous, designed to be completed on site, and take a maximum of 10 minutes to complete. The questionnaire was produced in English, Mandarin and Korean. The survey data gathering took place during the summer season and included several peak holiday weekdays and weekends.

Results

The results of the successive years (2016-2016) suggest that, while transience and diversity in the population are still characteristics that make them a difficult group to target with safety education messages, several changes in their demographic composition have taken place, notably greater frequency of visits to the site where surveyed. Fishers were predominantly of Asian ethnicity (52%), male (91%) and most (51%) were aged between 30-44 years. In 2015, 43% of fishers reported never wearing a lifejacket. In 2006, almost three quarters (72%) of fishers never wore a lifejacket (2015, 43%) and only a small proportion (4%) often/always wore one (in 2015, 40%).

Discussion

This study is unique in drowning prevention literature in that it has been able to report on the impact of a safety intervention annually over 10 years since its inception. Initial emphasis on finding out what fishers knew, thought and did about safety has been able to shift safety messages in a reflexive way to influence behaviours most likely to put fishers at risk of drowning. Some messages (such as the wearing of lifejackets) have been persistent, dominant, and worthy of perseverance. Other messages (such as not going down the rocks to retrieve a snagged line) have appeared more resistant to change.

Conclusion

Trends reported in this decade-long study suggest that improvements in some attitudes and behaviours, notably the wearing of lifejackets, has had a beneficial effect on fisher safety and a reduction in drowning fatalities. Continued ways of improving fisher safety are discussed.

References

1. Moran, K. (2008). Rock fishers' practice and perception of water safety. *International Journal of Aquatic Research and Education*, *2*(2), 128-139. Available at: http://scholarworks.bgsu.edu/cgi/viewcontent.cgi?article=1243&context=ijarehttp://scholarworks.bgsu.edu/cgi/viewcontent.cgi?article=1243&context=ijare
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"Most importantly, the decade from 2006-2015 has seen a reduction in fisher drowning fatalities on Auckland's west coast to less than one per annum. In addition, many rescues have been recorded where victims survived and victim and rescuer have both attributed survival to the wearing of lifejackets and other safety initiatives (such as the availability of angel rings at high risk sites) that have been the focus of the Project. The return on investment for participating organisations has been gratifying and encouraging - the return to home safely for rock-based fishers over the past decade is beyond measure".
(Moran 2017, p. 12)

2. Purpose and Outcomes of the Study

2.1 Purpose

The purposes of this twelfth year 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 in the survey conducted during the 2016-17 season.

2.2 Outcomes

The specific outcomes of this Report are:

1. Ascertain the effect of on-site rock fishing safety promotion during the summer months of 2016-17,
2. Survey fishers to find out 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 flotation devices currently located 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

Overview

While the many of the methods employed for conducting the survey have not changed over the duration of the Project since 2006, in the past two years the method of data collection, in keeping with changes in technology has changed. Prior to 2015, all data was collected via self-compete written questionnaires initially in English language only and from 2007 in English, Mandarin, and Korean to reflect the preferred language of many participants. In 2014, electronic tablets were used with e-copy of the questionnaire in the English language only. This has facilitated the onsite completion of the survey at more remote locations. It is too early to determine whether this methodological change has influenced trends in responses but for the purpose of this report, only data from the previous season (2015-16) will be compared with the current findings (2016-17). Trend lines are included in the main text where relevant to the discussion and bar graphs for data for the entire duration of the Project (2006-17) are included in Appendix 2.

3.1 Procedures

As in previous years, 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 (angling) but also included those who 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 survey was made to all adult fishers over 16 years of age.

As was the case in the previous season, the data gathering took place using a Survey Gizmo e-questionnaire and I-pads, first trialled in 2014. The 2016-17 data was gathered using only electronic surveys via a tablet, hard copy of the surveys (which had been available in English, Cantonese, and Korean) were not used which meant that those with English as a second language may have been compromised in their ability to respond to the survey. It is possible that any bias in responses because of this need to be considered in the interim phase of change in data gathering methodology, and must

be borne in mind when extrapolating data and making comparisons with previous findings that were collected using conventional written questionnaire surveys.

The data gathering took place during December 2016 and March 2017 and included several peak holiday weekdays and weekends. The sample did not include fishers who used the sites at times outside 'peak' hours (such as night fishing) or fishers who frequented other high-risk west coast locations. The sites chosen included popular, high risk west coast fishing sites at Muriwai, Piha, Karekare (including Whites Beach), Bethells (including O'Neill Beach and Te Henga), and Whatipu (including Anawhata, Huia and Nine Pin Rock) (See Table 1).

Table 1. Survey sites, Dec 2016- March 2017

Fishing location where interviewed	***n***	***%***
Muriwai	32	15.2%
Bethells beach (including O'Neill Beach, Te Henga)	96	45.5%
Piha Beach (North and South, Whites Beach, Anawhata)	21	10.0%
Whatipu (including Ninepin, Huia)	28	13.3%
Karekare	20	9.5%
Other (not specified)*	14	6.7%
Total	211	100%

*Includes 11 surveys that were not completed and were removed from final analysis

3.2 Measures

The structured electronic survey (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, 11 of which had been included in the five previous surveys since 2009. Five questions sought socio-demographic information on gender, length of residency, age, ethnicity, and their previous rock fishing activity.

A question (introduced in 2014) that sought information on what was the primary reason for the fishers fishing on the day they were surveyed. The question included five possible responses: 1) *For fun and enjoyment*, 2) *To feed the family*, 3) *To be with my mates*, and 4) *To have a day out from home/work*. The reason for the inclusion of this question was to determine the accuracy of the claim that many fishers were engaged in fishing primarily for sustenance purposes in a low wage economy.

Two questions on at-risk fishing behaviours and perceptions of drowning risk from the earlier surveys were again included so as 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.*

As was the case in previous surveys from 2009, questions were included that sought information on public rescue equipment that had been installed at high risk sites in the previous years. The first question asked whether fishers had seen the angel rings in high risk locations. The second questions asked fishers to report whether they had read the instructions accompanying each angel ring/throw bag. The third question asked if the fisher thought they could use the equipment in an emergency situation.

3.3 Data analysis

Data from the completed questionnaires were entered into Microsoft Excel 2010 for statistical analysis using SPSS Version 24.0 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. Only data collected using the same electronic tablet method was used for comparative purposes (2016 v 2017 data). Of the surveys recorded in Survey Gizmo (N = 211), 11 cases contained incomplete data and were removed for the final analysis leaving a total of 200 participant in the final sample.

4. KEY FINDINGS

The results of the 2017 survey are presented in six sections:

4.1 Demographics of Fishers

4.2 Awareness of West Coast Rock-based Fishing Safety Project

4.3 The Installation and Usage of Angel rings

4.4 Fisher Perceptions of Drowning Risk

4.5 Water Safety Behaviours of Fishers

4.6 Changes in Fishers' Knowledge, Attitudes and Behaviours

Illustration 1. The end game – a smiling fisher wearing an inflatable harness type lifejacket on Auckland's rugged west coast

4.1 DEMOGRAPHICS OF FISHERS

Demographically, the participants (N = 200) in the 2017 survey reflected a similar mix as reported in previous surveys. Fishers were predominantly male (91% male; 9% female) and one half (50%; n = 100) were aged between 20-44 years (see Table 2). Proportionally more Asian peoples (67%; n = 133) took part in the survey, whereas proportionally less European (16%; n = 31) and Maori (4%; n = 8) New Zealanders took part.

Table 2. Demographic Characteristics of Fishers, 2017

Demographic Characteristic		***n***	***Valid %***	**Total**
Gender	Male	133	91.0	200 (100%)
	Female	14	9.0	
Ethnicity	European	31	15.5	200 (100%)
	Maori	8	4.0	
	Pasifika	26	13.0	
	Asian	133	66.5	
	Other	2	1.0	
Age group	15-19 years	11	5.5	200 (100%)
	20-29 years	43	21.5	
	30-44 years	57	28.5	
	45-64 years	79	39.5	
	65+ years	10	5.0	
Length of residency	< 1 year	11	5.5	200 (100%)
	1-4 years	25	12.5	
	5-9 years	47	23.5	
	>10 years	67	33.5	
	All my life	50	25.0	

One quarter (25%) had lived in New Zealand all their lives, less than one half (42%; n = 84) had lived in New Zealand less than 10 years, and one fifth (18%) were of recent residency (<5 years). In comparison with the fishers' length of residency reported in the previous year, more fishers reported residency of less than 6 years (2017, 18%; 2016, 11%) and fewer reported residency greater than 10 years (2017, 34%; 2016, 40%) or all my life (2017, 25%; 2016, 36%).

Table 3 shows that those who self-identified as of Asian origin (*n* = 133) were predominantly Chinese/Taiwanese (64%; *n* = 85), Korean (23%; *n* = 30), Indian, (7%; *n* = 9) and other Asian ethnicities (9%; *n* = 9). Because the electronic version of the survey (that was only available in English) was the only method of gathering data, no differentiation of response by language spoken was possible in the 2016-17 survey. It is not known how this has impacted on the accuracy of responses. As was the case in the previous year, further electronic surveying in other languages (Mandarin, Korean, and possibly Hindi) may be advised.

Table 3. Self-identified Ethnicity of Asian Fishers, 2017

Asian Ethnicity	***n***	***%***
Chinese/Taiwanese	85	63.9
Korean	30	22.6
Indian	9	6.8
Other Asian (Filipino, Afghani, Vietnamese, Thai)	9	6.8
Total	133	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 4 shows that one third (33%, *n* = 65) reported that this was their first visit to the site and more than one half (57%, *n* = 104) had visited the site up to 5 times. Cumulatively, almost three quarters of fishers (73%, n = 145) reported that they had visited the site less than 10 times. Almost one fifth of fishers (19%, *n* = 37) had visited the site more than twenty times.

In comparison with the previous year, fewer fishers were likely to be regular visitors to the site where interviewed with more fishers having fished the site less than 5 times (2017, 57%; 2016, 42%) and fewer fishers having fished at the location more than 20 times (2017, 19%; 2016, 42%).

Table 4. Frequency at Site where Interviewed, Other Places Fished, and Reasons for Fishing, 2017

How often have you fished at this site?	***n/%***		**Cumulative %**
First time at site	65	32.5	32.5%
2-5 times	49	24.5	57.0%
6-10 times	31	15.5	72.5%
11-20 times	18	9.0	81.5%
>20 times	37	18.5	100.0%
Where else have you fished?			
Other Auckland west coast sites	16		
Northland	9		
Auckland Harbours (inc. Manukau, Waitemata)	17		
Inner Hauraki Gulf (inc. Whangaparoa, Maraetai etc)	3		
Outer Hauraki Gulf (inc. Coromandel, Great Barrier)	3		
Other New Zealand sites	6		
Other not specified (including boats)	1		
What is the main reason for fishing today?			
Fun and enjoyment	142	71.0	77.5%
Feed the family	13	6.5	77.5%
Be with mates	31	15.5	93.0%
Have a day off from work/home	14	7.0	100.0%

Figure D (Appendix 2, p. *v*) reports the percentage of fishers that have visited the site where interviewed. Figure C (Appendix 2, p. *v*) shows the trend line for fishers who have fished the site more than 6 times from 2006-2017. The trend line suggests that this frequency of site visits is increasing yet the 2017 results indicates the frequency has decreased. This decrease is difficult to explain. It may be that the heavy concentration of surveys returned from one location (Bethells Beach area) has skewed the response.

4.2 AWARENESS OF WEST COAST ROCK-BASED FISHING SAFETY PROJECT

Fewer fishers (24%, *n* = 47) surveyed in 2017 reported that they had taken part in previous west coast rock-based fishing safety surveys compared with the previous year (2016, 36%). While reflecting the transient nature of the Auckland west coast rock-based fisher from year to year, reasons for a lack of consistency in awareness of the project are hard to determine. The increased number of sites surveyed and the use of e-surveys rather than hard copy written questionnaires available in multiple languages are possible reasons, as are difficulties in data gathering (such weather, sea conditions) and lack of fisher motivation to comply with surveyor requests to take part as they become more familiar with the surveys existence each year.

Table 5 shows that, of the 47 fishers who had taken part in the previous surveys, most (79%; *n* = 37) considered that the campaign had been *highly successful/successful* compared with those who either considered it *slightly successful/not successful* (21%; *n* = 10).

Table 5. Participation in, and estimation of success of, the previous projects

Did you take part in the previous rock fishing projects?	***n***	**%**
Yes	47	23.6%
No	153	76.5%
Total	200	100.0%
If Yes, how successful do you think it was?	***n***	***%***
Highly successful	9	19.1%
Successful	28	59.6%
Slightly successful	10	21.3%
Total	47	100.0%

Approximately half (45%, *n* = 90) of fishers surveyed in 2017 reported that they were aware of the current safety promotion. Table 6 shows that when those who were aware of the 2017 project were asked how they had found out about the project, the fishing safety advisors (44%, *n* = 40) were identified as the most frequent source of information (2016, 67%).

Table 6. Are you aware of, and how did you find out about the current (2017) project?

Are you aware of the current (2017) project?	***n***	**%**
Yes	90	45.0%
No	110	55.0%
Total	200	100.0
If Yes, how did you find out about the current project?	***n***	***%***
Fishing safety advisors	40	44.4%
Radio	15	16.7%
Television	13	14.4%
Newspapers	10	11.1%
Magazines	6	6.7%
Retail outlets (fishing stores, gas stations)	3	3.3%
Other sources (e.g. lifeguards, internet)	3	3.3%
Total	90	100.0%

As was the case in previous years, many fishers had heard of the current safety promotion through the council-employed fishing safety advisors, which once again reinforces 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 newspapers, retail outlets, and magazines as indicated by the lesser recall of the current project via these channels (6.7%, 3.3%, and 3.3% respectively).

The lack of awareness of current and previous campaigns is a continuing cause for concern. The ongoing transience nature of the rock-based fisher population from year to year as previously reported means that each successive year new fishers require

educating about the dangers of rock fishing. This difficulty is exacerbated by: the remote location in which the activity takes place; the variability of the first language of an ethnically diverse group, and the informal nature of the pursuit (no club structures etc.).

Figure A shows the trend line of the number of times fishers who were aware of previous west coast fishing safety campaigns, Figure B shows the distribution of responses from 2006-217 and had completed the survey from 2006 to 2017 (Appendix 2, p. *iv*). The trend line suggests that fewer fishers were aware of the safety campaign in 2016 and 2017. In 2017 only one quarter of the fishers were aware of the Project, reinforcing previous comments (Moran, 2008, 2011, 2017) about the difficulty of reaching every fisher in remote settings on Auckland's west coast where fishers engage in their activity. This apparent decline in awareness may be influenced by the increased proportion of surveys completed in one of the more remote locations (Bethell's Beach) where promotion of fisher safety may not have been as apparent as in other more accessible sites (such as Flat Rock, Muriwai).

Illustration 2. Angel rings at west coast rock-based fishing sites

4.3 PUBLIC RESCUE EQUIPMENT (angel rings, throw bags etc.)

Table 7 shows that of the 102 fishers (51% of sample) who responded to the question relating to the angel rings (public rescue equipment), most (62%, *n* = 66) reported having seen them at Auckland's west coast fishing sites, a lesser proportion than in the previous year (2016, 87%). An explanation for this decreased observation of angel rings from the previous year (2107, 62%; 2016, 87%) may be the consequence of different sampling distributions with more responses from one source than in the previous year (55% of respondents from Bethell's Beach had not seen angel rings).

Table 7. Awareness of the angel rings, 2017

Have you seen the angel rings?	***n***	**%**
Yes	66	62.3%
No	40	37.7%
Have you read the angel ring instructions?		
Yes	50	45.0%
No	61	55.0%
Do you think you could use one in an emergency?		
Yes	84	75.7%
No	27	24.3%

When asked if they had read the associated signage and instructions on how to use the rescue equipment in an emergency, 45% (*n* = 50) of fishers reported that they had read the instructions (2016, 26%). Even though many fishers (55%, *n* = 61) reported not having read the instructions, most (76%; *n* = 84) thought that they could use the angel rings in an emergency (2016, 74%). One quarter (24%, *n* = 27) reported that they did not think they could use an angel ring in an emergency (2016, 26%). Given the isolation of most of the fishing locations on the west coast of Auckland, this is a major source of concern since bystander assistance is likely to be critical in the time before lifeguards and/or other emergency services are able to expedite a rescue response.

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.

Table 8. Fishers' Perceptions of Risk of Drowning, 2017

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	174	74.7	32	16.8	16	8.4
2. Rock fishing is no more risky than other water activities	88	44.2	44	22.1	67	33.6
3. Drowning is a constant threat to my life when rock fishing	113	56.8	35	17.6	51	25.6
4. I am not concerned about the risks of rock fishing	51	25.6	22	11.1	126	63.4
5. Others rock fishers are at greater risk of drowning than me	59	29.6	90	45.2	50	25.1
6. I am a strong swimmer compared with most other people	85	42.7	43	21.6	71	35.6
7. I avoid fishing in bad conditions to reduce drowning risk	177	88.9	10	5.0	12	6.0
8. Always wearing a life jacket makes fishing a lot safer	173	86.9	15	7.5	11	5.5
9. Turning my back to the waves when rock fishing is very dangerous	179	89.9	13	6.5	7	3.5
10. My local knowledge of this site means I'm unlikely to get caught out	108	54.3	43	21.6	48	24.1
11. My experience of the sea will keep me safe when rock fishing	124	62.0	41	20.5	35	17.5
12. My swimming ability means I can get myself out of trouble	75	37.5	56	28.0	69	34.5

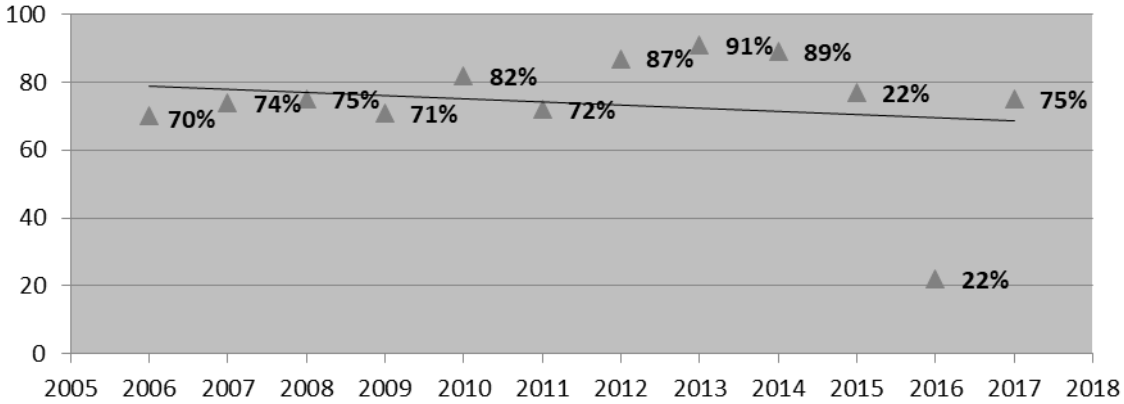
Statements 1-3 (Question 12) in Table 8 relate to fishers' perceptions of **the severity of the risk of drowning** when fishing from rocks (see Appendix 1 – survey questionnaire). In 2017, most fishers (75%) agreed that getting swept off rocks was likely to result in drowning, and more than one half (57%) considered drowning a constant risk when fishing from rocks, yet almost half (44%) agreed that fishing from rocks was no more risky than other water activities. Unlike the previous year (see Table 9), it appears that 2017 fishers have a greater appreciation of the severity of the risk of drowning associated with fishing from rocks off Auckland's west coast (2017, 75%, 2016, 22%). It is hoped that this heightened sensitivity of risk will promote safer fishing practice within the fisher community.

Table 9. Comparison of fisher beliefs in the severity of the risk of drowning, 2016 and 2017

Do you think that-		Strongly agree/ Agree	Unsure	Strongly disagree/ Disagree
1. Getting swept off the rocks is likely to result in my drowning	2017	75%	17%	8%
	2016	*22%*	*18%*	*60%*
2. Rock fishing is no more risky than other water activities	2017	44%	22%	34%
	2016	*22%*	*32%*	*46%*
3. Drowning is a constant threat to my life when rock fishing	2017	57%	18%	26%
	2016	*14%*	*19%*	*67%*

Figure 1 shows the change in opinions on the severity of the risk of drowning related to getting swept off the rocks from 2006 to 2017. In 2016 only one fifth of fishers (22%) agreed that getting swept off the rocks was likely to result in drowning (compared with 77% of fishers in the previous year (2015) and 75% in the current year (2017). The trend line suggests that, prior to the current survey, fishers had become more aware of the risk of drowning at high risk rock based fishing sites over the decade from 2006 -2015. The 2017 result reinforces the previous heightened sensitivity towards drowning risk over the previous ten years that the project has been running and contradicts the trend reversal reported in 2016 (see Figure E, Appendix 2, p.*vi*).

Figure 1. Fishers who agree that getting swept off rocks is likely to result in drowning, 2006-2017 (Measure - Severity of risk)



The second measure of fishers' perception of the appraisal of drowning risk – personal vulnerability to the risk was determined from statements 4-6 in Question12 and reported in Table 10.

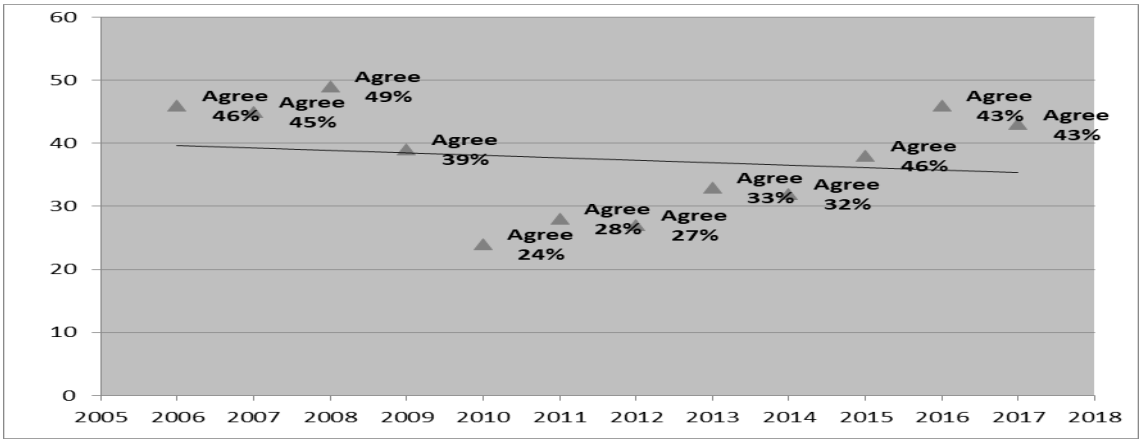
Table 10. Comparison of fisher beliefs in vulnerability to the risk of drowning, 2016 and 2017

Do you think that-		Strongly agree/ Agree	Unsure	Strongly disagree/ Disagree
4. I am not concerned about the risks of rock fishing	2017	26%	11%	63%
	2016	*20%*	*12%*	*68%*
5. Others rock fishers are at greater risk of drowning than me	2017	30%	45%	25%
	2016	*43%*	*51%*	*6%*
6. I am a strong swimmer compared with most other people	2017	43%	22%	36%
	2016	*46%*	*26%*	*29%*

Most fishers (63%) disagreed that they were not concerned about the risk of drowning (2015, 68%), but almost one third (30%) thought that other fishers were more vulnerable to the risk of drowning than themselves (2016, 43%). Almost half (45%) were unsure of this. As was the case in previous years, many fishers (43%) considered that they were strong swimmers compared with other people (2016, 43%). Conversely,

more fishers in 2017 thought they were poor swimmers in comparison with others in the previous year (2017, 36%; 2016, 29%) but the trend line shown in Figure 2 suggests that fishers are gradually reducing their beliefs in their own capacity to cope.

Figure 2. Fishers who agree that they are strong swimmers compared with others, 2006-2017 (Measure – Vulnerability to risk)



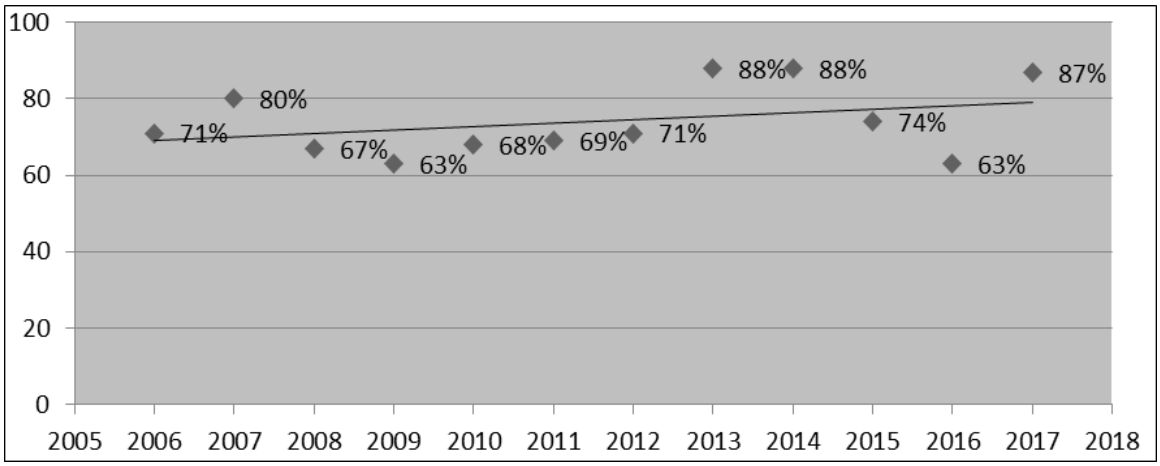
Responses to statements 7-9 (Question 12) related to fisher perceptions of the **efficacy of preventive action** in reducing drowning risk when fishing from rocks (see Appendix 1 – survey questionnaire). Most fishers taking part in the 2017 survey responded positively to all three statements of the efficacy of preventive actions to reduce drowning risk (Table 11). As in previous years, most fishers in 2017 avoided fishing in bad weather (97%), avoided turning their back to the waves (89%), and that wearing a lifejacket when fishing from rocks made it a lot safer (87%).

Table 11. Comparison of fisher beliefs in efficacy of preventive actions, 2016 and 2017

Do you think that-		Strongly agree/ Agree	Unsure	Strongly disagree/ Disagree
7. I avoid fishing in bad conditions to reduce drowning risk	2017	89%	5%	6%
	2016	*93%*	*3%*	*4%*
8. Always wearing a lifejacket makes fishing a lot safer	2017	87%	8%	6%
	2016	*63%*	*18%*	*20%*
9. Turning my back to the waves when fishing is very dangerous	2017	90%	7%	3%
	2016	*69%*	*5%*	*26%*

Figure 3 shows the trend line of fishers who agree that lifejacket use is a good preventative action from 2006 to 2017. While it is encouraging that the perception of lifejacket use being a valuable preventive action is again on the increase, the self-reported use of lifejackets presented in the following section of fishing behaviours is not consistent with this belief. It would appear that some fishers are still not "practising what they preach" in this respect and continued advocacy of this critical factor is recommended.

Figure 3. Fishers who agreed that wearing a lifejacket makes fishing from rocks a lot safer, 2006-2017 (Measure – Efficacy of preventive action)



When comparing the current 2017 findings with that of the previous year, Table 11 shows that most fishers agreed that they avoided fishing in bad conditions (2017, 89%; 2016, 93%), that wearing a life jacket made fishing a lot safer (2017, 87%; 2016, 63%) and that turning your back to the sea when fishing from rocks was very dangerous (2017, 90%; 2015, 69%). The improvement in the percentage of fishers who considered lifejacket use is gratifying and suggest that the low score in 2016 was an idiosyncratic finding.

Responses to statements 10-12 (Question 12) related to fisher perceptions of the self-efficacy of their preventive behaviours in reducing drowning risk when fishing from rocks (see Appendix 8.1 – survey questionnaire). It describes their confidence in their capacity to counter their risk of drowning. In previous surveys, fishers have been confident of their ability to keep themselves safe - their self-efficacy (see Figures I and J

Appendix 2, p. *ix*). The current survey results suggest that most participants in 2017 also considered themselves capable of looking after themselves with more than half believing that their experience of the sea (54%) and their local knowledge (62%) will keep them safe. However, only one third of fishers (38%) thought that their swimming ability would get them out of trouble, but most (62%) either did not agree (34%) or did not know (28%).

Table 12 shows a comparison of fishers' beliefs from the 2017 and 2016 surveys about their ability to cope with the risk associated with fishing from rocks on Auckland's west coast. All three statements regarding their personal experience of the sea, their local knowledge of the site, and their confidence in their swimming competence suggest that participants in the 2017 survey were more circumspect than their previous cohort. Particularly noticeable is the change in beliefs about the protective capacity of their swimming ability, with half the proportion confident of their swimming ability (2017, 38%; 2016, 76%) and most participants in the current survey either unsure or not confident of their swimming ability compared to the previous year (2017, 62%; 2016, 76%).

Table 12. Comparison of fisher self-efficacy to cope with risk, 2016 and 2017

Do you think that-		Strongly agree/ Agree	Unsure	Strongly disagree/ Disagree
10. My experience of the sea will keep me safe when fishing	2017	54%	22%	24%
	2016	*86%*	*9%*	*5%*
11. My local knowledge of this site means I'm unlikely to get caught out	2017	62%	20%	18%
	2016	*78%*	*9%*	*14%*
12. My swimming ability means I can get myself out of trouble	2017	38%	28%	34%
	2016	*76%*	*14%*	*10%*

The trend lines over the 12 years of the Project for these components of self-efficacy show little change in perceptions. Figure 4 shows the trend line for responses related to the protective capacity of their local knowledge suggests that, in the prior years of the Project, belief in the protective power of their local knowledge has been consistently strong irrespective of the consistently low frequency of visits to the site. As

was stated in last year's Report (Moran, 2016), while frequency of visits to sites has increased slightly over the years, it is unlikely that the protective power of such knowledge, real or imagined, will do much to minimise risk in the hazardous locations fisher use on the west coast. The same optimism in the self-efficacy of their knowledge of the sea was evident in the trend line shown in Figure 5.

Figure 4. Trend line of the percentage of fishers who believe in the protective value of their local knowledge, 2006-2017

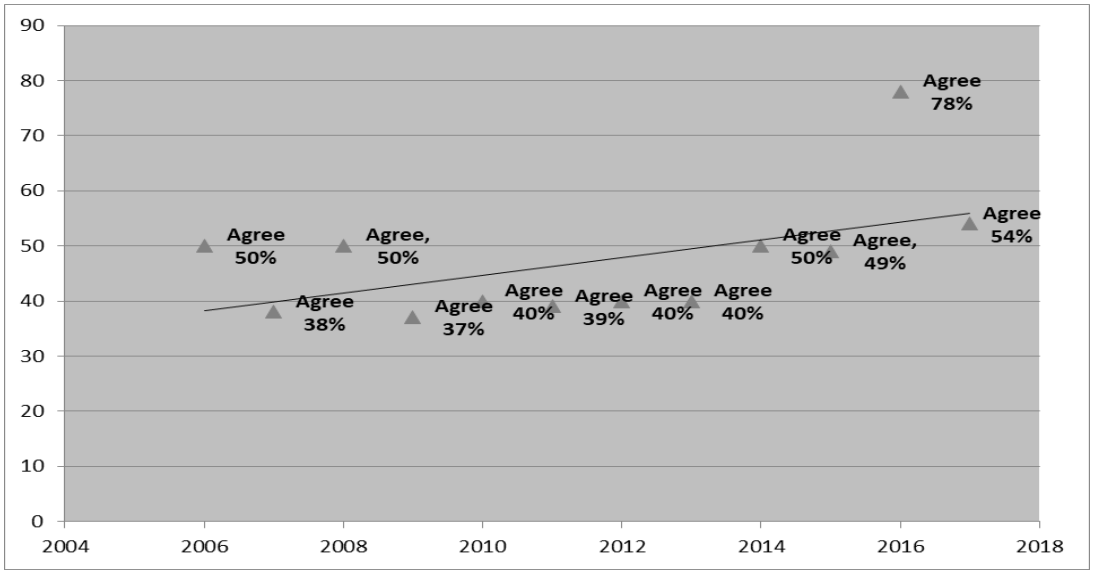
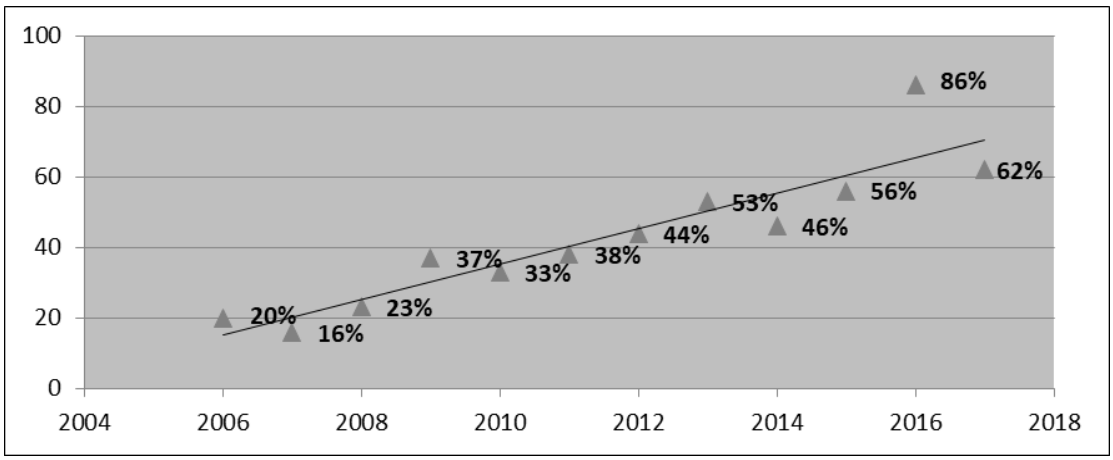


Figure 5. Trend line of the percentage of fishers who believe in the protective value of their knowledge of the sea, 2006-2017



4.5 WATER SAFETY BEHAVIOURS OF FISHERS

Fishers were asked to report their previous water safety behaviours (see survey question 12, 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. As in previous surveys, the latter two responses were aggregated and are reported in the tables and text as *often/always* (see Table 13).

Table 13. Fishers' Self-reported Water Safety Behaviours, 2016-17

When rock fishing, do you -	Never		Sometimes		Often/Always	
	n	*%*	*n*	*%*	*n*	*%*
1. Wear a lifejacket or other flotation device	73	36.5	82	41.0	45	23.5
2. Check weather/water conditions first	10	5.0	21	10.6	168	84.4
3. Drink alcohol when you are fishing	168	84.0	25	12.5	7	3.5
4. Wear gumboots or waders	98	49.2	64	32.2	37	18.6
5. Turn your back to the sea when fishing	104	52.3	81	40.7	14	7.0
6. Take a cell phone in case of emergencies	15	7.5	23	11.5	162	81.0
7. Go down rocks to retrieve snagged line	117	58.8	57	28.6.	25	12.5

Figure 6 indicates critically important behaviour change with regards to lifejacket use since the inception of the project with a peak in lifejacket use (50%) occurring in 2011. The positive change in the trend line since 2006 is encouraging and supports anecdotal evidence of greater use of lifejackets by fishers (see Figure K, Appendix 2, p. *x*). However, the 2016 and 2017 responses where only one quarter (24%) of fishers report *Often/Always* wearing a lifejacket when fishing form rocks is a growing cause for concern. As indicated by the trend line in Figure 6, the positive change in behaviour related to the use of life jackets/flotation devices has consistently

improved, but the most recent survey again suggests some negative shift in behaviour. This could be the consequence of a change in data gathering processes or a biased sampling procedure (e.g. a focus on fewer sites) but further investigation is recommended in future surveying to determine whether these latest findings represent a real shift in lifejacket behaviour.

Figure 6. Fishers who report *often/always* wearing a lifejacket, 2006-2017

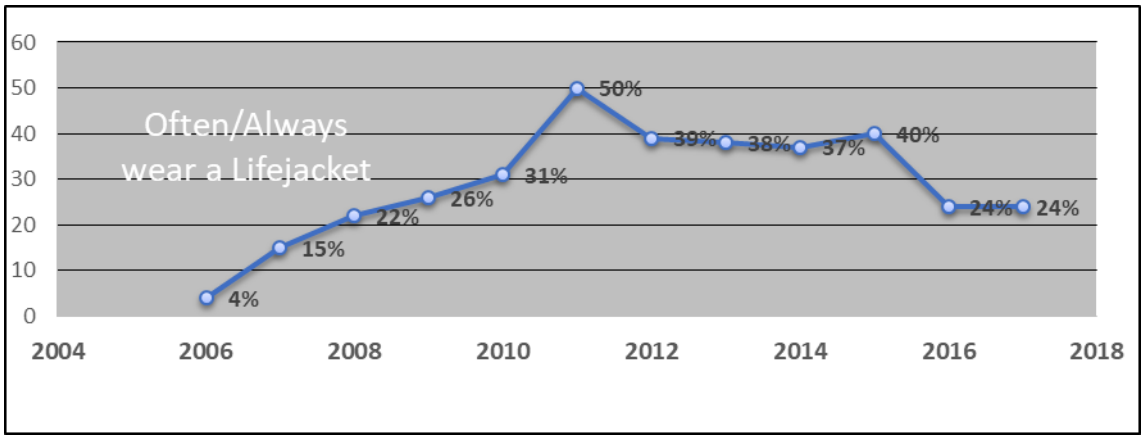


Figure 7 shows a persistent minority of fishers (range 72%-28%) who n*ever* wear lifejackets. While it is encouraging to note a continuation of the downward trend in 2017 (suggesting that the 2016 finding was idiosyncratic), it is still a cause for concern that more than one third of fishers report never wearing a lifejacket. The 2017 return indicates that a greater proportion of fishers are *sometimes* wearing a lifejacket (2017, 41%; 2016, 11%).

Figure 7. Fishers who report *never* wearing a lifejacket, 2006-2017

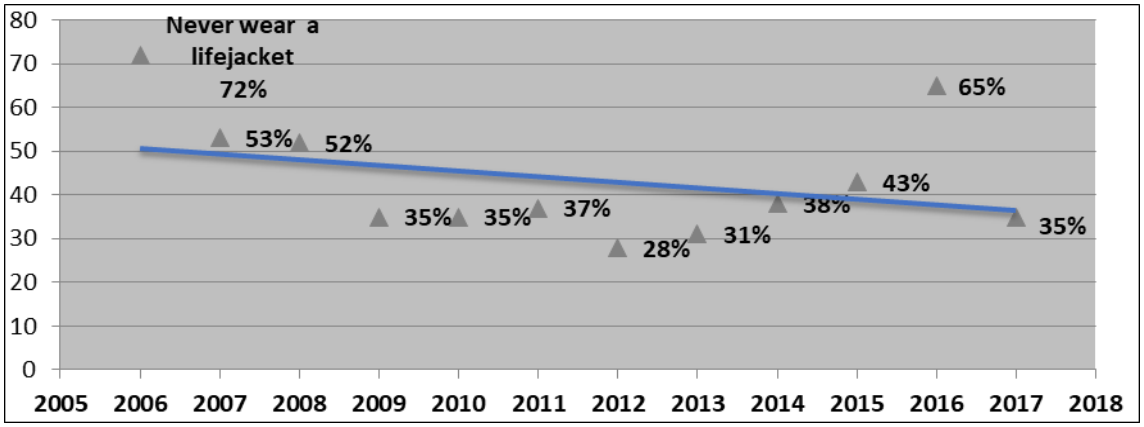
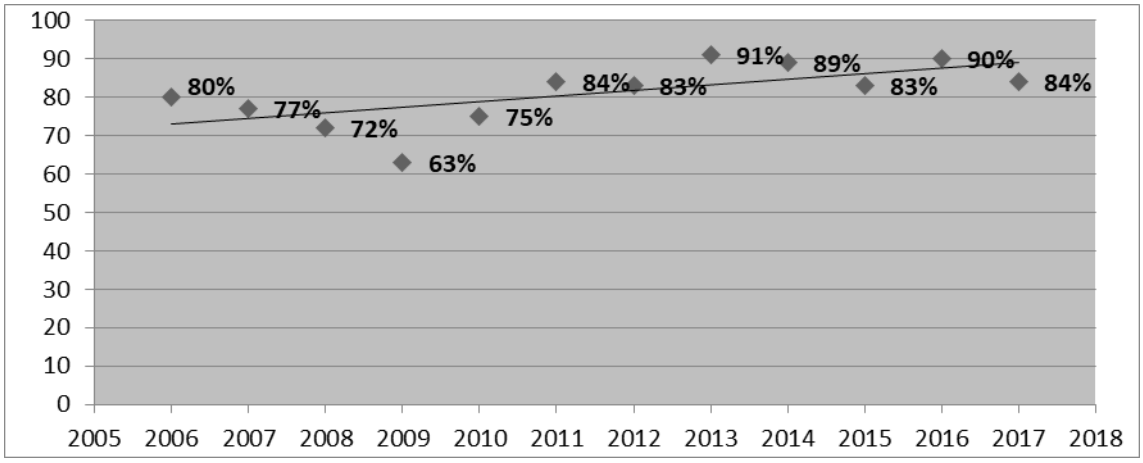


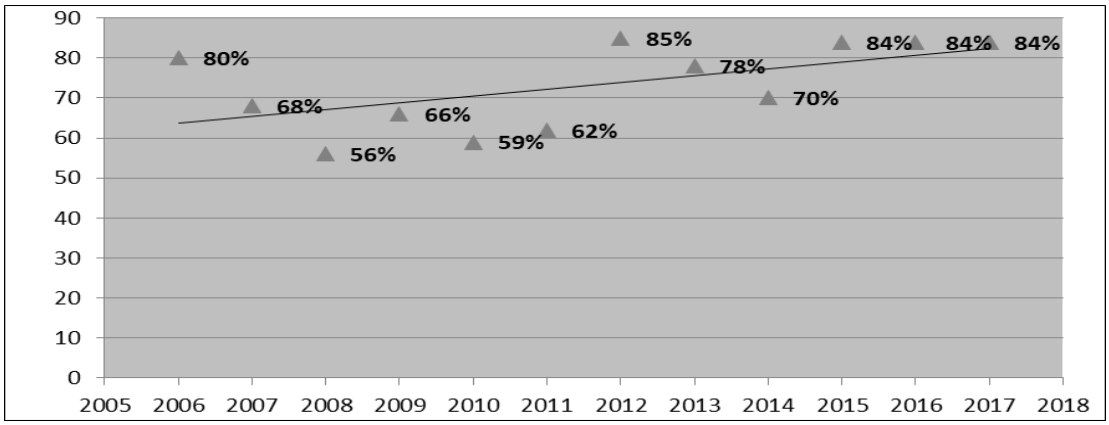
Table 13 shows that almost all fishers (84%) reported *often/always* checking the weather beforehand, and, of these most (71%) reported *always* checking conditions. Figure 8 shows a consistent pattern of compliance with this important safety behaviour from 2006-2017 when most fishers also reported *often/always* checking the weather beforehand (see Figure L, Appendix 2, p. *xi*). From 2006 -2017, approximately three-quarters of fishers (range 72-91%) *always/often* checked the weather beforehand and a small proportion (range 2-12%) consistently *never* checked the weather. The continued positive trend in this behaviour is encouraging and reflects an improved safety culture among fishers.

Figure 8. Fishers who report *often/always* checking the weather beforehand, 2006-2017



In 2017, most fishers (84%) reported that they *never* mixed alcohol and fishing, but a proportion (16%) of fishers did *sometimes/often* consume alcohol when fishing in 2017, a similar proportion to that recorded in the previous year (2016, 10% *sometimes*, 6% *often/always*). Figure 9 shows that most fishers recognised the inherent danger of mixing alcohol consumption with high risk rock-based fishing and abstained from alcohol use when fishing. Since little change in the frequency of alcohol consumption has been reported over the years (see Figure M, Appendix 2, p. *xi*), continued promotion of the no alcohol use in rock fishing safety promotion is recommended.

Figure 9. Fishers who report *never* drinking alcohol when fishing, 2006-2017



The fourth risky practice related to the wearing of waders or gumboots. Table 13 shows that one half of fishers (49%) reported that they *never* wore gumboots or waders, but almost one third (32%) did, with almost 19% reporting that they did *sometimes* and 15% *often/always* wearing gumboots or waders. As in previous years (see Figure N, Appendix 2, p. *xi*), it may still be prudent to combine messaging about protective clothing with lifejacket use. While Figure 10 shows some sign of positive behavioural change over the decade of intervention, continued emphasis on the need for safe clothing/footwear is recommended.

Figure 10. Fishers who report *never* wearing gumboots when fishing, 2006-2017

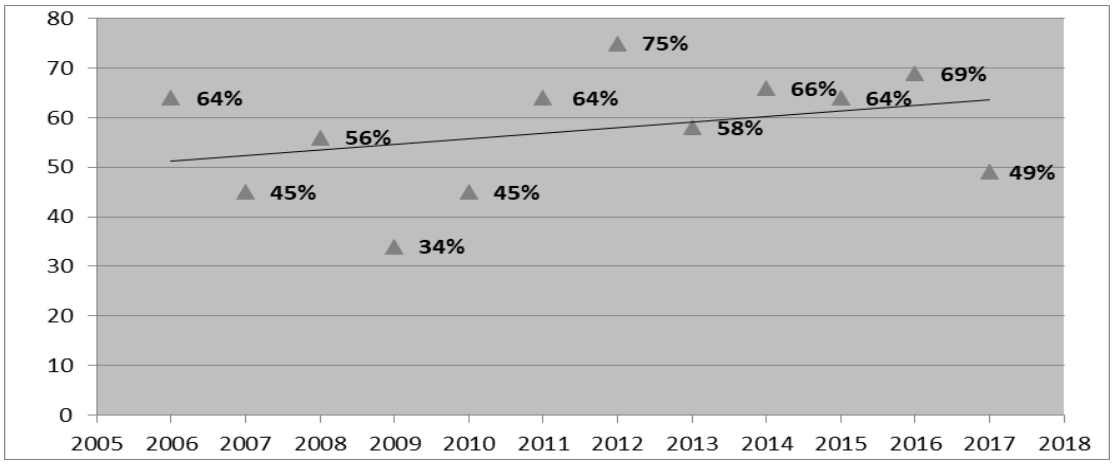
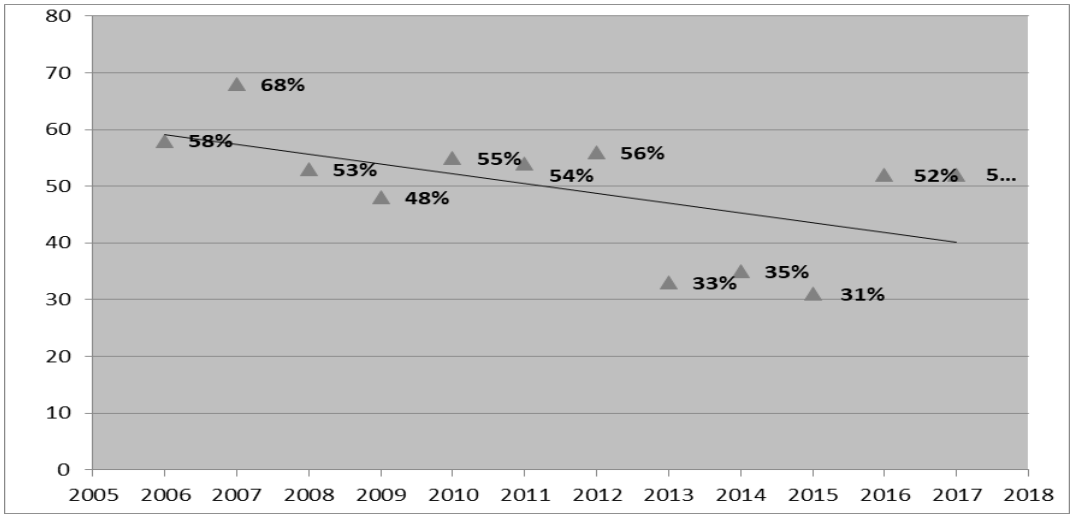


Table 13 shows that, in 2017, the dangerous practice of turning your back to the sea was reported by half of the fishers (52%), with 41% fishers *sometimes* and 7% *often/always* turning their backs to the sea at some time when fishing from rocks. The trend line shown in Figure 11 indicates that this risky behaviour has trended downward during the 12 years of the Project. A breakdown of responses over the previous 12 years (see Figure 0, Appendix 2, p. *xii*) shows a gradual positive shift in behaviour although it would appear to still be a widespread practice and thus should be the focus of future safety messaging.

Figure 11. Fishers who report *never* turning their backs to the sea when fishing, 2006-2017

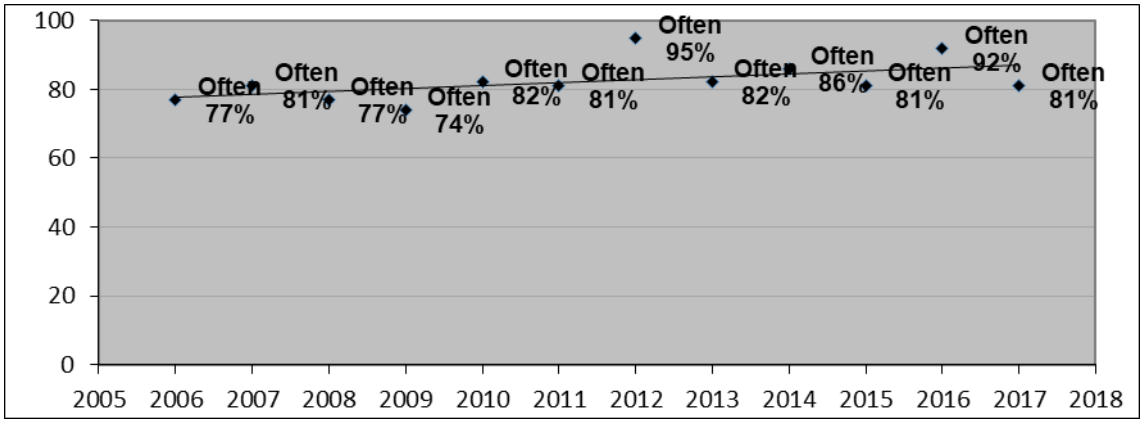


Fishers were asked whether they carried a cell phone for emergency use. Table 13 shows that, in 2017, most fishers (81%) reported that they *often/always* carried a cell phone, with 12% reporting that they *sometimes* did and 7% that they *never* did. This continued widespread carriage of cell phones by fishers is encouraging and suggests that emergency services may be better able to respond to incidents in these traditionally remote locations.

Figure 12 shows that most fishers have consistently reported carrying cell phones when fishing off Auckland's west coast from 2006-2017 (see Figure P, Appendix 2, p. *xii*). More than three quarters of fishers surveyed from 2006-2017 carried a mobile

phone, particularly valuable given the isolated location of many of the sites. The trend line indicates that the practice is on the increase (range 74%-95%), further research on their actual use in emergencies (possibly via an analysis of emergency callouts requiring rescue assistance) would reinforce the necessity of carrying them.

Figure 12. Fishers who report *Often/Always* carrying a cell phone when fishing, 2006-2017



The final self-reported behaviour related to the dangerous practice of going down the rocks to the waters edge to retrieve a snagged line. Table 13 shows that, in 2017, more than one half (59%) of fishers reported that they *never* went down the rocks to free a snagged line, but 41% reported that they did *sometimes* (29%) or *often* (12%). While similar responses to the previous year (2016, *never* 50%, *sometimes* 24%, *often* 26%), it is still a cause for concern that almost one half (41%) of fishers sometime engage in this highly dangerous practice is most concerning.

Figure 13 shows the trend in this behaviour over the 12 years of the project. As was the case with wearing gumboots (Figure 10) and turning your back to the sea (Figure 11), the frequency of this self–reported behaviour has not improved greatly over the 12 years of the Project (see Figure Q, Appendix 2, p. *xiii*). As was the case in previous years, anecdotal evidence from observations of fisher practices suggests that few fishers cut their lines in response to snagging the line on surface or underwater rocks. Continued promotion of line cutting as the safest way to fish from rocks is recommended.

Figure 13. Fishers who report *never* going down the rocks when fishing, 2006-2017

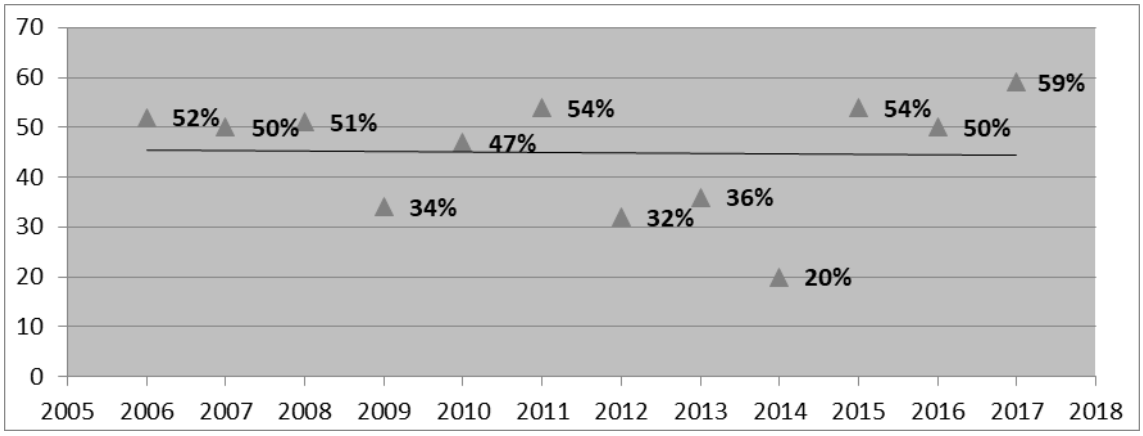
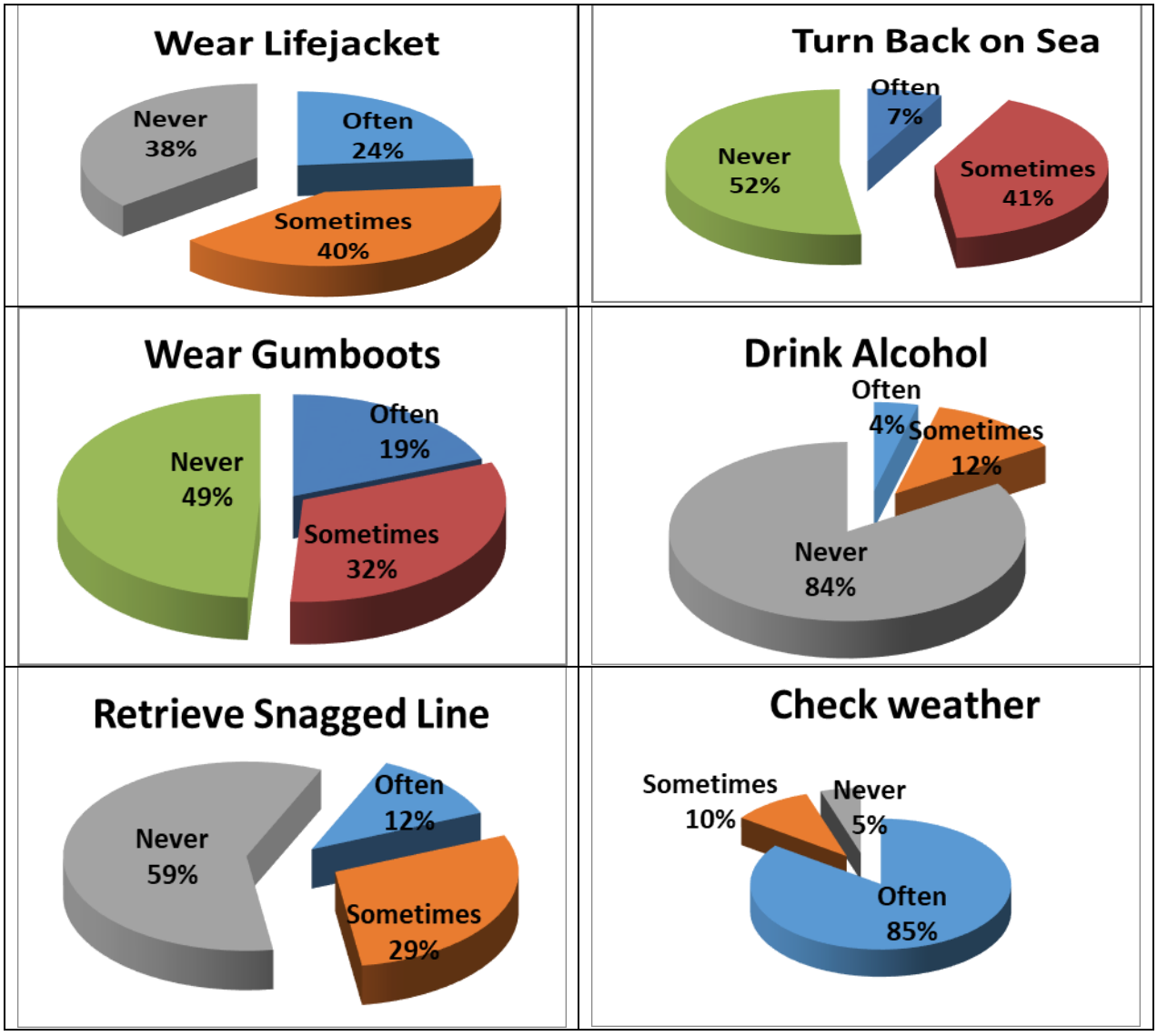


Table 14. Summary of Safety Behaviours, 2017



4.6 CHANGES IN FISHERS' KNOWLEDGE, ATTITUDES, AND BEHAVIOURS

Fishers were asked to assess whether their fishing safety knowledge, attitudes, and behaviour and that of their mates and other fishers had improved (see Question 13, Appendix 1). Table 15 shows that most fishers (79%) considered that their safety knowledge had improved in recent years, a small proportion (3%) thought that it had not improved and 18% didn't know whether it had improved. Most fishers (89%) thought that their attitudes towards fisher safety had improved and most (91%) thought that their safety behaviours had improved.

Table 15. Comparison of Self-Reported Changes in Fishers' Safety Knowledge, Attitudes and Behaviours, 2016 and 2017

Do you think that -	Year	Agree		Disagree		Don't know		Total	
		n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Your rock fishing safety knowledge has improved?	2017	157	78.9	6	3.0	36	18.1	199	100.0
	2016	*124*	*84.4*	*19*	*12.9*	*4*	*2.7*	*147*	*100.0*
Your rock fishing safety attitude has improved?	2017	174	87.9	3	1.5	21	10.6	198	100.0
	2016	*123*	*83.7*	*20*	*13.6*	*4*	*2.7*	*147*	*100.0*
Your rock fishing safety behaviour has improved?	2017	162	91.0	7	3.5	31	15.5	200	100.0
	2016	*119*	*81.0*	*25*	*17.0*	*3*	*2.0*	*147*	*100.0*
Your mates' rock fishing behaviour has improved?	2017	125	62.5	22	11.0	53	26.5	200	100.0
	2016	*106*	*72.1*	*23*	*15.6*	*18*	*12.2*	*147*	*100.0*
Other rock fishers' behaviour has improved?	2017	99	49.5	23	11.5	78	39.0	200	100.0
	2016	*110*	*74.8*	*13*	*8.8*	*24*	*16.3*	*147*	*100.0*

Comparative figures for the previous year suggest that fishers' perception of their knowledge attitudes and behaviours (KAB) had changed to some extent with: fewer thinking their knowledge had improved (2017, 79%; 2016, 84%); slightly more believing their attitudes towards safety had improved (2017, 88%; 2016, 84%), and more believing that their safety behaviour had improved (2017, 91%; 2016, 81%).

To determine whether participants in the survey had seen 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 almost two thirds of fishers (63%) thought that the safety behaviour of their mates had improved (2016, 72%), some (11%) thought their mates fishing behaviour had not improved (2015, 16%) but one quarter did not know (2017, 26%; 2015, 12%). When asked about other rock-based fishers, one half of fishers (50%) in the 2017 survey thought they had observed better safety behaviours of other fishers response about safety behaviour was reported in regards to other fishers, less than that reported in the previous year (2016, 75%), but more reported that they did not know (2017, 39%; 2015, 16%).

Illustration. Practical workshop at Flat Rock, Muriwai

5. LIMITATIONS

While the findings of the 2017 Report offer useful evidence to inform future safety promotion for Auckland's rock-based fishers, several methodological considerations need to be taken into account. In no order of priority, they include:

- Sampling of fisher population should be distributed throughout the recognised fishing sites, concentration on single sites may bias the results;
- E-surveying in a single language when dealing with a culturally and linguistically diverse population such as the fishers' population may result in inaccurate or misunderstood responses. Multilingual surveys (either electronic or written) may reduce this possibility;
- Face-to-face surveying (between interviewer and respondent) rather than a self-complete survey process may result in socialised responses where the respondent gives the answer that is thought to be appropriate rather than what may be a truthful response (especially when inappropriate behaviours are sought);
- Interviewers need to ensure that all sections of the survey are addressed so as to enhance the power of the responses, and
- Interviewers with appropriate language skills are recommended if face-to-face interviewing is to be the sole source of data gathering.

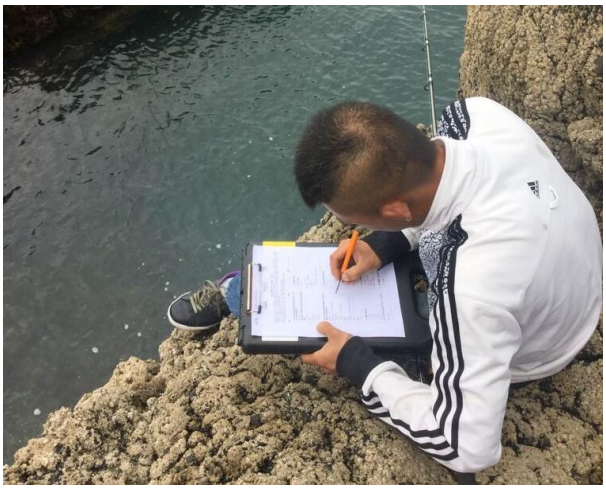


Illustration. Fisher completes survey onsite but absence of lifejacket is noticeable

6. CONCLUSIONS

On the basis of the above findings, several key points are worthy of concluding emphasis. They include:

- The rock-based fisher population on Auckland's west coast remain a transient ever-changing population with culturally and linguistically diverse demography.
- While some evidence suggests that the fishers are more familiar with the location at which they fish (greater frequency of visits), some self-reported risky behaviours (such as going down the rocks to retrieve a snagged line and the use of inappropriate footwear) still prevail.
- Most significantly, lower self-reported lifejacket use is a cause for concern and with fewer fishers reporting often wearing a lifejacket on the West coast, further safety promotion is warranted. This is the second year that lifejacket use has been below the peak level reached in 2011. Whether the poor lifejacket behaviour represents a negative shift in the mind set of fishers requires corroboration by observational study and continued monitoring.

7. SUMMARY OF KEY SAFETY PROMOTIONS, 2017

Land-Based Fishing Programme Report – 2016-2017

Background

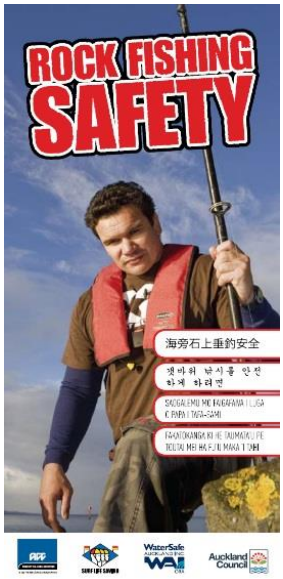
The land-based fishing programme targets rock, net and crab fishers who are of Asian, Pacific and Maori ethnicities as they are identified as at-risk groups for drowning when doing these types of activities. This project is a collaborative initiative with Surf Lifesaving Northern and Auckland Council who provide advice and guidance with their extensive knowledge in this field. The aim of the programme is to educate these population groups on the importance of wearing a lifejacket and to up-skill them on specific areas of water competence relating to land-based fishing.

Target Groups: Asian, Pacific and Maori.

Programme

This programme involves three main land-based fishing activities which is net fishing, crab fishing and rock fishing. WaterSafe Auckland's (WAI) role within the project is predominantly delivery based with the goal of increasing education and awareness of safer fishing on land using a number of activities such as practical workshops, educational seminars, radio and television appearances, presentations and events to ensure that these targeted groups are getting these key messages.

Lifejacket giveaways and an assortment of prizes were used to help promote the key message of 'always wear a lifejacket' at events, seminars and workshops. The Michael Jones Rock Fishing Safety brochure is in the 'redevelopment' stage as we look to updating this resource with a whole new look to help further promote safer fishing.



Surf Lifesaving Northern have the primary role of surveying rock fisherman out at Auckland's West Coast Beaches which is evaluated yearly with recommendations used, to help any future planning to improve the programme.

Auckland Council have been providing the bulk of funding for this project with important roles in identifying new sites for safety signage and angel rings.

Results

The number of direct contacts made is 5571 for the year ending 2016-2017. The numbers were achieved through these 7 activities;

- **Rock Fishing Surveys** – 211 contacts
- **Personal Development Training** – Completed by Surf lifeguards = 4 contacts
- **Practical Workshops** – A total of 5 workshops were completed at Muriwai x 2, Whanagaparoa Peninsula, Kawakawa Bay, Uretiti Beach = 175 contacts
- **Educational Seminars** – A total of 3 seminars completed at WAI - Westhaven Marina, Muriwai, Church of Tonga – Mangere = 253 contacts
- **Radio and Television** – 531 PI, Greenstone

Med

ia, Chinese World TV, New Zealand Herald

- **Presentations** – A total of 36 presentations - Puataunofo, Department of Corrections, Wai Wise, Wai Turama = 608 contacts
- **Events** – 29 attended within the Auckland region = 4320 contacts

Conclusion

The land-based fishing programme continues to be successful with the recent implementation of practical workshops and seminars which have been effective in reaching these at-risk groups. The partnership between Auckland Council, Surf Lifesaving Northern Region and WAI highlights the importance of collaboration, allowing each organisation to provide their expertise in helping to deliver a quality programme.

Report compiled by – Harry Aonga

8. RECOMMENDATIONS

It is recommended that:

1. Auckland Council:

- Retain the services of the safety advisors for a 2017/18 summer campaign
- Continue to provide regional leadership and support future fishing safety promotion, including the installation/maintenance of angel rings and safety signage at high risk sites.

2. WaterSafe Auckland, Surf Life Saving Northern Region 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. The continued high profiling of lifejacket use seems necessary in case the slippage in attitudes and behaviours reported here is more than a temporary trend
- Commit resources and personnel to the ongoing work collaboratively with all partners to promote best practice for West Coast fishing safety education beyond 2016-7.

3. Recreational fishers, fishing organizations, lifejacket retailers, fishing outlets:

- Adopt and endorse the fishing safety messages promoted by the 2016 West Coast Rock-based Fisher Safety Project.
- Encourage others in the rock fishing community to adopt safe practices - especially the wearing of 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.
- Advocate for the promotion of rock fishing safety with community groups especially those that are identified high-risk including new migrants, Pasifika and Asian peoples.

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10. Appendix

10.1 Appendix 1 - The survey questionnaire
10.2 Appendix 2 – 2006-2017 Figures

Rock-Fishing in Auckland: 2017

Date: _____ **Time:** _____ **Location:** _____

1. a) Did you take part in the Auckland west coast rock-fishing project in the past?

☐ Yes ☐ No

If Yes, do you think the project is:

☐ 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
☐ Māori
☐ Pasifika
☐ Chinese / Taiwanese
☐ Korean
☐ Indian
☐ Other (e.g. African, French, Spanish etc.)

_____

_____

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 <u>this location</u>?

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

9. Tick ONE of the list below that best describes your reason for fishing today:

☐ For fun and enjoyment
☐ To feed the family
☐ To be with my mates
☐ To have a day out from home / work

10 Can you suggest other dangerous sites without angel rings on the west coast

_____

11. 1 - Have you seen angel rings on the West Coast? ☐ Yes ☐ No

2 – Have you read instructions on how to use them? ☐ Yes ☐ No

3 – Do you think you could use one in an emergency? ☐ Yes ☐ No

4 – Do you have any suggestions on how to make them more effective? _____

_____

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

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

14. As a result of the rock fishing project, do you believe that:	**Agree**	**Disagree**	**Don't know**
1 My knowledge of rock fishing safety has improved	☐	☐	☐
2 My practice of rock fishing safety has improved	☐	☐	☐
3 My attitudes towards rock fishing safety have improved	☐	☐	☐
4 My rock fishing mates seem more safety conscious	☐	☐	☐
5 Other rock fishers around me seem more safety conscious	☐	☐	☐

Appendix 10.2: Supplementary Analysis, 2006-2017

Question 1: *"Did you take part in previous rock fishing surveys?"*

Figure A. Trend line of participation in previous fishing surveys, 2007-2017

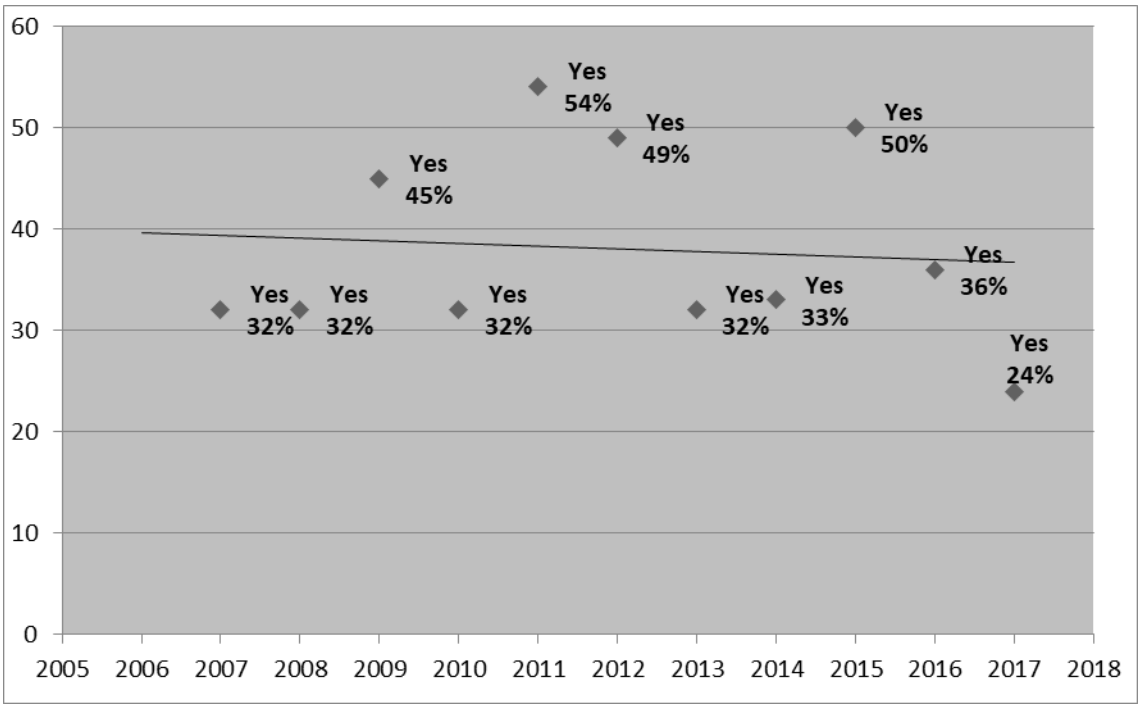
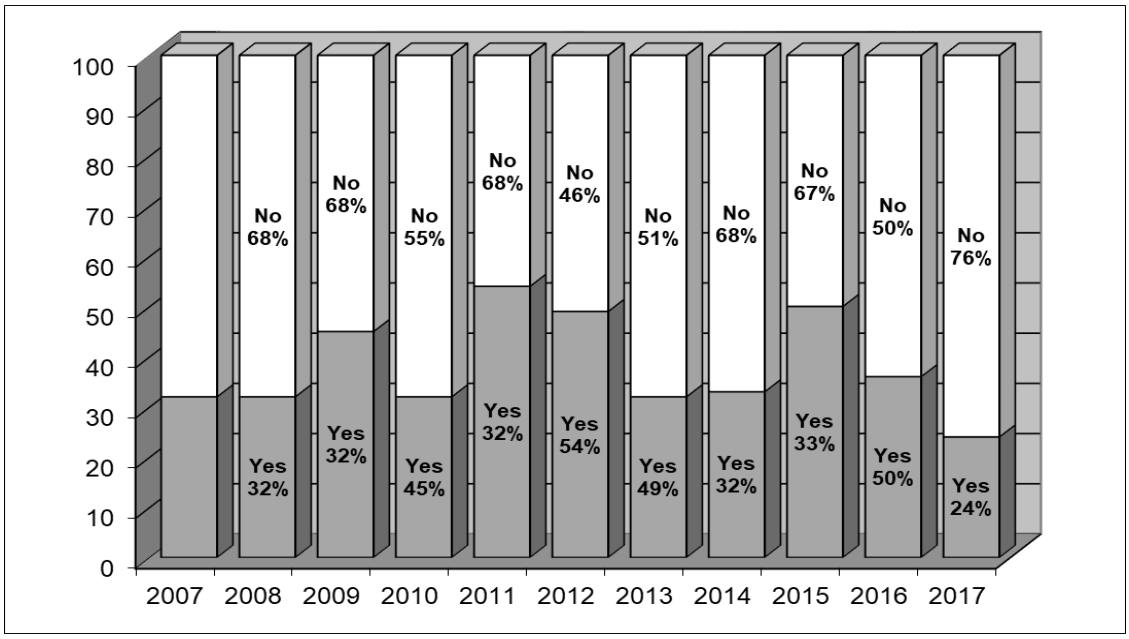


Figure B. Percentage of fishers who had taken part in previous surveys, 2007-2017



Question 8: *"How often have you fished at this location?*

Figure C. Trend line of fisher visits to site, 2006-2017

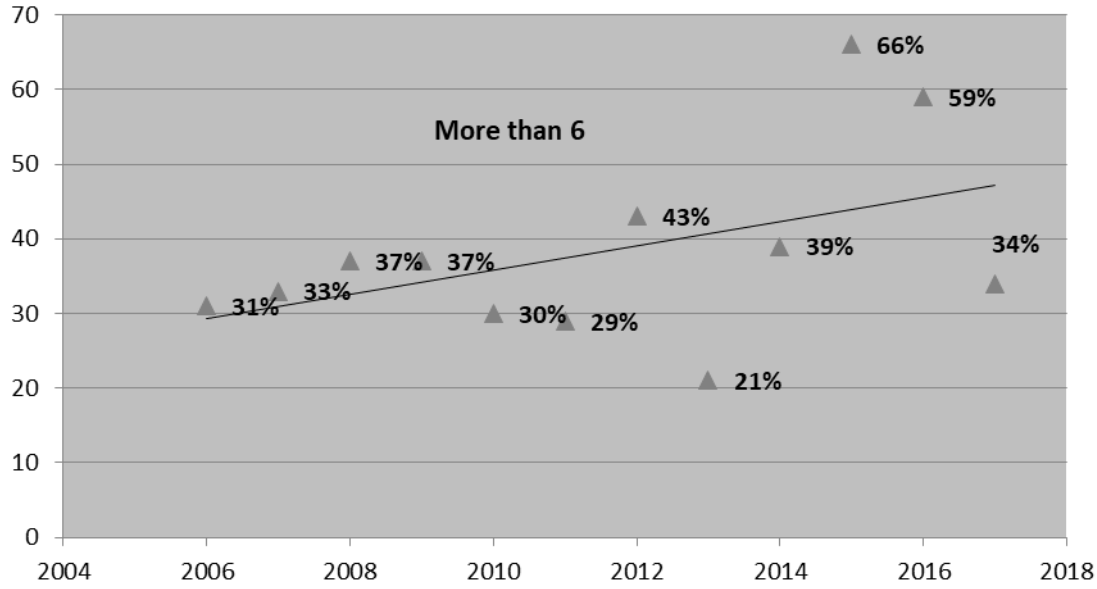
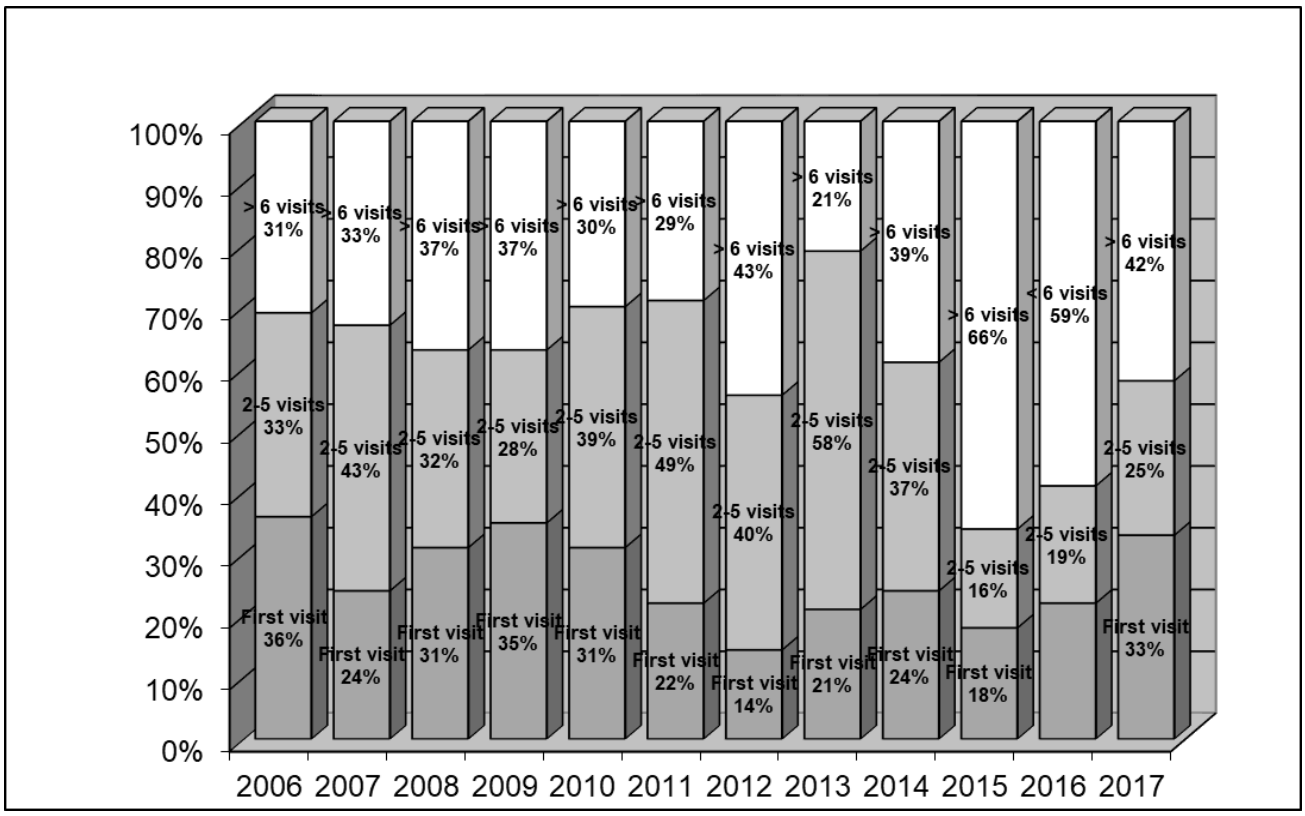


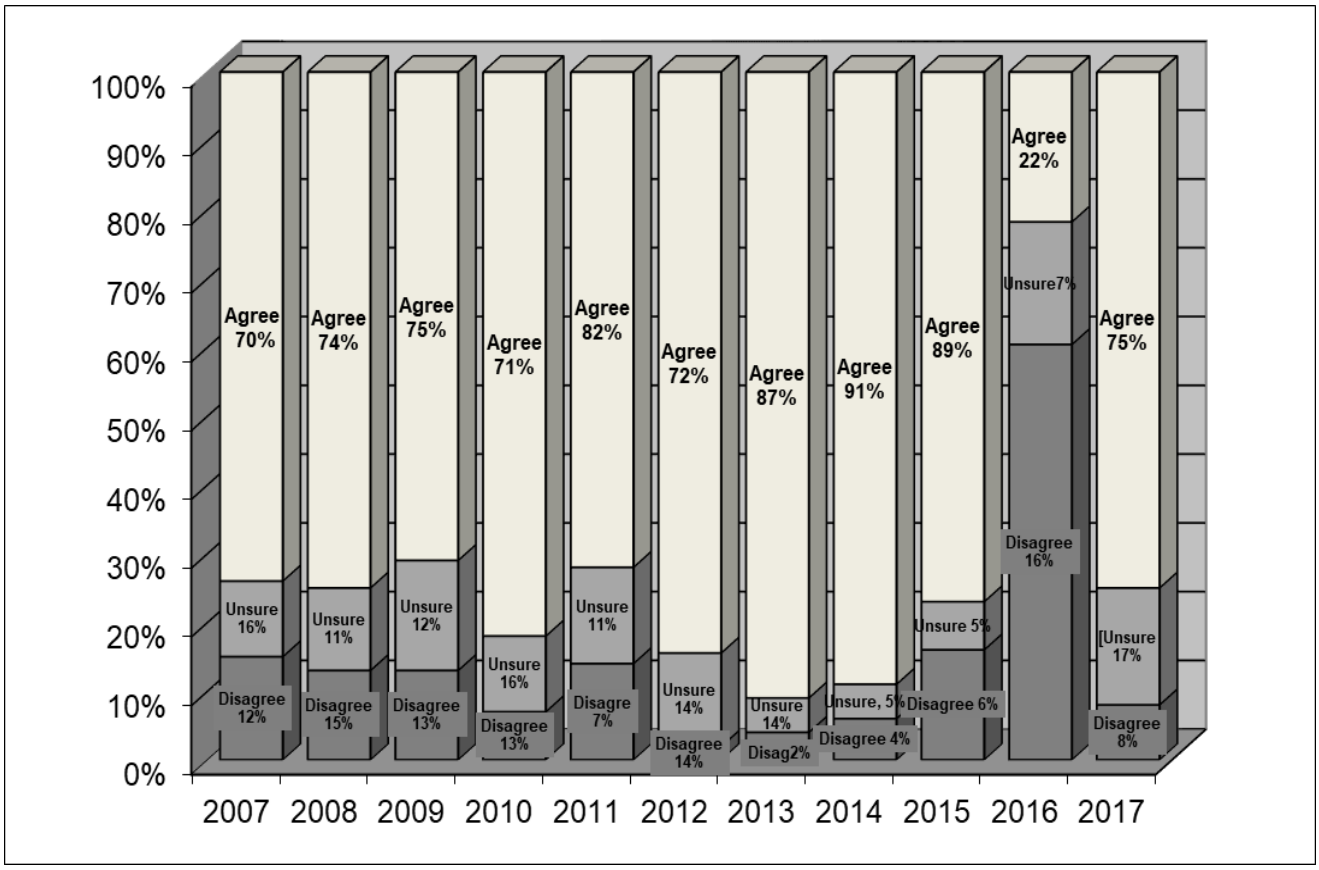
Figure D. Number of visits to site where surveyed, 2006-2017



Question 12. Beliefs about safety:
Severity of risk, vulnerability, efficacy of preventive actions, self-efficacy

Statement 1: *"Getting swept off the rocks is likely to result in my drowning"*

Figure E. Severity of risk of drowning if swept off rocks while fishing, 2006-2017



Statement 3: *"Drowning is a constant threat to my life when rock fishing"*

Figure F. Severity of risk of drowning, 2006-2017

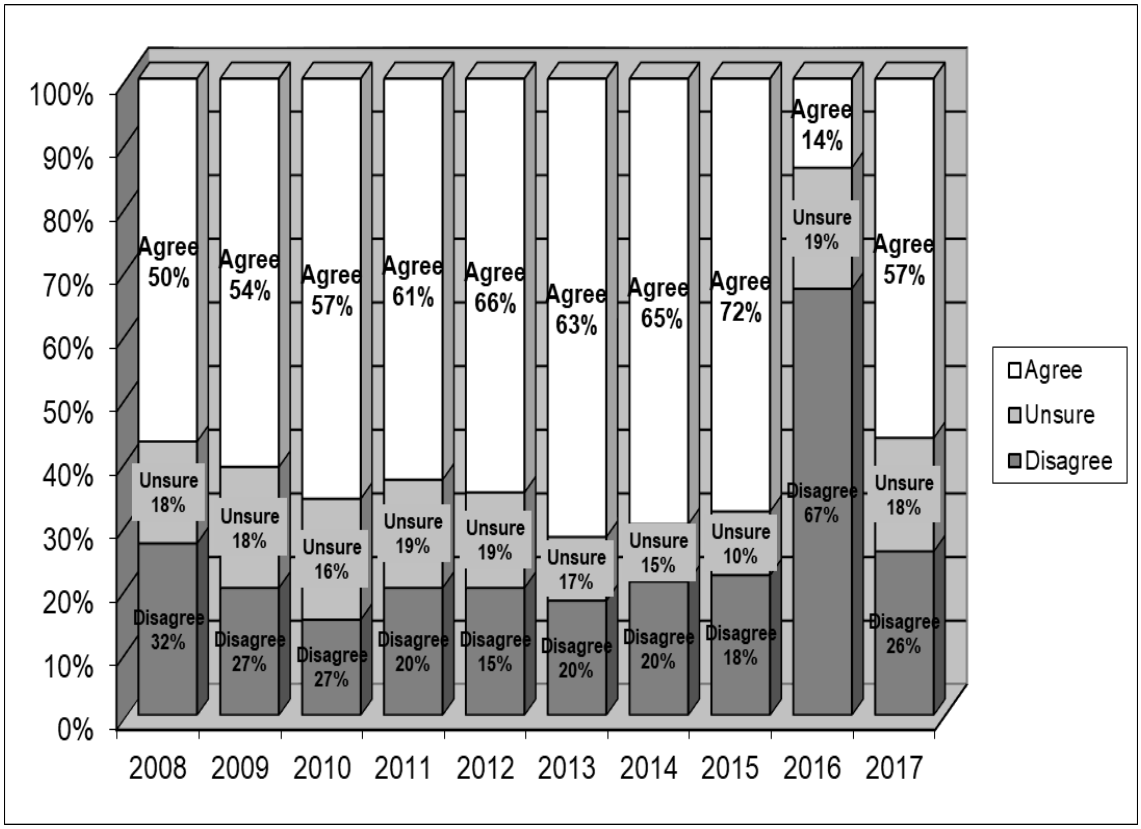
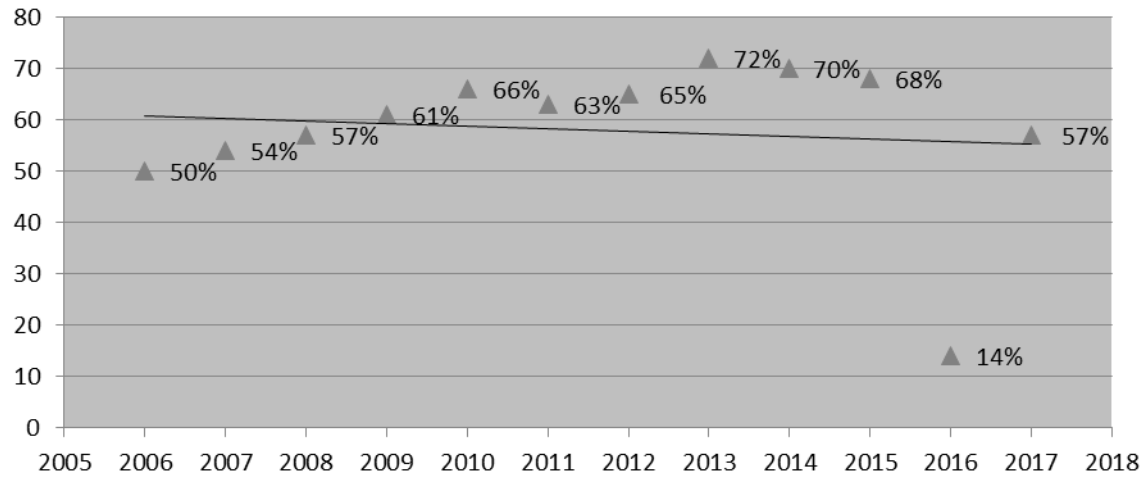


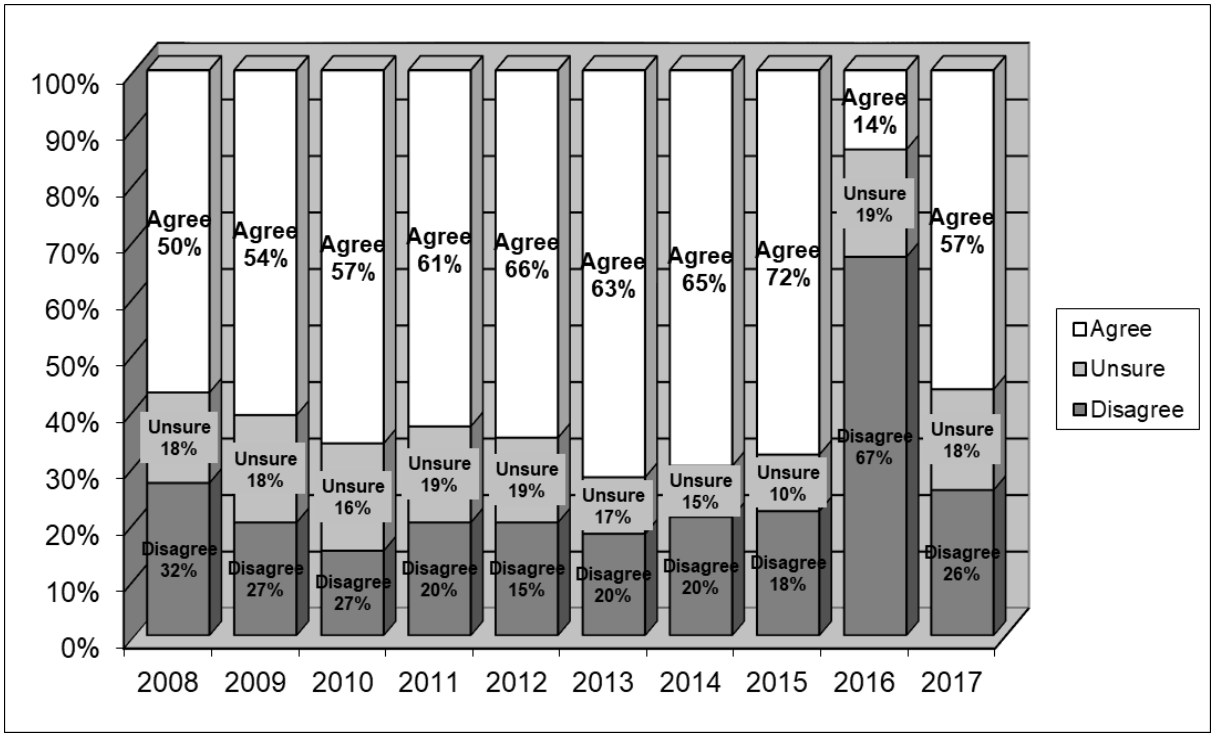
Figure F1. Trend line of the severity of risk of drowning while fishing, 2006-2017

Statement 3: % of fishers who agree *"Drowning is a constant threat to my life when rock fishing"*



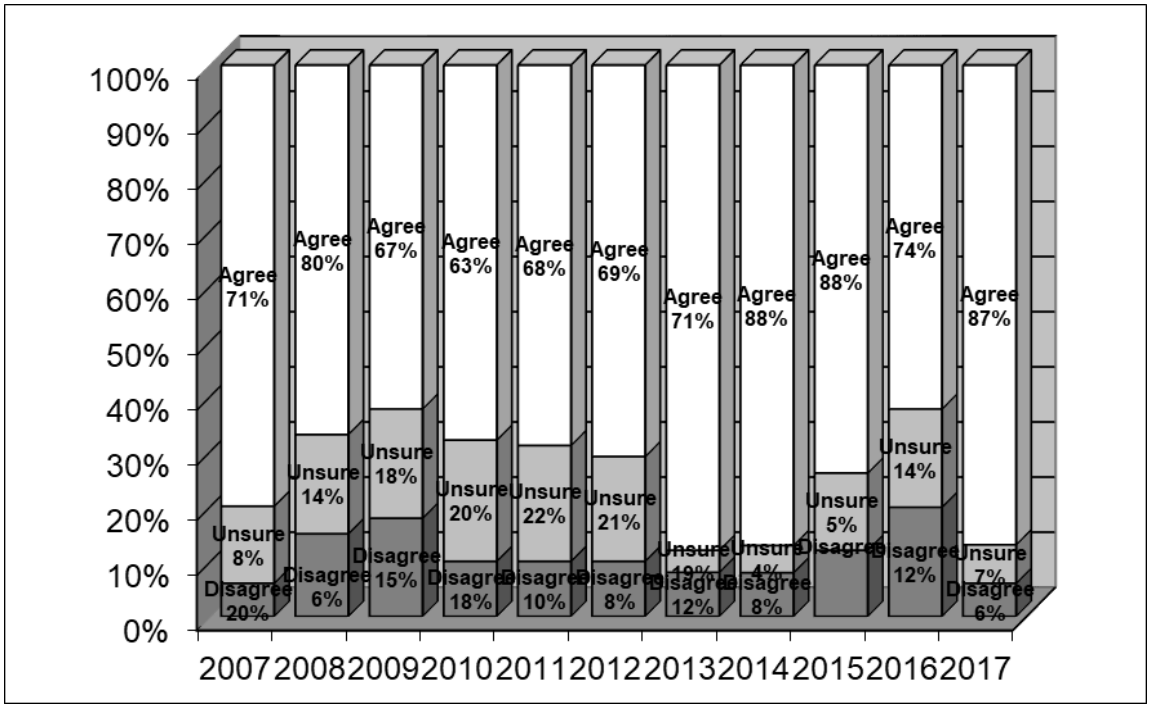
Statement 6: *"I am a strong swimmer compared with most other people"*

Figure G. Vulnerability – swimming competency, 2006-2017



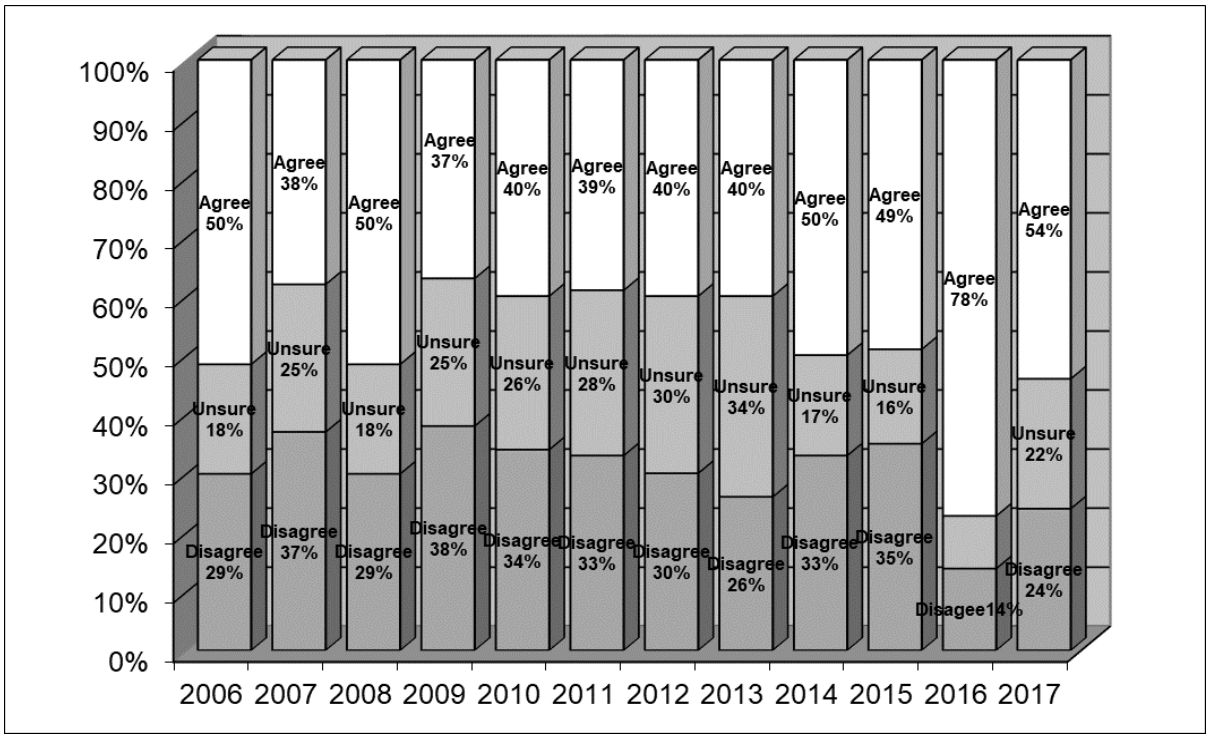
Statement 8 – *"Always wearing a lifejacketmakes fishing a lot safer"*

Figure H. Efficacy of Preventive action – wearing a lifejacket, 2006-2017



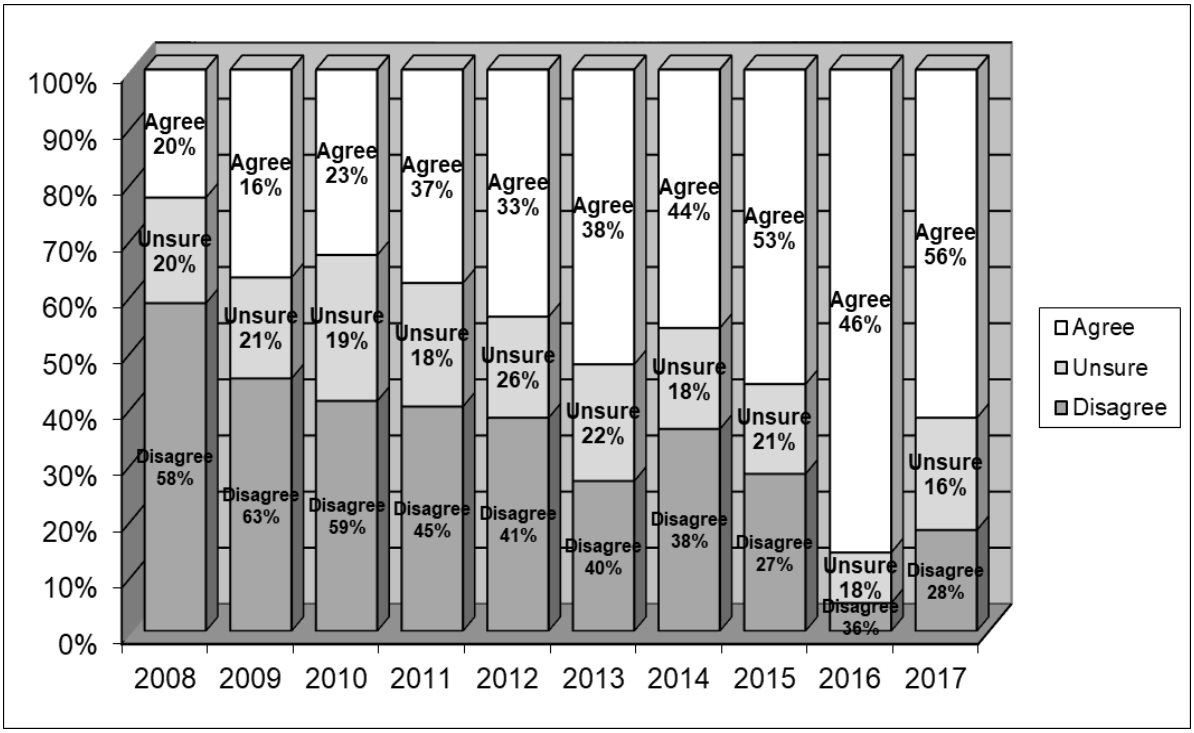
Statement 10 – "*My local knowledge of this site means I'm unlikely to get caught out"*

Figure I. Self-Efficacy of Preventive action – local knowledge, 2006-2017



Statement 11: *"My experience of the sea will keep me safe when fishing"*

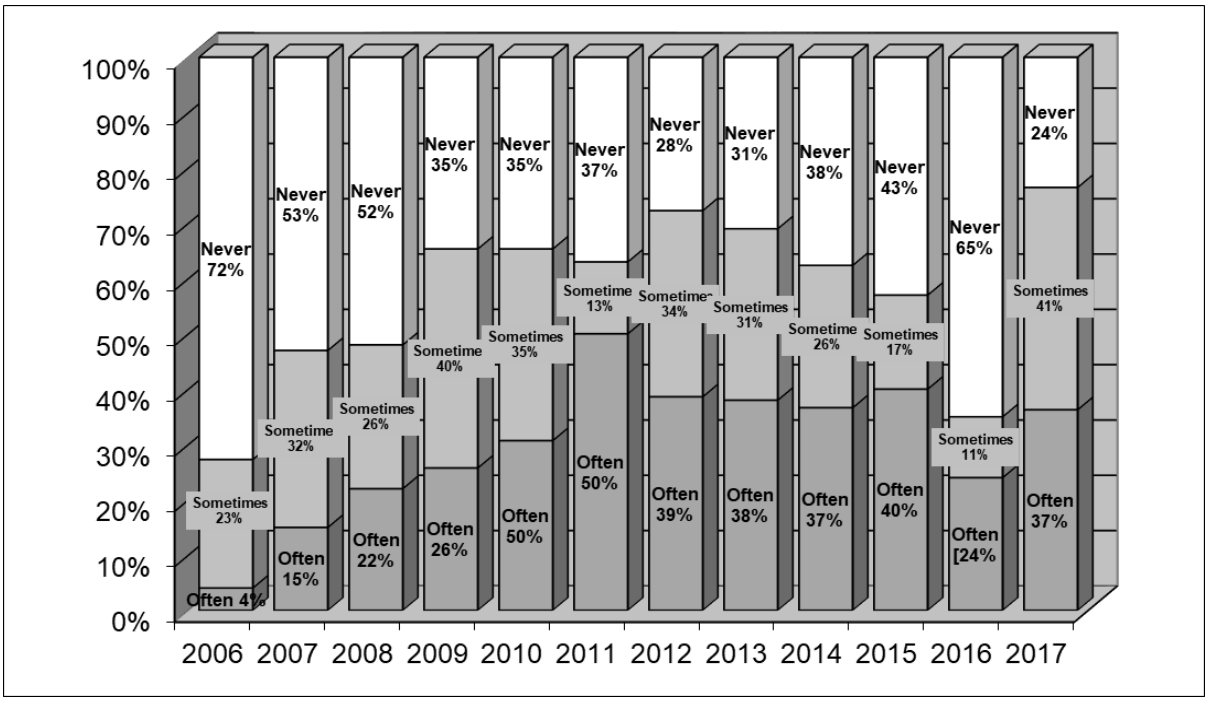
Figure J. Self-Efficacy of Preventive action – knowledge of the sea, 2006-2017



Question 13 Self-reported behaviours

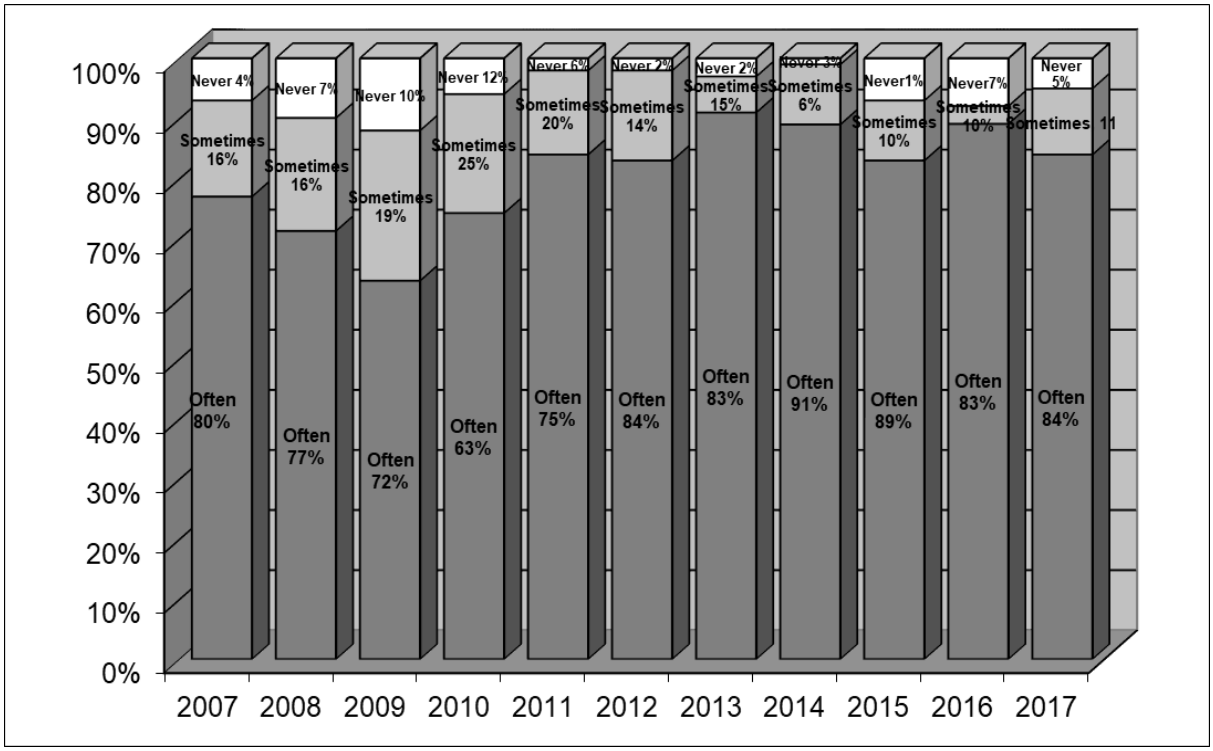
QUESTION 13 – 1 – "When fishing from rocks do you wear a lifejacket?"

Figure K. Self–reported safety behaviour 1, 2006-2017



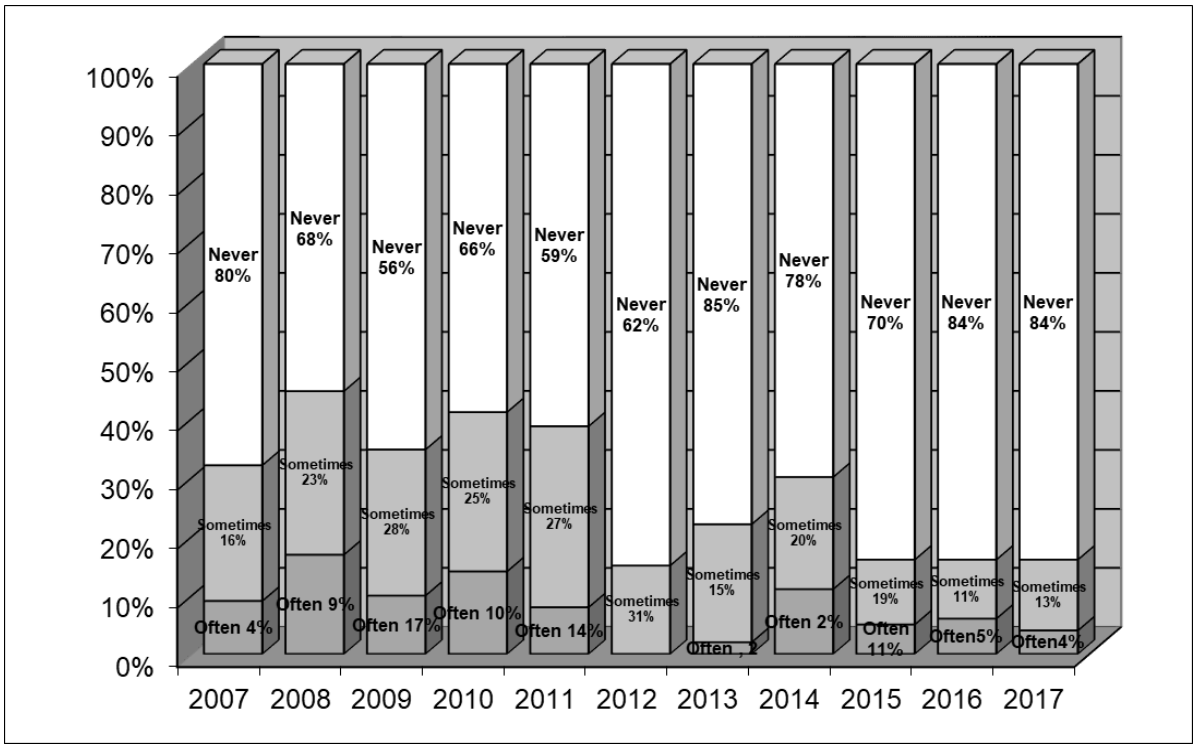
QUESTION 13 – 2 – "When fishing from rocks do you check weather beforehand?"

Figure L. Self–reported safety behaviour 2, 2006-2017



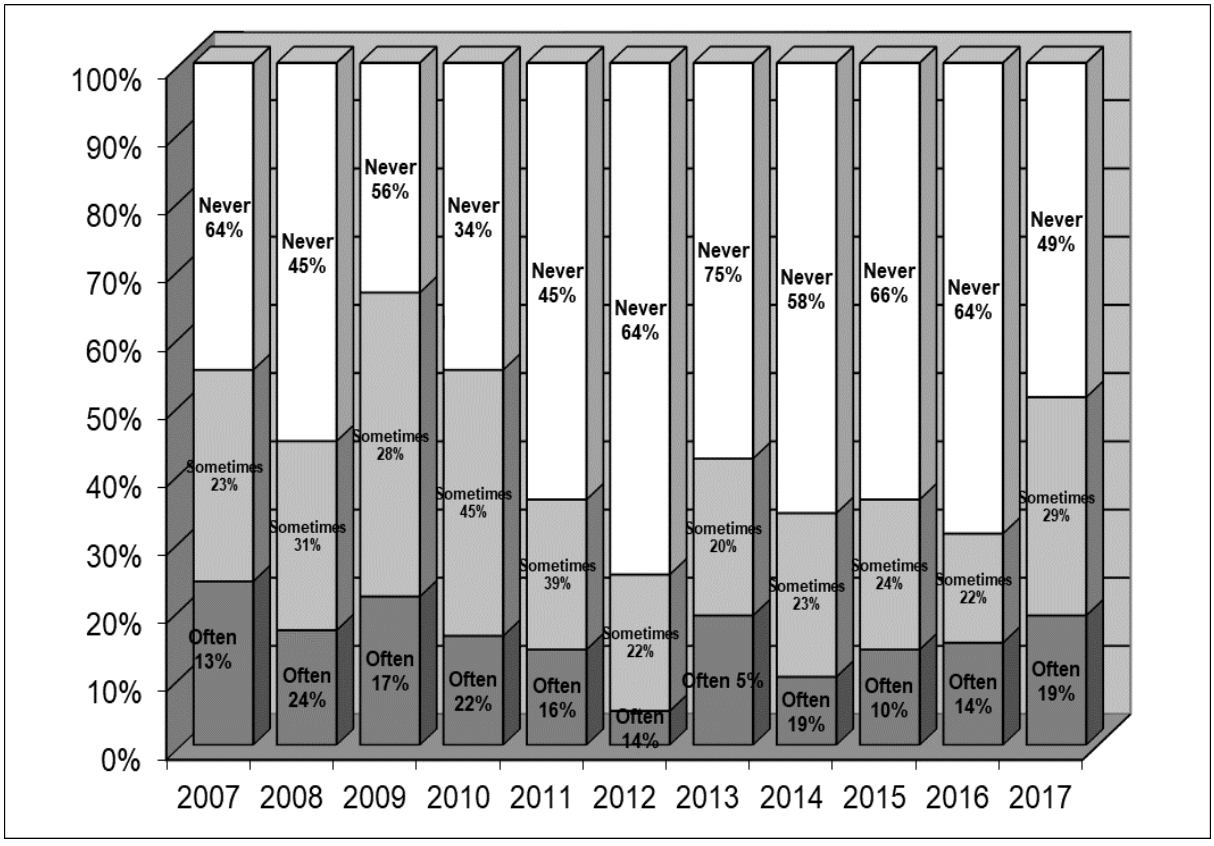
QUESTION 13 – 3 "When fishing from rocks do you drink alcohol?"

Figure M. Self–reported safety behaviour 3, 2006-2017



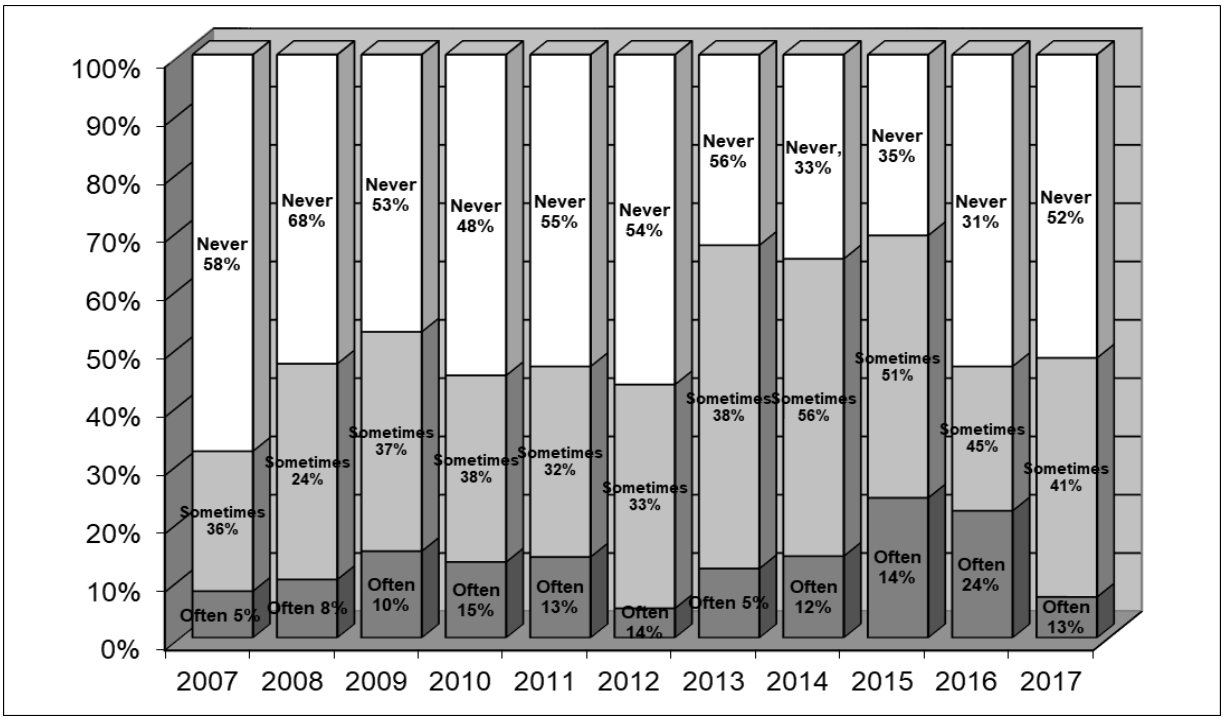
QUESTION 13 – 4 "When fishing from rocks do you wear gumboots or waders?"

Figure N. Self–reported safety behaviour 4, 2006-2017



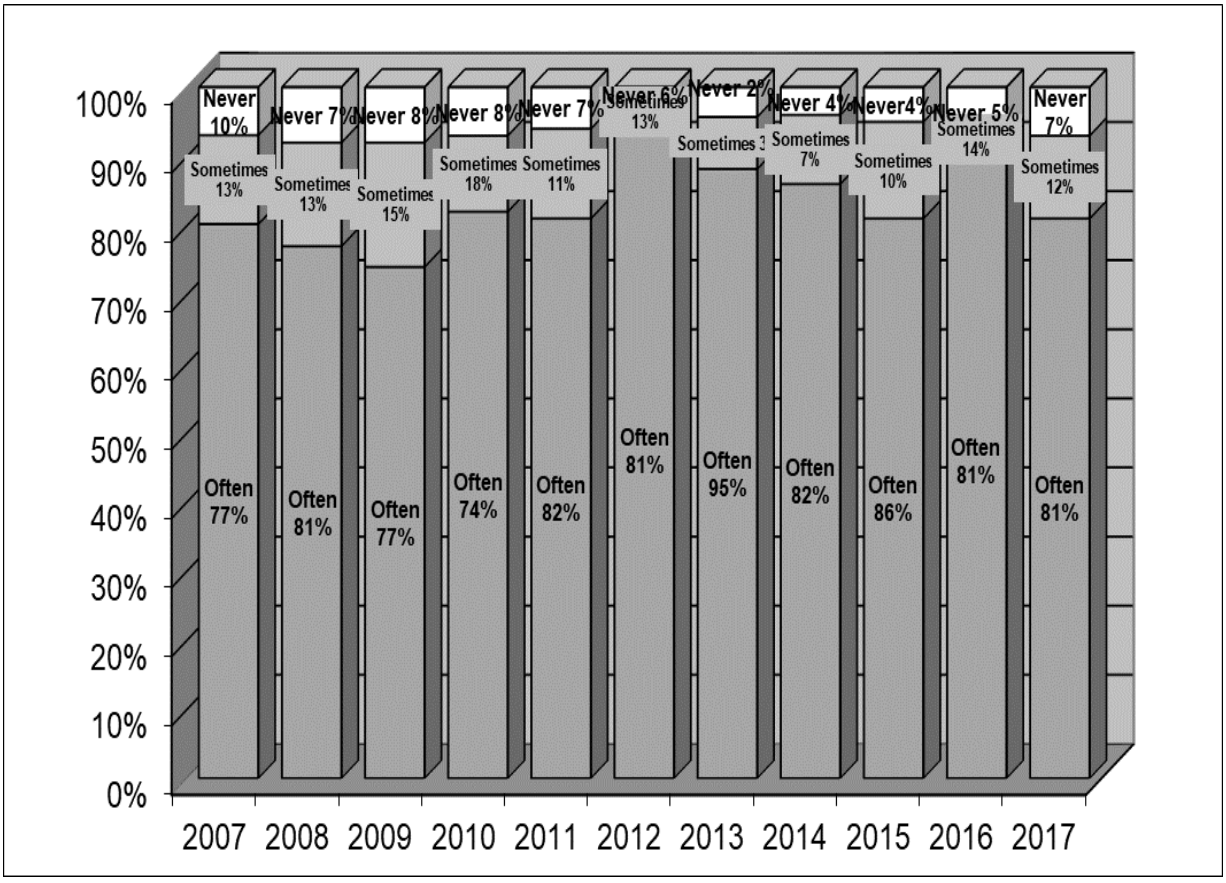
QUESTION 13 – 5 "When fishing from rocks do you turn you back on the sea?"

Figure O. Self–reported safety behaviour 5, 2006-2017



QUESTION 13 – 6 "When fishing from rocks do you carry a cell phone"

Figure P. Self–reported safety behaviour 6, 2006-2017



QUESTION 13 – 7 "When fishing from rocks do you go down the rocks to retrieve snagged line?"

Figure Q. Self–reported safety behaviour 7, 2006-2017