

Safeswim Impact Evaluation

Aucklanders' awareness and behaviour one year on

Katja Rangivek, Jesse Allpress, Brian Osborne, Ting Huang

December 2019

Technical Report 2019/026



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Executive summary

Safeswim is Auckland's programme for informing the public about beach and lagoon water quality to prevent illnesses. In 2017, the programme was significantly overhauled and Auckland Council's Research and Evaluation Unit (RIMU) was asked to evaluate the impact of these changes. This report is a follow-up to that initial evaluation. It outlines the improvements that were made to Safeswim as a result of last year's evaluation and provides a summary of how Aucklanders' awareness and behaviour has changed since the previous evaluation. Data were collected through beach intercept surveys, online surveys, a trial placing pavement graphics, and a trial of using beach ambassadors to encourage beach visitors to use Safeswim.

Improvements to Safeswim for the 2018/2019 period

- The Safeswim website continued to be refined in the lead-up to the 2018/2019 summer. This includes removal of the ambiguous 'amber' water quality alert, the addition of a 'black' confirmed wastewater overflow alert, and the development of the ability to create custom email and phone alerts.
- Safeswim beach ambassadors engaged with more than 5000 Aucklanders over the summer. Ambassadors used a behaviour influencing script to increase the likelihood of beach visitors using Safeswim in the future and sharing it with their friends and family.
- A range of improvements were made to on-beach digital signs, including redesigning the content layout to improve comprehension and trialling the use of pavement graphics (wayfinding) to 'nudge' beach visitors to engage with the digital sign at Mission Bay.

Perceptions of water quality

- Good water quality remains important to a large majority of respondents (95%).
- Almost half (49%) rated water quality of Auckland beaches as 'good' or 'excellent', overall.
- Sixty-one per cent of respondents were able to correctly identify human and animal faeces as the main contaminant causing Auckland's beaches to be unsafe to swim.

Awareness, trust and usage of water quality ratings

- An increasing percentage of respondents are aware that water quality ratings exist (64%, up seven percentage points from the 2017/2018 summer).
- One in two respondents report having heard of Safeswim.
- The number of people who have visited the Safeswim website is similar to the previous survey (13% in 2017/2018 and 15% in 2018/2019).
- Knowledge of what Safeswim is has also increased (56%, up six percentage points from 2017/2018).

Where people hear about Safeswim

- Social channels remain the most important way in which people heard about Safeswim.
- Thirty per cent of respondents learn about Safeswim by word of mouth and 16 per cent from Facebook (down from 22% post-rollout).
- Newspapers have gained in importance since the last evaluation (5% post-rollout up to 16% at the follow-up).

- Beach ambassadors also played an important role in informing respondents about Safeswim (5% of online panellists and 16% of beach visitors).

Use of Safeswim and checking water quality

- An increasing number of respondents think that it is important to check water quality before swimming (65 per cent pre-rollout, 73 per cent post-rollout and 80 per cent at the follow-up).
- Information about water quality is easy to find for only 49 per cent of respondents, however.
- 35 per cent report that people close to them often check the water quality before swimming.
- The awareness of the importance of checking water quality does not yet translate into action. 11 per cent of respondents check the water quality before swimming. This is likely a reflection of the widely studied ‘attitude-behaviour gap’ – the phenomenon that a shift in attitudes is necessary but not sufficient in and of itself to bring about change. A supportive environment – both physical and social – is also required in order for widespread behaviour change to occur.
- Although habitual checking of water quality is low, once someone is aware of poor water quality it does appear to have an impact on self-reported swimming behaviour. Only six per cent of survey respondents reported swimming at some point in the past despite being told the water quality was poor (down slightly from 9% a year prior).

This year’s evaluation findings demonstrate that the initial positive impacts observed following the rollout of the new Safeswim programme remain, but by and large have not changed much over the last year. Some notable challenges need to be overcome to install the habit of using Safeswim.

Table of contents

1.0	Introduction.....	6
1.1	Behavioural insights-based improvements to Safeswim	8
1.1.1	Improvements to the Safeswim website	8
1.1.2	Recruitment of Safeswim ambassadors	8
1.1.3	Improvements to digital signs.....	9
1.2	Evaluating improvements to Safeswim	9
2.0	Results.....	11
2.1	Water quality and Aucklanders	11
2.2	Awareness, trust and usage of water quality ratings	12
2.3	Attitudes toward and behaviour of checking water quality	14
2.4	Influence of water quality on swimming behaviour	16
2.5	Where people heard about Safeswim	17
2.6	Beach ambassadors.....	18
2.7	Safeswim website	19
2.8	Pavement graphics and ‘nudging’	21
3.0	Conclusion.....	23
	Appendix A	24
	Appendix B	26

1.0 Introduction

Water quality matters to Aucklanders and poor water quality in Auckland's beaches and lagoons is often due to contamination from faecal matter. Some sources of contamination include wastewater and stormwater overflows during heavy rain, dry-weather wastewater system faults, poorly maintained private septic systems, and effluent from animals such as birds, dogs, and livestock. Depending on the area, these contaminants vary in frequency and duration.

Poor water quality exposes swimmers and people engaged in water activities at risk of illness.¹ To help Aucklanders avoid such illness Auckland Council has implemented Safeswim, a programme for informing the public about beach and lagoon water quality. It is led by Auckland Council and Watercare, in partnership with Auckland Regional Public Health Service, and Surf Lifesaving Northern Region.

Safeswim existed for several years as a weekly monitoring programme before it was redeveloped into a real-time predictive model underpinned by validation sampling just prior to the 2016/2017 summer season. This model draws on frequently updated weather, tide and wastewater system data in order to predict current and future water quality. It provides forecasts up to two days into the future. The forecasts are updated regularly as weather and other conditions change. This information is available on the Safeswim website² and on digital signs on Mission Bay beach, St. Mary's Bay beach, and Takapuna beach.

This report refers to three phases of the Safeswim programme as follows:

Reference used in the report	Time	Changes to Safeswim
Pre-rollout	Summer 2016/17	<ul style="list-style-type: none">• weekly monitoring of water quality
Post-rollout	Summer 2017/18	<ul style="list-style-type: none">• real-time modelling of water quality• information available for 92 locations• new website• new on-beach signage• public communications
Follow-up	Summer 2018/19	<ul style="list-style-type: none">• real-time modelling of water quality• information available for 108 locations• improvement of the website• improvement of on-beach signage• new beach ambassadors

The research approach taken at all three time periods was consistent, in order to make results as comparable over time as possible. Other factors, such as differences in weather

¹ <http://www.mfe.govt.nz/publications/fresh-water/microbiological-water-quality-guidelines-marine-and-freshwater-0>

² <https://www.safeswim.org.nz/>

and the resultant number of poor water quality events in each summer period may have influenced awareness, in addition to Auckland Council's Safeswim-related media campaign. In particular, the 2018/2019 summer was notably drier than the 2017/2018 summer, with fewer poor water quality events. This may have influenced usage of the site, as beach visitors may have (correctly) assumed that the likelihood of poor water quality events is lower in good weather conditions.

1.1 Behavioural insights-based improvements to Safeswim

After the 2017/18 summer, the Research and Evaluation Unit (RIMU) published an evaluation of the impact of the changes to the [Safeswim programme](#).³ The focus of that evaluation was on changes in Aucklanders' awareness and behaviour with regard to the use of Safeswim. The report also provided a number of recommendations to increase awareness and use of the programme, a number of which drew on behavioural insights principles. Behavioural insights is a method of applying ideas from psychology and other social sciences on the drivers of people's behaviour, which can be used to improve programmes, services and policies.

The changes that resulted from these recommendations are summarised below.

1.1.1 Improvements to the Safeswim website

The Safeswim website continued to be refined in the lead-up to the 2018/2019 summer. This includes further prioritising the main messages, the removal of the ambiguous 'amber' water quality alert, the addition of a 'black' confirmed wastewater overflow alert, and the development of the ability to send custom email and phone alerts.

The focus of the changes to the website and water quality icons was to increase user comprehension and minimise confusion regarding how to interpret the website's main messages.

The custom email and phone alerts were developed to provide personalised functionality and to enable beach users to passively receive notifications as desired, rather than having to remember to visit the Safeswim website every time they visited the beach.

1.1.2 Recruitment of Safeswim ambassadors

A key recommendation in the 2017/2018 evaluation was to better utilise the influence of word of mouth to encourage people to use Safeswim. RIMU subsequently established Safeswim beach ambassadors to engage Auckland beach users over the summer period. The aim was to increase usage of the programme. Ambassadors were hired by Surf Life Saving Northern Region and wore surf lifesaving uniforms.

Safeswim ambassadors were stationed on the following beaches:

- Herne Bay
- Kohimarama Beach
- Milford Beach
- Mission Bay
- Red Beach
- St Heliers Beach
- Takapuna Beach.

³ Allpress, J. A., Clark, A., Rootham, E. M., Huang, T. (2018). *Safeswim impact evaluation: Have improvements to Safeswim changed Aucklanders' awareness and behaviour?* Auckland Council technical report, TR2018/004

Ambassadors used a script designed to increase the likelihood of beach visitors using Safeswim in the future and sharing it with their friends and family. This script drew on the following behavioural science principles:

- **Personal contact:** Ambassadors engaged beach visitors in-person, a more impactful communication method than passive forms of advertising and marketing.
- **Authority:** Ambassadors were Surf Lifesavers, wearing official Surf Lifesaving uniforms. Lifesavers are well-respected and are figures of authority in the beach environment.
- **Modelling:** The script included ambassadors modelling/demonstrating to beach visitors how they personally used Safeswim.
- **Social norm messages:** What other people are doing has a reliable impact on people's behaviour. Ambassadors that many Aucklanders were already using Safeswim but the ambassadors' role was to spread it even further.
- **Commitments and encouraging word-of-mouth sharing:** At the end of each conversation ambassadors sought a verbal commitment from beach visitors that they would tell a friend or family member about Safeswim when they next saw them.

Records show the ambassadors engaged more than 5000 Aucklanders over the 2018/2019 summer period. This is discussed in more detail in section 2.6.

1.1.3 Improvements to digital signs

A range of improvements were made to digital signs situated near beaches, including redesigning the sign's layout to improve comprehension of the main messages, and trialling the use of pavement graphics to 'nudge' beach visitors to engage with the digital sign at Mission Bay.⁴ This will be discussed in more detail in section 2.8.

1.2 Evaluating improvements to Safeswim

This evaluation follows on from an evaluation conducted in 2017/2018. It focuses on changes in Auckland beach users' awareness, knowledge and behaviour in the second summer following the updating of Safeswim.

Four sources are used to evaluate impacts over time:

1. Intercept surveys were carried out:

Phase	Date	Count
Post-rollout	February 2018	627
Follow-up	March - April 2019 ⁵	877

2. Online surveys of Aucklanders were conducted using a professional market research panel. These surveys were carried out:

Phase	Date	Count
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⁴ A 'nudge' is concept in behavioural insights that refers to an intervention that gently steers people toward a desired behaviour.

⁵ Mission Bay (n = 278), Red Beach (n = 157), Takapuna Beach (n = 267), Eastern Beach (n = 175).

Pre-rollout	April 2017	1034
Post-rollout	February 2018	1024
Follow-up	February - March 2019	1034

3. Results from a trial of placing pavement graphics leading to the digital sign at Mission Bay in December 2018.
4. Results from a trial of using beach ambassadors who engage with over 5000 Aucklanders over the 2018/2019 summer period.

The three online surveys were carried out using the same methodology. Quotas were applied to match as closely as possible to the Auckland population in terms of age, ethnicity and sub-region. To be included in the surveys, respondents needed to live in Auckland and have swum, supervised children who have swum, or gathered shellfish in Auckland in the last 12 months. The three surveys used largely the same questions and were conducted using separate samples. See Appendix A and Appendix B for further information on sample characteristics.

Although all survey questions were designed to minimise social desirability response bias (i.e. providing a 'correct' answer or response that reflects socially desirable characteristics reflecting a psychological need for social approval)⁶, due to the nature of many of the survey questions it is possible that some respondents overstated their awareness and usage of Safeswim. Questions were ordered in such a way to minimise participants being able to work out the topic of the survey (and therefore the 'correct' answer), and open-ended and general knowledge questions preceded more specific Safeswim-related questions.

⁶ Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity*, 47, 2025- 2047.

2.0 Results

This section presents results on the following aspects:

- The attitudes and awareness of respondents regarding water quality, checking, and the usage of Safeswim based on the findings from the online and beach intercept surveys (Section 2.1-2.5)
- The implementation of beach ambassadors (Section 2.6)
- A short evaluation of the website (Section 2.7)
- Trial of pavement graphics to 'nudge' beach visitors to digital signs (Section 2.8).

2.1 Water quality and Aucklanders

Water quality remains important to Aucklanders, with 95 per cent of respondents rating good water quality as important to them. This is largely similar to previous years' surveys (92% in 2017, 94% in 2018).

Although water quality is seen as important, only half of the respondents (49%) rated the overall water quality at Auckland's beaches as 'good' or 'excellent' on a subjective rating scale. This reflects a decrease from 56 per cent pre-rollout, reflecting an increasing awareness of water quality issues amongst respondents.

Respondents are increasingly able to identify the primary source of water pollution likely to increase the human health risk associated with swimming. In the summer of 2016/17, 47 per cent of survey respondents could correctly identify human and animal faeces as the leading cause of some beaches and lagoons being unsafe to swim. Post-rollout this increased to 54 per cent in the 2017/18 summer, and again to 61 per cent in the 2018/19 summer (see Figure 1).

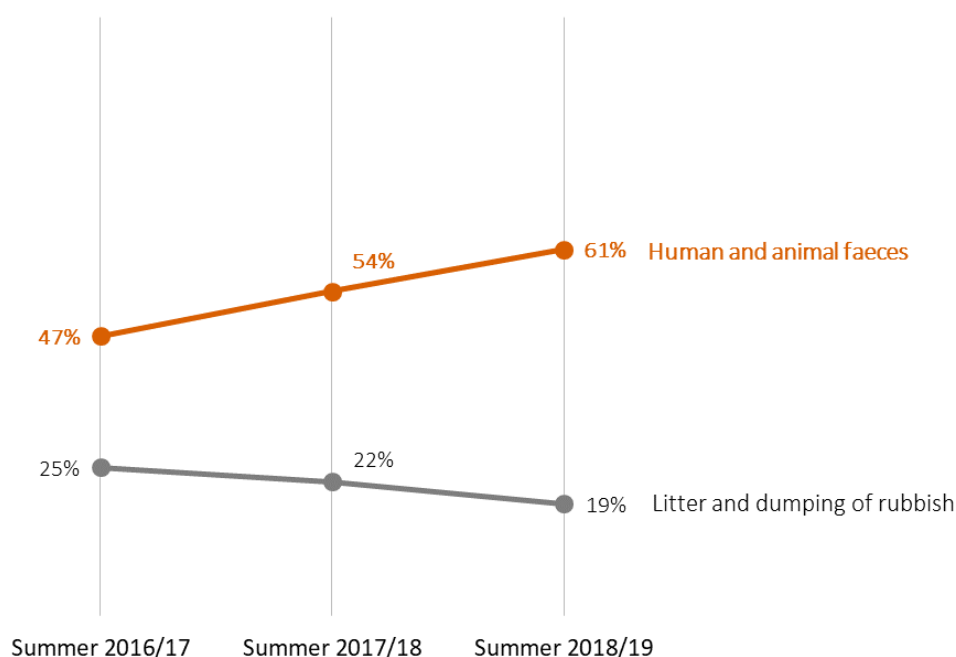


Figure 1. Proportion of the two main causes of water pollution identified by online panel members

2.2 Awareness, trust and usage of water quality ratings

There has been a slow but steady increase in the awareness of water quality ratings. In 2016/2017, 55 per cent of respondents knew of water quality ratings. This increased to 57 per cent and 64 per cent in the summers of 2017/18 and 2018/19, respectively.

The high level of trust in water quality ratings seen in previous surveys has remained constant. In all three surveys, 75 per cent of respondents who were aware some water quality monitoring is conducted in Auckland reported that they believe the existing ratings to be trustworthy (see Figure 2).

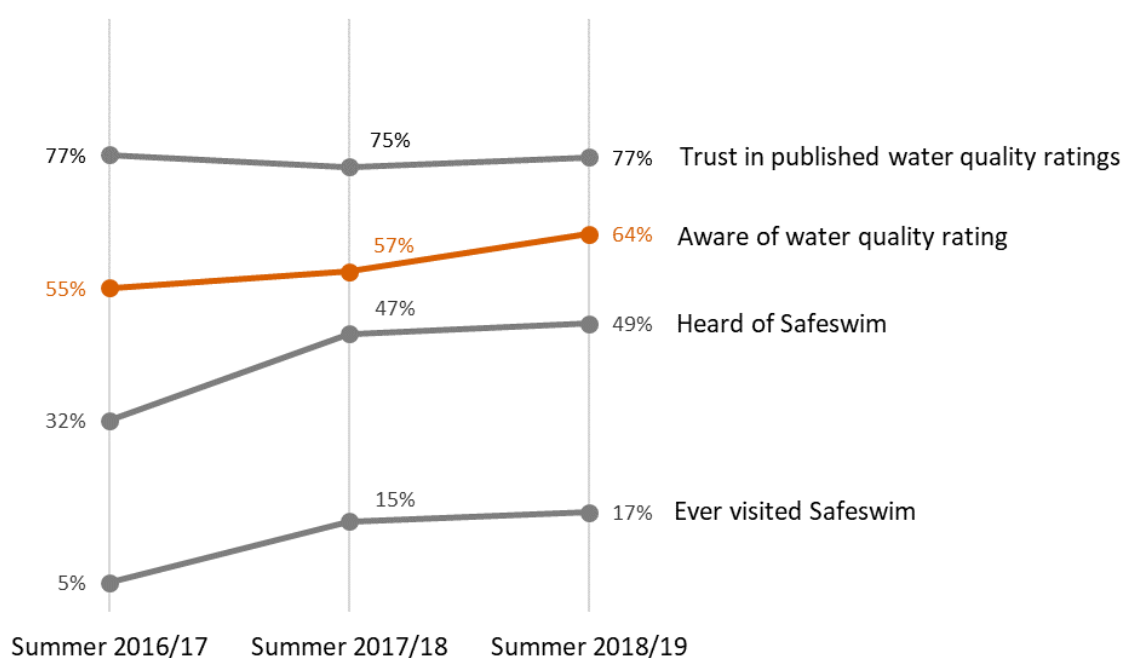


Figure 2. Online panel members' attitudes towards and usage of water quality ratings

After the rollout of the improved Safeswim programme, there was a strong uptake in the percentage of online panel members who had heard of and visited the website. The percentage of online panel members who had heard of Safeswim increased from 32 per cent pre-rollout to 47 per cent post-rollout, although this increase plateaued over the most recent summer (to 49% of respondents reporting having heard of Safeswim in 2018/19).

Similarly, the percentage of online panel members who have ever visited the Safeswim website increased notably in the first year following the rollout of the new website (from 5% to 15%), but there were no changes over the last year.

There has been a consistent increase in the knowledge of what Safeswim is. In all three surveys, respondents were asked to identify what the programme is, and the percentage of respondents who chose one or more of the correct answers has continued to increase. Pre-rollout, only one in four respondents (26%) could correctly identify what Safeswim is. Post-rollout, however, 40 per cent of online panel members and 50 per cent of beach visitors correctly answered with 'information on beach water quality'. In the follow-up survey, these

numbers have further improved to 50 per cent and 56 per cent for online panel members and beach visitors, respectively (see Figure 3).

However, Safeswim also offers information on other issues that are not well known. There has been little change in the proportion of respondents who identified that Safeswim offers warnings on hazards at beaches (between 23-25% of beach visitors and 33-35% of online panel members). Similarly, the proportion of respondents who know that the programme offers information on weather and tide information is consistently low (between 22-24% of beach visitors and 24-29% of online panel members).

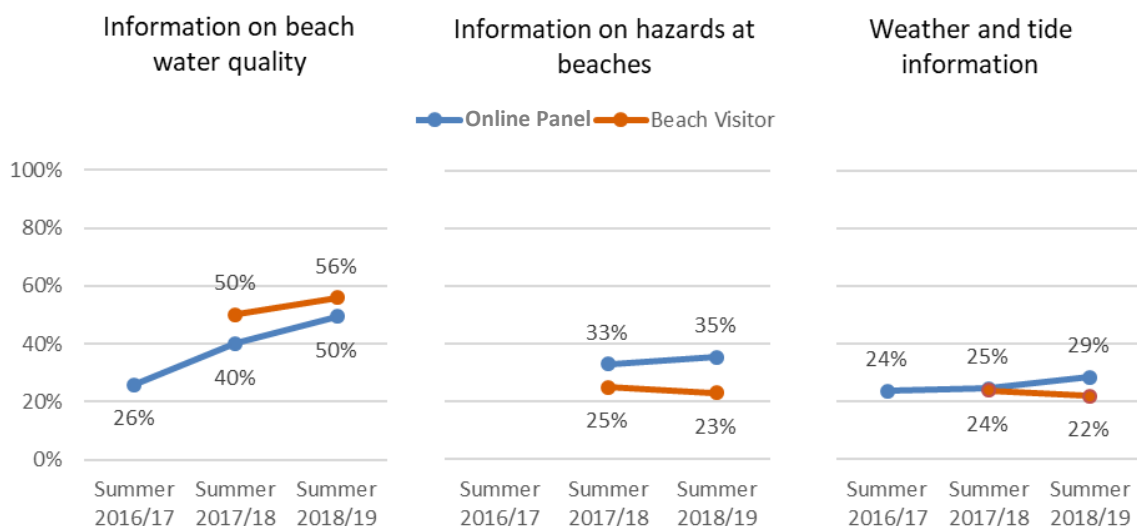


Figure 3. Proportion of online panel members and beach goers who correctly identify what Safeswim is

2.3 Attitudes toward and behaviour of checking water quality

Results suggest that there is a gradual shift in attitudes toward checking beach water quality. A majority (80%) of online panel members reported in 2019 that checking the water quality before swimming is important. This is an increase from the 65 per cent and 73 per cent from 2016/17 and 2017/18, respectively. The number of people who reported that other people often check water quality has remained static with a change of only two percentage points (see Figure 4).

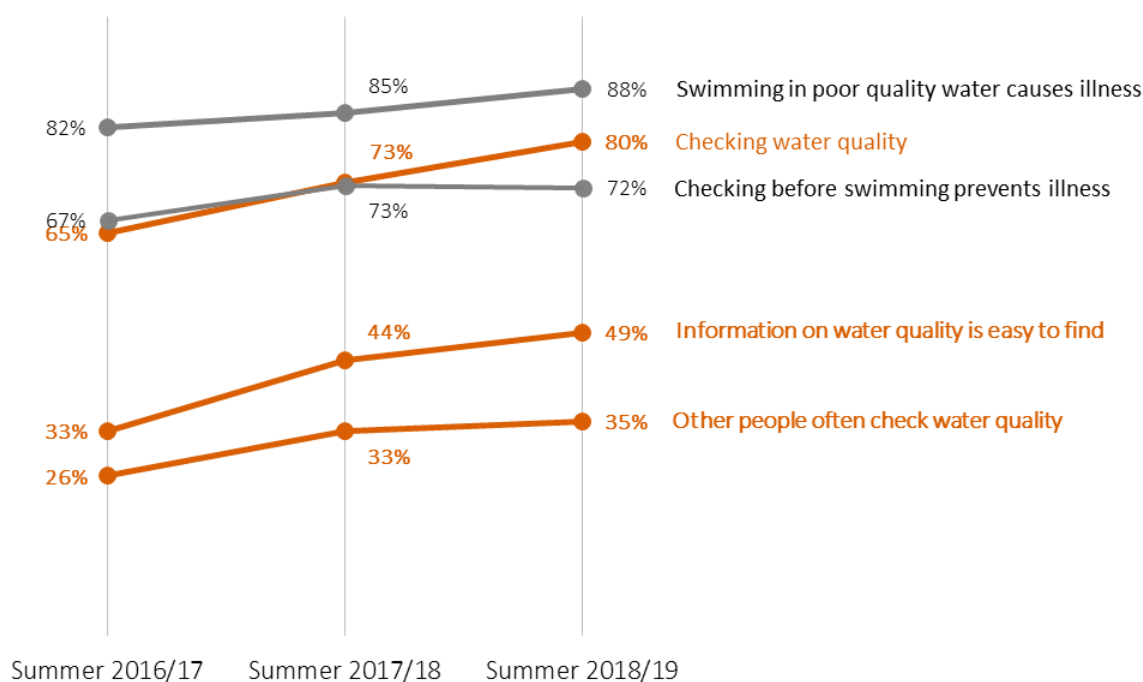


Figure 4. Proportion of online panel members who agree or strongly agree with statements regarding water quality and checking

Beach visitors are aware of the risks involved in swimming in poor quality water. Three-quarters (75%) of beach visitors 'agreed' or 'strongly agreed' with the statement that they understand the risks associated with swimming in polluted water. Only 3 per cent 'strongly disagreed' and 9 per cent 'disagreed'.

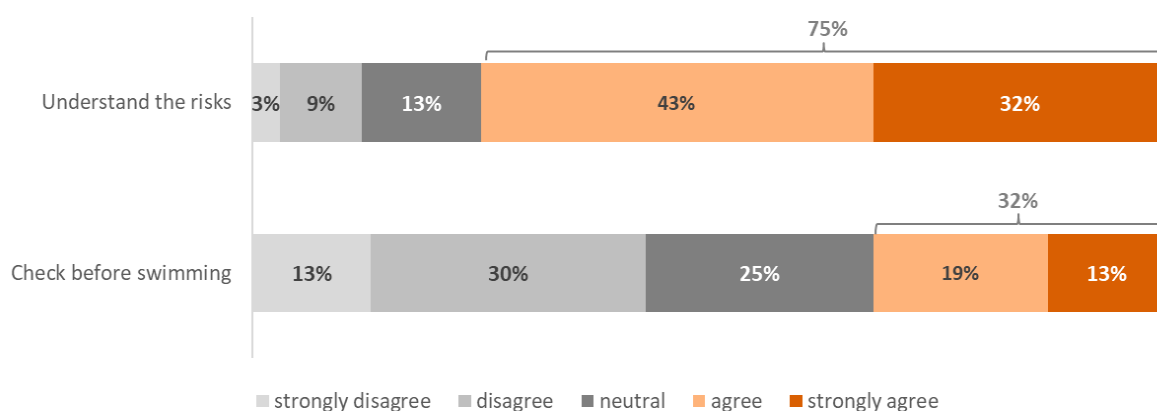


Figure 5. Beach visitors' attitudes towards risk and the checking of water quality

This understanding of risks does not always result in action, however. While the majority (75%) of beach visitors state they understand the risks involved in swimming in polluted water, only a smaller proportion check before swimming. Only 13 per cent and 19 per cent (totalling 32%) of people 'strongly agree' or 'agree' with the statement that they check water quality before swimming.

The proportion of beach visitors who had checked water quality using Safeswim is even lower. Only 11 per cent reported to have done so before going to a beach. This highlights the disconnect between increased awareness of Safeswim, the proclaimed and the action of checking the water quality. Note, it is also possible that 'checking water quality' for some respondents may have included a broader set of actions than just checking Safeswim (such as a visual check for pollution).

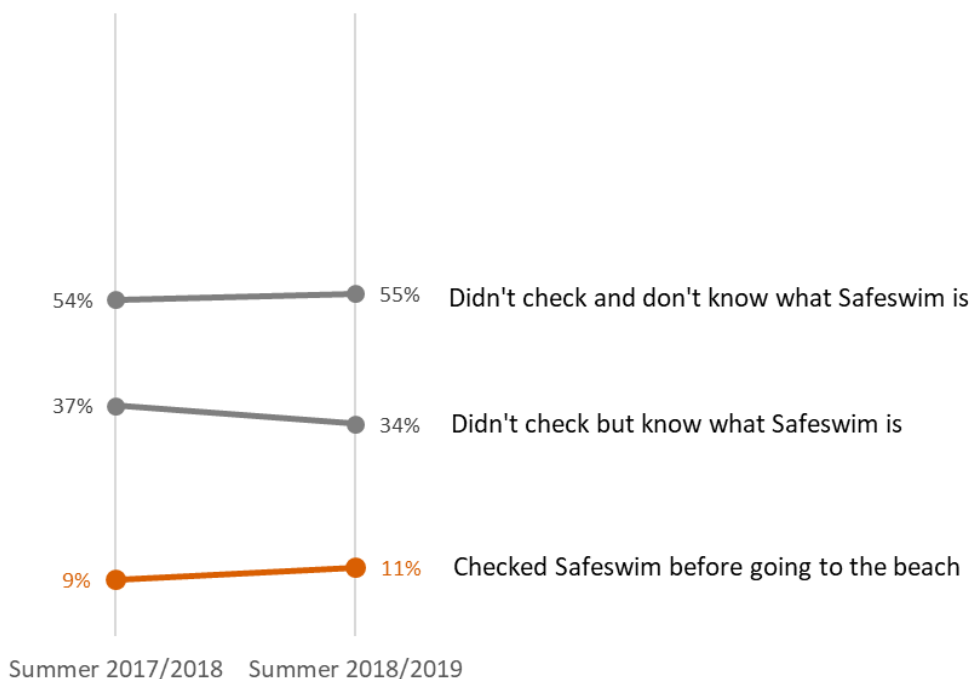


Figure 6. Proportion of beach visitors who used Safeswim before swimming at the day of the survey

2.4 Influence of water quality on swimming behaviour

Online panel members were asked to indicate whether water quality in general impacted their swimming behaviour. The percentage of respondents who reported avoiding swimming due to poor water quality at some point fluctuated over the years (between 53% and 59%). Also, there is a continued increase in the percentage of respondents who reported that water quality 'often' or 'always' influences which beach or lagoon they visit (37 per cent pre-rollout, 44 per cent post-rollout and 46 per cent at the follow-up).

Overall, this year 6 per cent of online panel members reported that they or their children, have swum at some point despite a sign or someone telling them the water quality was poor. This is similar to previous online surveys (8% pre-rollout and 9% post-rollout). Of those who had swum, a very small percentage (3%) reported developing some form of illness directly as a result. This was notably lower than the previous two summers (both around 20%), however this is likely a hard question for respondents to answer due to the general respiratory and gastrointestinal nature of water borne illnesses and the often long lag between swimming and illness.

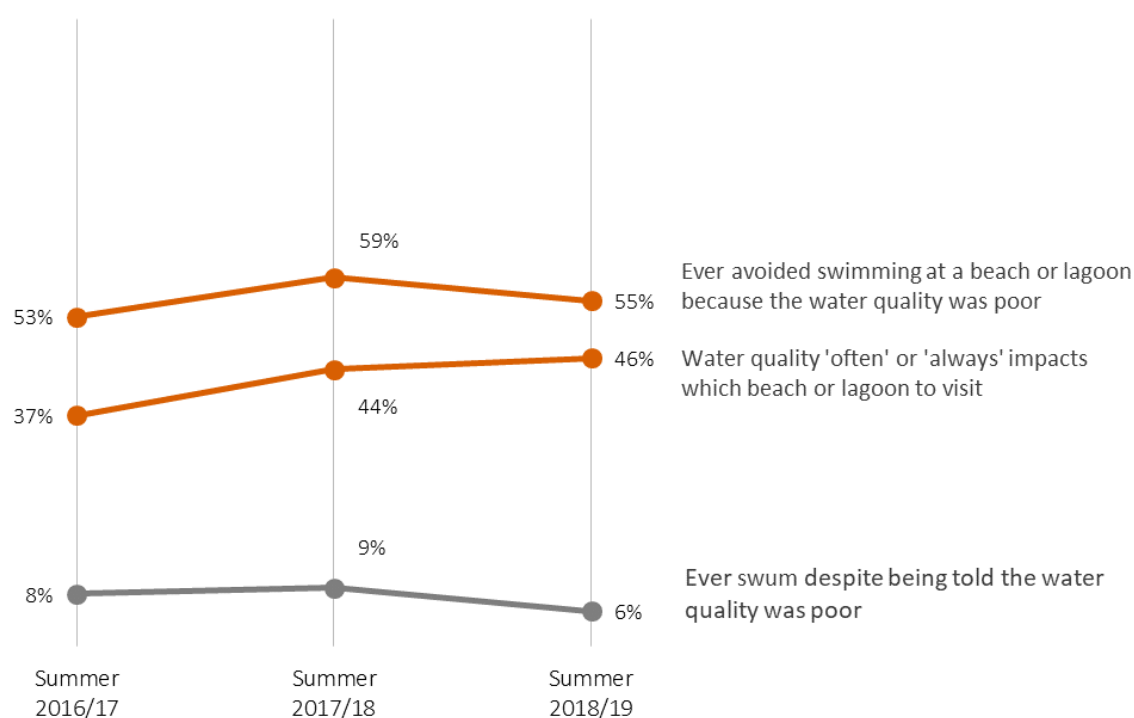


Figure 7. Impact of water quality on online panel members' swimming behaviour

2.5 Where people heard about Safeswim

In the post-rollout and follow-up surveys, participants were asked where they had heard of Safeswim prior to using it (see Figure 8 and Figure 9). In both surveys social channels were the most important means in which people learned about Safeswim. This means channels in which people were informed by friends and family such as word of mouth or Facebook. However, newspapers have gained in importance as a source of information with an increase from five per cent in 2017/18 to 16 per cent in 2018/19.

Beach ambassadors have been an additional source of information about Safeswim in the 2018/19 summer. Ambassadors were introduced in the 2018/19 summer to increase awareness of Safeswim by engaging beach users on popular Auckland beaches. The finding that five per cent of online panel members and 16 per cent of beach visitors reported that they learned of Safeswim from beach ambassadors shows that they had a positive impact.

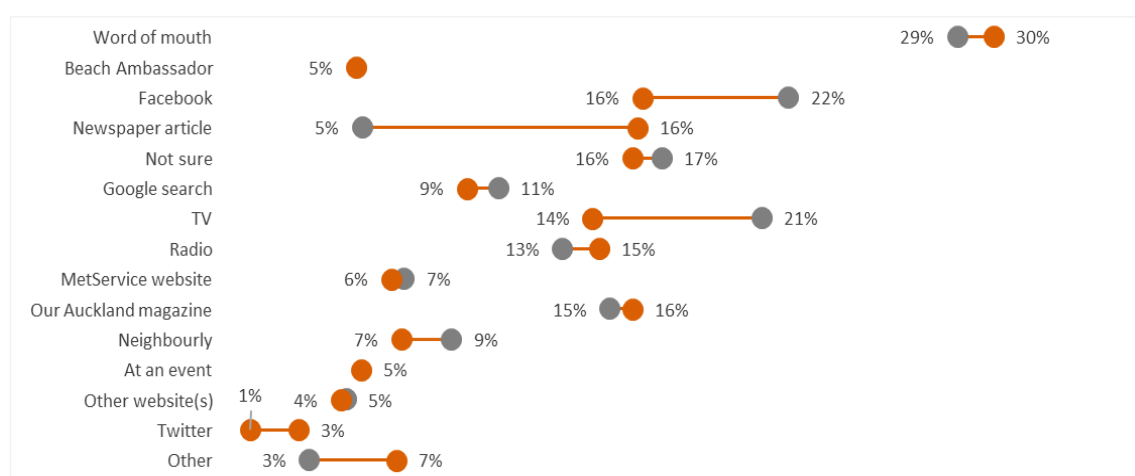


Figure 8. Where online panel members heard about Safeswim

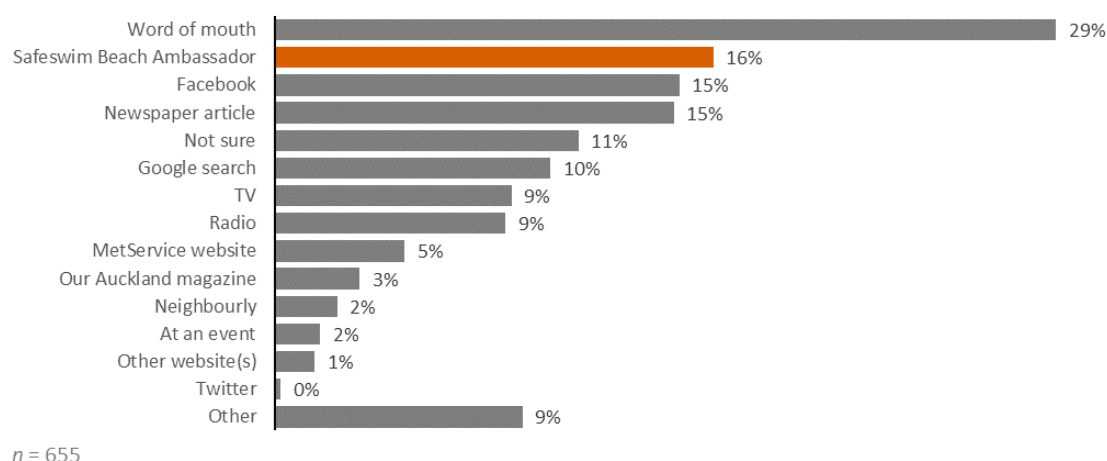


Figure 9. Where beach visitors heard about Safeswim

2.6 Beach ambassadors

Beach ambassadors were introduced as part of the behaviour change framework recommended in the previous report. Ambassadors were active on four beaches. Over a three-month period (December 2018 through to February 2019), the beach ambassadors engaged in 3149 unique conversations with a total of 5699 beach visitors. The highest proportion (37%) of that was at Takapuna Beach (see Figure 10).



Figure 10. Proportion of beach visitors ambassador engaged with by beach ambassadors

Beach ambassadors engaged beach visitors in conversations about Safeswim and water quality. In this manner, the information could be delivered in an easy, timely and personalised fashion. Beach ambassadors were provided with key talking points to use during their interaction with beach visitors, but were able to tailor the conversation to the knowledge and needs of each group of visitors.

Overall the interaction of beach ambassadors with visitors was positive and a high level of subjective engagement was recorded by ambassadors. Sixty-seven per cent of beach visitors approached by the ambassadors engaged in a conversation with them (i.e. were rated as 'very' or 'a little' engaged with the conversation). Only 17 per cent had no interest and did not want to discuss Safeswim (see Figure 11).

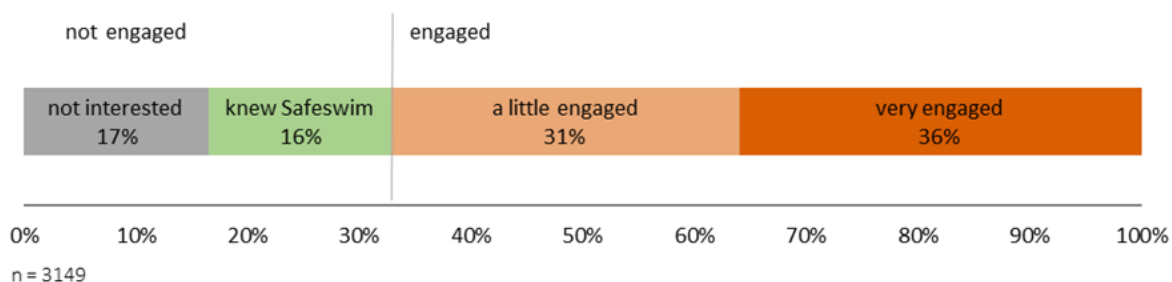


Figure 11. Proportion of beach visitors who engaged with beach ambassadors

As has been noted above personal channels most important vehicles for disseminating knowledge about Safeswim. Thus, beach ambassadors asked beach visitors to share what they have learned with their friends and family. They were asked if they would be willing to tell other people about Safeswim within the near future. Eighty-four per cent of beach visitors who were asked were willing to make this commitment (see **Error! Reference source not found.**). It was not possible to confirm if this was fulfilled.

2.7 Safeswim website

The Safeswim website continues to be developed in order to make information easier to understand. These developments have been assessed by the authors. The alerts for low (green) and high (red) risks were redesigned. The alert for fair risk which was displayed in an amber colour has been discontinued. This is because it was ambiguous and difficult for users to interpret (see Figure 12). A black sign was introduced as an alert for confirmed overflow onto the beach or streams from the wastewater system (see Figure 13).

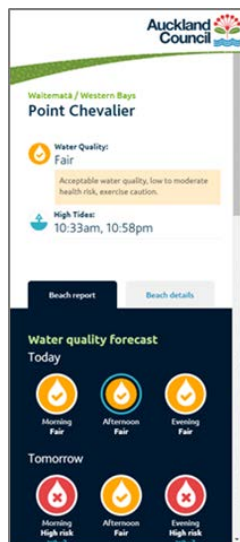


Figure 12. Fair risk alert was discontinued

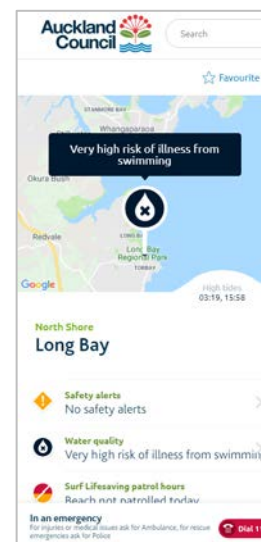


Figure 13. Black alert for very high risk

The main addition to the website was the ability for users to customise their experience and to receive notifications. To customise the website it is necessary to create an account. However, there is no visible 'login' icon on the homepage (see Figure 14). This is only found under 'menu'. Crucially, it is also not clear what benefits a user might gain from creating an account – one has to create an account before it being apparent to users what additional functions are unlocked by doing so. One of the fundamental findings across the field of behavioural insights is that, all else being equal, the more effort that is required to complete a task the less likely a person is to do so.⁷ The low number of people (33) who created an account is likely a reflection of the lack of awareness and/or difficulty of setting up the personalised alerts.

Creating an account allows a user to select and set favourite beaches. To set a beach as a favourite, the user has to use the search function to navigate to that beach and click the star icon. There is no option to add favourite beaches directly from the 'favourite beaches' field under the menu. Once the user has set up favourite beaches navigation to these beaches should be easy. However, currently a user has to follow three steps as follows:

1. Go to menu
2. Go to favourite beaches
3. Choose one favourite beach.

⁷ <https://www.bi.team/publications/east-four-simple-ways-to-apply-behavioural-insights/>

Only one favourite beach can be displayed at a time. If the user wants to see information for another of their favourite beaches, they have to repeat the three steps above. Effectively, using the search option is currently easier and faster than the favourite beaches function.

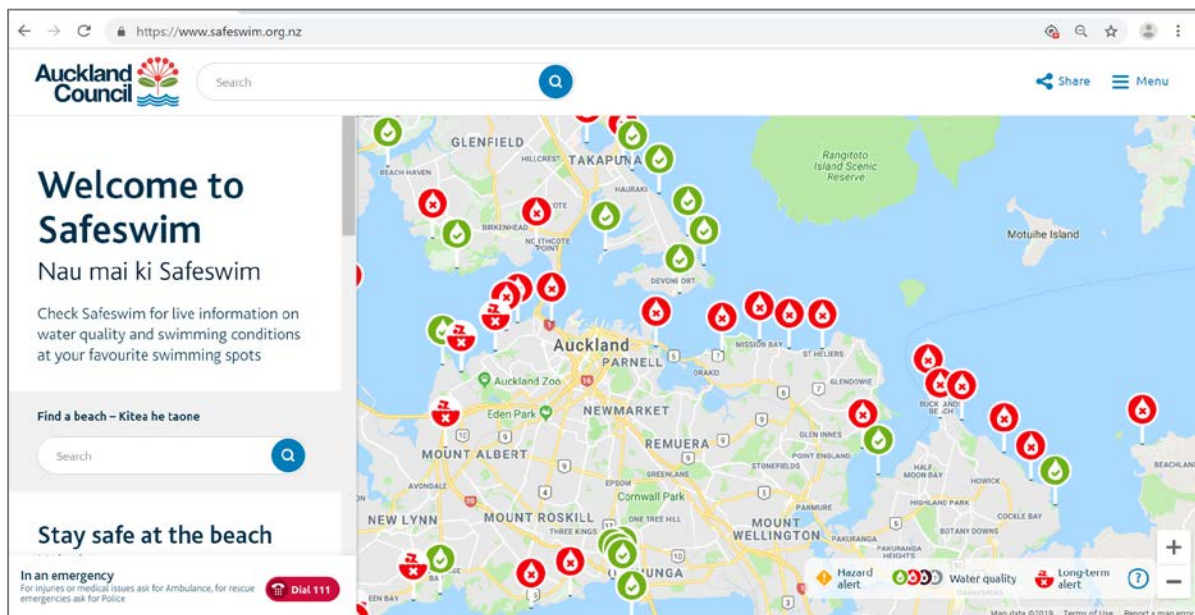


Figure 14. Home screen of Safeswim without visible login icon

Creating an account also allows users to receive water quality notifications for chosen beaches. Notifications can be customised to include several beaches at a time. The frequency and time of notifications can also be chosen. However, if selecting more than one beach, users will receive multiple emails with identical content.

To continue making the website easier to use and customisable the following changes could be considered:

- Login/create account option should be at the front of the landing page
- Make clearer the benefits of creating an account
- Ensure notifications are easier to edit/delete once created.
- Ensure that after login information on favourite beaches is shown by default
- Enable information of more than one favourite beach is shown at once.

2.8 Pavement graphics and ‘nudging’

In addition to the information available on the website, Safeswim has installed digital signs at some beaches. These signs display real-time water quality and hazard information for the beach on which they are installed. This information is intended to help Aucklanders to identify water quality, avoid hazards and becoming sick when swimming. Our evaluation of the 2017/18 Safeswim programme found that awareness of the new digital signs was low. The follow-up evaluation confirms these findings.

To explore methods that could increase beach visitors’ attention to digital signs, RIMU conducted a trial at Mission Bay in December 2018. Colourful jandal-shaped graphics were designed to grab beach visitors’ attention, and some contained written messages to pique interest (see Figure 16). This approach is in line with the concept in behavioural insights known as a ‘nudge’ – an intervention that gently steers people toward a desired behaviour.

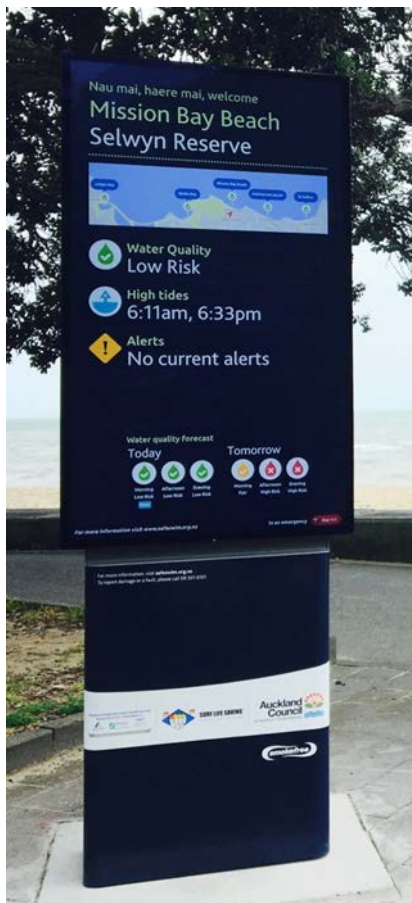


Figure 15. Digital beach sign at Mission Bay



Figure 16. Jandal-shaped pavement graphics

The jandals encouraged more people to notice and read the digital sign. Visitors who walked past the sign in the 2-3 hours immediately before and after placing the jandals were observed to see if they engaged with the sign (a total of 483 visitors were observed before and 314 after). The graphics resulted in a significant increase in engagement with the sign (from 3% to 20% of visitors engaging in some obvious way with the sign). Notably, there was a relative increase of 769 per cent in the number of visitors who looked at it in some

depth (i.e. spent five or more seconds looking). Further, it was found that people were much more likely to notice the jandals if they walked directly over them. The jandals appeared to become less effective as the area surrounding the sign became busier and noisier, and other stimuli competed for visitors' attention.

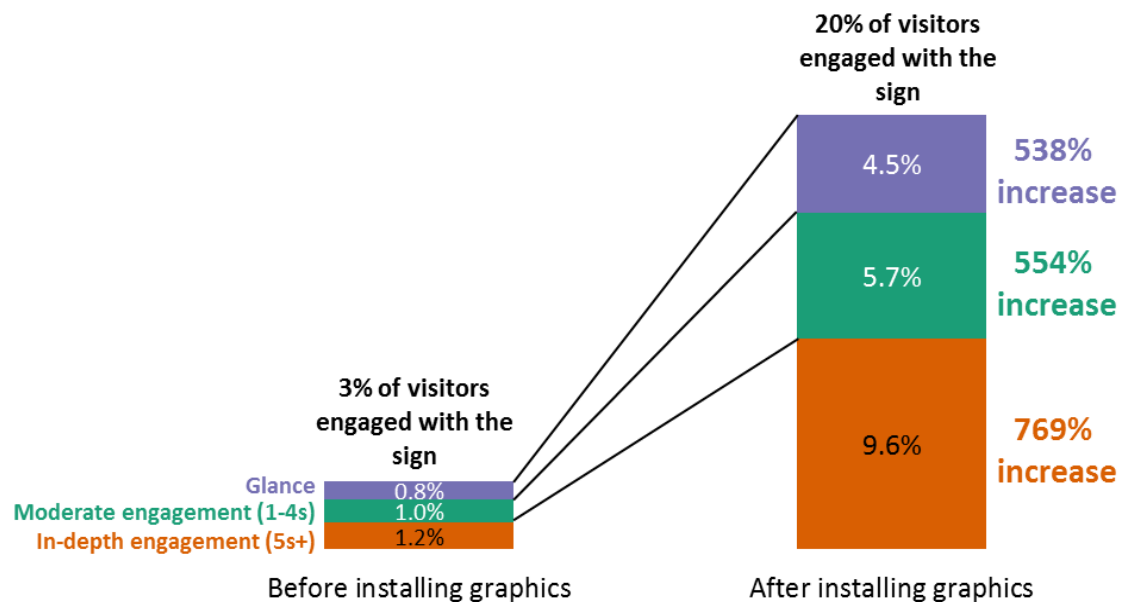


Figure 17. Engagement with digital beach sign before and after installation of pavement graphics

Drawing upon these findings, we suggest the Safeswim project team consider the following recommendations to make better use of nudging:

- Install visual cues with all new Safeswim digital signs.
- Ensure such interventions fully cover visitors' 'lines of travel' near the sign (i.e., make sure graphics extend to the edge of the walkway), to increase the likelihood of visitors noticing the nudge.
- Ensure the nudge is appropriate for the context – noisy/busy environments may need 'louder' nudges, whereas subtle nudges may be more appropriate for quieter environments.
- Consider how visual, auditory, and sensory nudges might be used together to increase effectiveness.

3.0 Conclusion

This year's evaluation findings demonstrate that the initial positive impacts observed following the rollout of the new Safeswim programme remain, but by and large have not changed much over the last year. One-in-two beach visitors report being aware of Safeswim, but the percentage of people who actively check Safeswim is still relatively low. This finding needs to be interpreted in the context of a very dry 2018/2019 summer, with a relatively small number of weather-related poor water quality events. Although it is still beneficial to check Safeswim in good weather, a lack of large increase in usage may be seen as logical in the context of lower weather-related risk factors this summer (2018/19) compared to last (2017/18).

Nevertheless, water quality remains highly important to respondents, and their general knowledge of the causes and consequences of swimming in poor water quality are increasing.

Word of mouth and sharing amongst social networks remain the most prominent way people learn about Safeswim. Future Safeswim communications should continue to build on this by emphasizing on social media channels and encouraging sharing within beach users' networks.

The improvements made to the Safeswim programme following the 2018 evaluation have had a positive but limited impact. Beach ambassadors contributed to engaging people with Safeswim and encouraging respondents to share with their friends and family. Pavement graphics were shown to increase engagement with digital on-beach signs. The changes made to the website are likely to have helped to communicate a clearer message and make the use of Safeswim easier. Customisation and email notifications are now also available, although require adjustment in order to make users aware that these functions exist.

The evaluation findings also reveal a number of challenges that need to be overcome:

- While many people know about Safeswim, most are still not in the habit of using the system.
- There is some disconnect between awareness, notably, proclaimed and actual behaviour.
- Around half of all Auckland beach users still don't know about Safeswim.
- On-beach sign without some form of attention-grabbing 'nudge' remain ineffective as beach goers do not notice them.
- The customisation of the website and email notifications are not yet as effective as they could be.

Appendix A

On-beach visitor survey sample 2019

On-beach surveying was conducted at five beaches, with a concentration at Mission Bay and Takapuna. Mission Bay was emphasised due to its popularity and regional significance. Takapuna is a highly popular beach that has had frequently poor water quality.

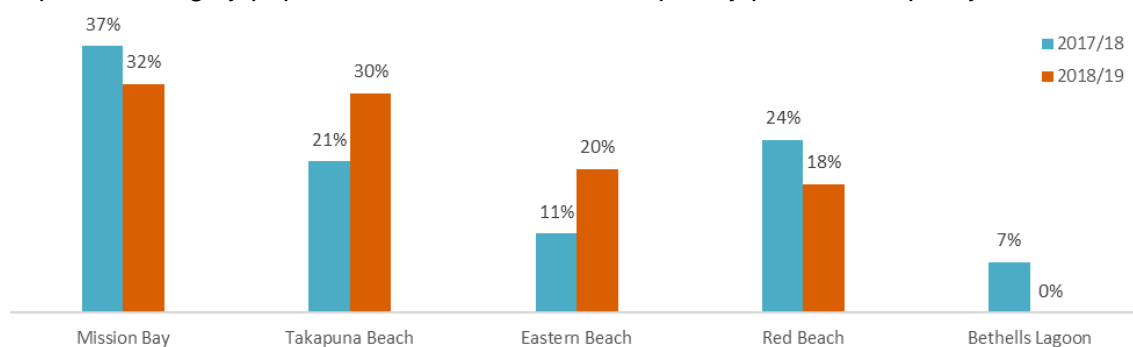


Figure 18. Proportion of respondents per survey site

A range of ages were on the beaches and agreed to participate in the survey.

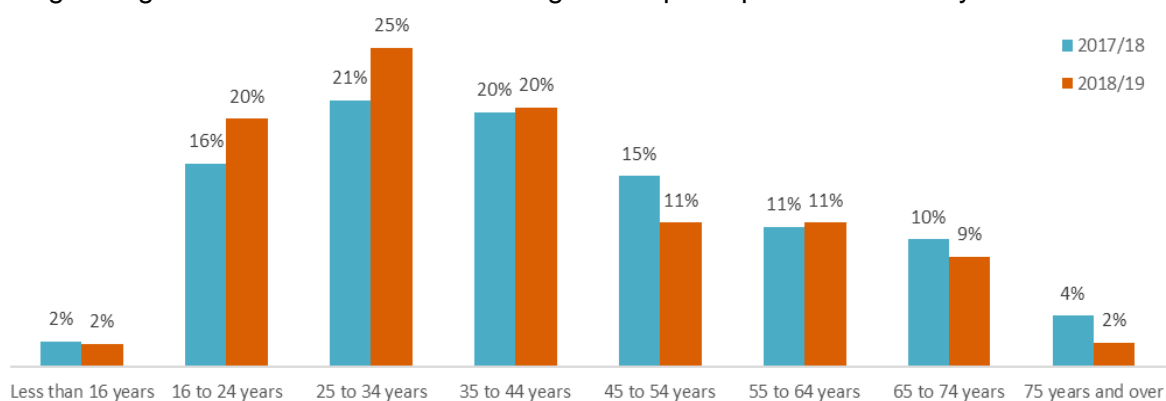


Figure 19. Age distribution of beach visitors

More women participated than men.

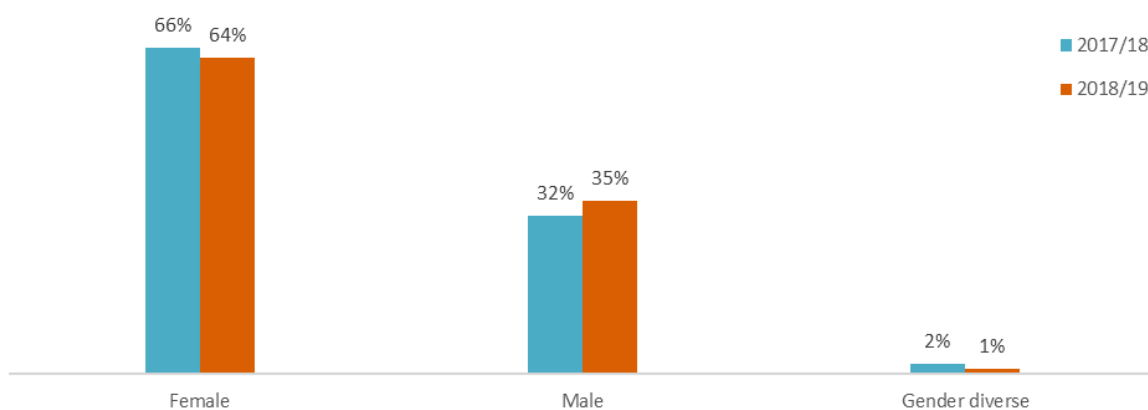


Figure 20. Gender distribution of beach visitors

Survey participants were primarily New Zealand European and 'other', with other ethnic groups participating at lower rates. This demographic pattern is likely due to surveying sites (primarily Mission Bay and Takapuna Beach).

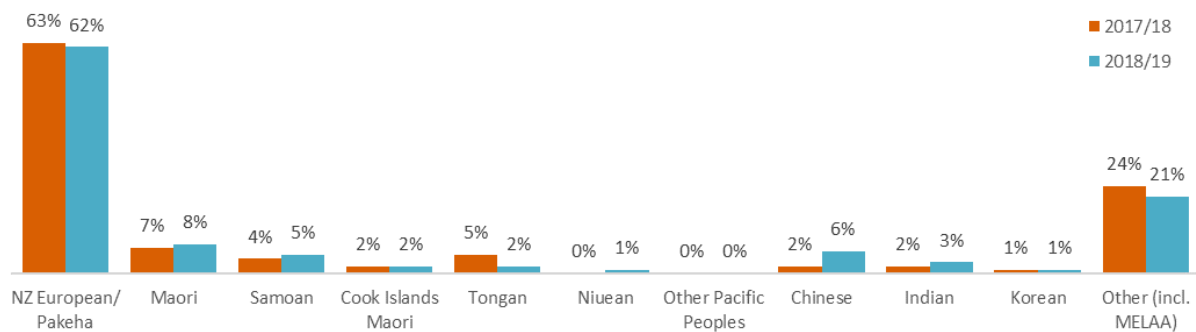


Figure 21. Ethnicity distribution of beach visitors

Participants came from across Auckland. Between 15-18 per cent of respondents did not live in Auckland.

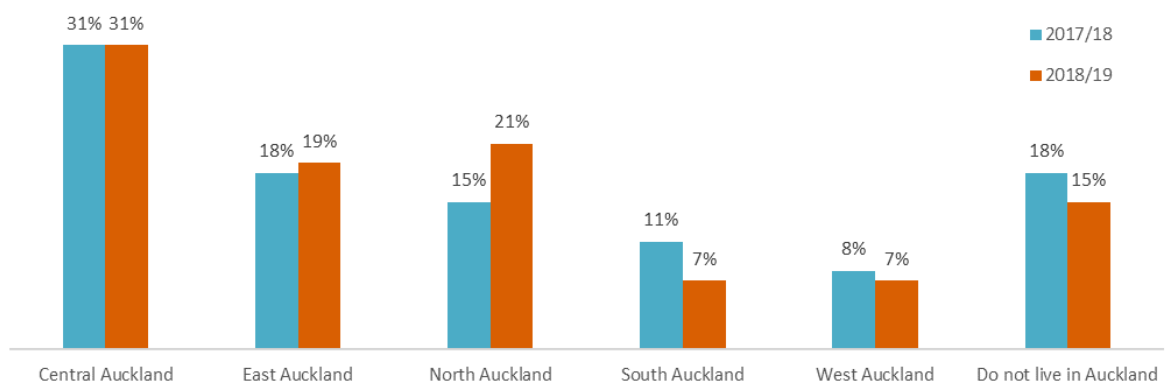


Figure 22. Location of residence distribution of beach visitors

Appendix B

Online panel survey samples

Comparison of pre-rollout, post-rollout and follow-up surveys shows the survey sample characteristics are very similar.

A range of ages were on the beaches and agreed to participate in the survey.

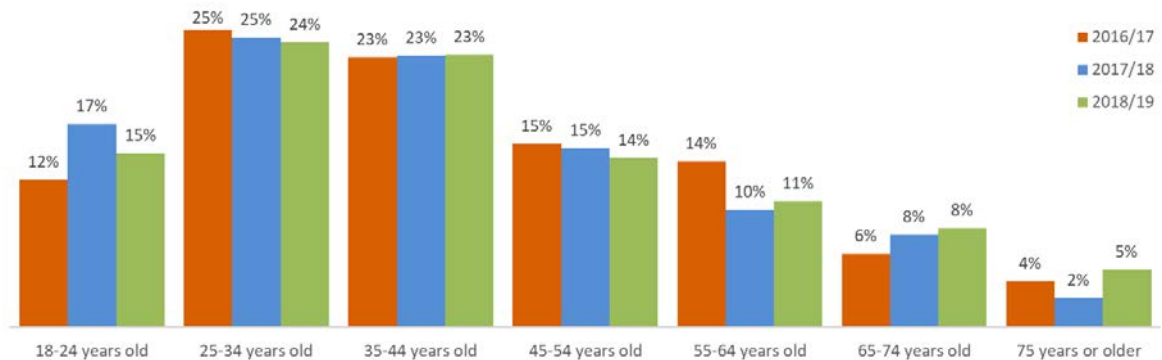


Figure 23. Age distribution of online panel members

As with the on-beach surveying, more women participated than men.

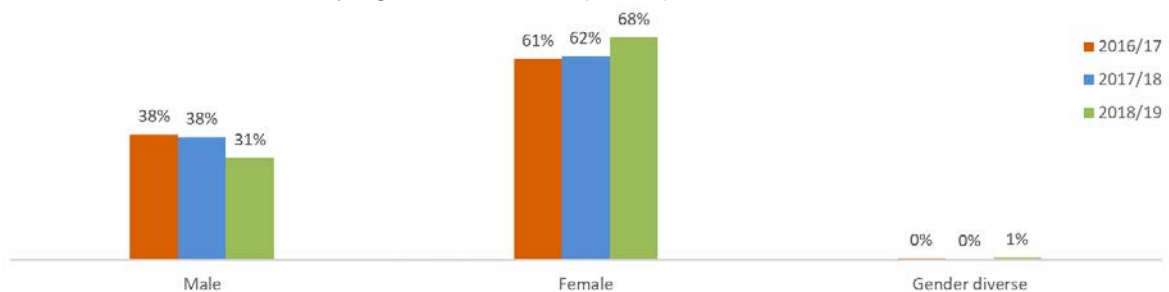


Figure 24. Gender distribution of online panel members

Survey participants were primarily New Zealand European, 'other' ethnicities, Māori, Indian and Chinese.

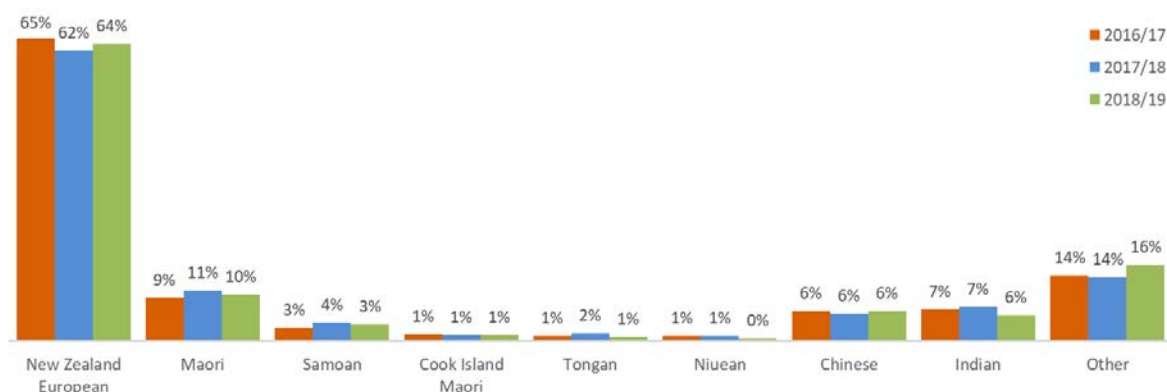


Figure 25. Ethnicity distribution of online panel members

Participants came from across Auckland, with a concentration in the Auckland City.

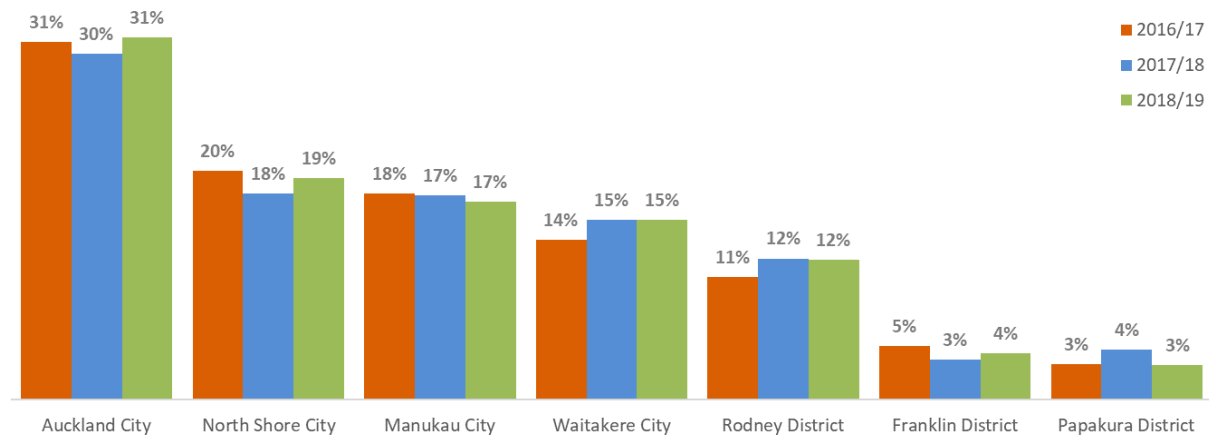


Figure 26. Location of residence distribution of online panel members

All respondents had engaged with at least one of the following activities in the previous 12 months (as a condition of inclusion in the survey): have swum, supervised children who have swum, or gathered shellfish in Auckland. Most had swum, approximately half of respondents had supervised children, and a minority had gathered shellfish in Auckland.

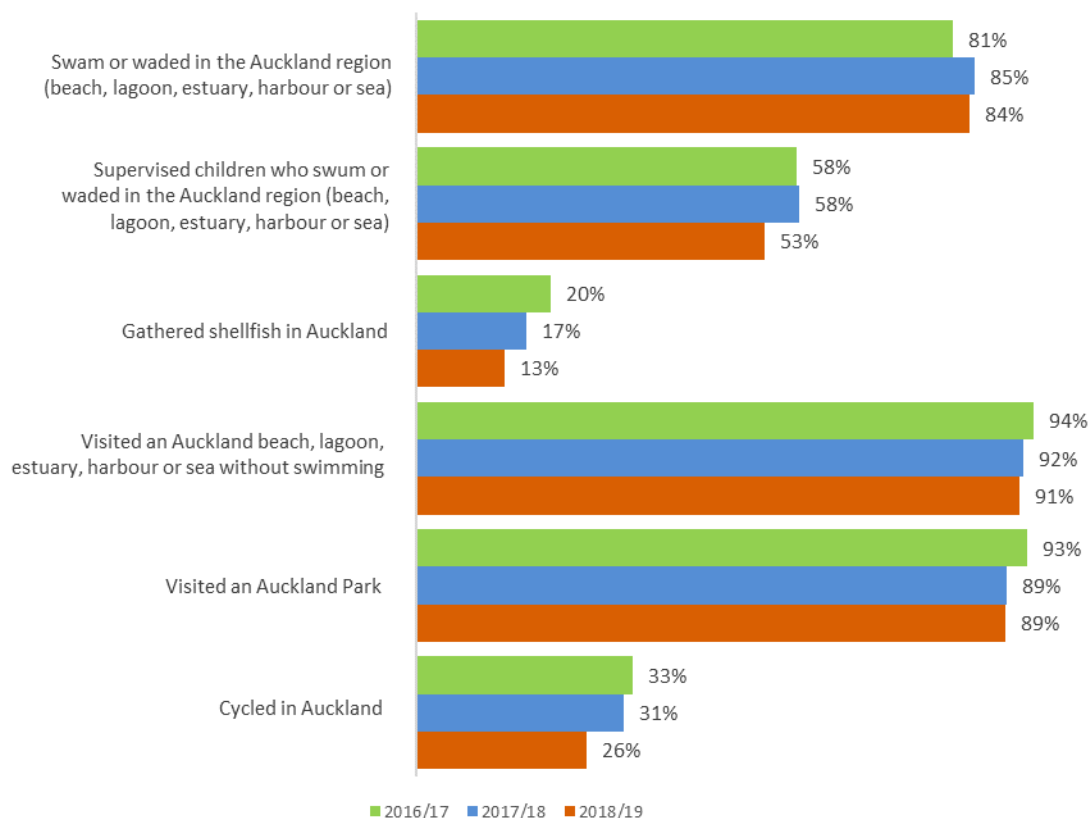


Figure 27. Proportion of online panel members engaged in water activities

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aucklandcouncil.govt.nz and knowledgeauckland.org.nz