



University of  
St Andrews



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**Fife Sustainable Natural and Cultural Coastal Zone Project**

# **Coast to Ocean: A Fife-Eye View**

## **Ocean Literacy in Fife, Scotland**

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## 1.0 Executive Summary

Ocean Literacy (OL), or Ocean Citizenship, is the basis of a movement to sway positive, lasting change in communities that will benefit the sea, coast and climate. An ocean literate person is understanding of the ocean's influence on their own lives, as well as the way that their behaviours influence the ocean and is knowledgeable concerning ocean threats. A degree of informed-ness (or 'literacy') is thought to inspire effective communication and allow for impactful decision-making regarding personal lifestyle and behaviours, which are subsequently beneficial to the marine and coastal environment. Not only that, a collective OL mindset may be translated into policy, informing marine spatial planning authorities of people's expectations regarding their marine and coastal spaces.

The interest in OL stems from the growing recognition of the ocean as an increasingly valuable resource. As such, OL has become the focus of global collaboration and is gaining traction. The Department for Environment, Food and Rural Affairs (DEFRA) launched a survey to understand the extent of OL and climate-related behaviours in England and Wales. Using the DEFRA survey as a starting point, we investigate the possibility of a regional approach, using Fife as an example. A 21-question survey was launched to residents and temporary residents (e.g. students) aged 16+ of the Fife Local Authority, between the 8<sup>th</sup> May and 30<sup>th</sup> June 2021. The aim was to learn how Fife perceives their awareness and understanding towards ocean threats, their attitudes towards responsibility, any behaviours already established and an emotional underpinning. In addition, the vision for Fife was explored along with the impacts of the SARS-CoV-2 Coronavirus pandemic on the visitations of marine and coastal spaces locally.

### 1.1 Key Results

331 usable responses were gathered from all electoral wards within the Fife Local Authority. Survey respondents mostly:

- Felt more aware of global-scale threats than local-level sustainability issues (particularly young people) and are specifically interested in learning more about their local marine and coastal area (particularly women).
- Consider themselves less aware of climate and ocean health solutions, than of threats and problems.
- Believe that scientific knowledge is very important for guiding us towards healthier seas.
- Recognise that humans have a role in driving climate change, although many do not distinguish the subtleties of human impact in terms of the *rate* of climate change in relation to natural processes of climate change.
- Recognise the role of lifestyle changes alongside the actions of governments and businesses to tackle major challenges for the ocean and the climate. 55% of respondents had already made changes. Assuming a likely bias towards pro-environment respondents, this reveals a 'value-action gap', but the survey also indicates ambition for people to make further changes and a need for supporting information and guidance.
- Place importance on increasing at-sea protection and local sustainable seafood, also placing a high value on marine wildlife, cultural heritage and the mental health benefits of experiencing marine and coastal spaces.

### 1.2 Key Recommendations

The key recommendations that arose are (see section 5.2 for more recommendations):

- Shift public engagement and education to balance global issues with local (and national) issues, importantly also raising awareness of solutions to support greater empowerment and likelihood of personal action.
- Universities could have an active role in engaging their local communities with the outputs but also the process of marine and coastal research on climate and sustainability.
- For Government, academy, third sector and business to provide simple tools and advice that empowers people to take individual action, in their personal and professional lives.
- Leverage social science insights and interventions, such as social norms and pledge making, to help promote positive behavioural change.
- Plan for and improve the accessibility of the Fife coastline, taking timely opportunities such as upcoming coastal adaptation and resilience plans.
- Make use of OL surveying to examine public priorities to contribute to the early (visioning) stages of marine planning and policy development.
- Seek collaboration with community-based organisations early on to support the survey distribution efforts and subsequent public engagement opportunities.
- Utilise a nested approach with surveys of identical substance tailored towards small geographic areas that can subsequently be aggregated. This can be expected to instill higher responses from small localities. A nested survey approach can aggregate local surveys across a region, and/or regional data across a national level.
- Critique, adaptation and repetition of this survey can be used to document shifting perceptions and areas for public engagement.

Though various limitations and biases were encountered, this study demonstrated what is possible with limited time and resources, shedding some light on perceived awareness, attitudes and behaviours relating to issues of the marine and coastal area, including climate-related behaviours. A collaboration between regional authorities, scientists and marine educators can significantly advance OL in Scotland and subsequently societal behavioural shifts towards positive, lasting change. The potential for such surveying to also provide direction to planning and policy development represents added value and a potential efficiency for the spending of public money.

## 2.0 Introduction

The ocean and the coast are increasingly recognised as valuable resources. Benefits to people flow from 'Ecosystem services' (ES), categorised as regulatory, provisioning, supporting and cultural (Millennium Ecosystem Assessment, 2003). ES afforded by marine and coastal ecosystems includes food through fisheries, coastal protection, waste assimilation, tourism and recreation opportunities, climate regulation and carbon capture, *inter alia* (Palumbi *et al.*, 2009). The Organisation for Economic Cooperation and Development's (OECD) Ocean Economy Database valued ocean industries to be worth 2.5 % (~USD 1.5 trillion) of the global gross value added (GVA). The largest contributors being offshore oil and gas, tourism, global port throughput, and maritime equipment, with fisheries, processing and aquaculture equating to just over 6% of that figure (OECD, 2017). Ocean industries are by no means a complete measure of worth; in addition to GVA, marine and coastal ES can be assigned a nonmonetary value in cultural heritage, inspiration of the arts and the promotion of physical and mental wellbeing. McCauley goes further in stating that nature is priceless on account of its intrinsic value alone and when considering a combined value for any ecosystem, asserts infinite worth (McCauley, 2006).

Parallel to our recognition of ocean value is a growing concern over the changes in ocean health attributed to anthropogenic activities. The 2005 Millennium Ecosystem Assessment found

unsustainable use or degradation over 60% of the ES evaluated (Millennium Ecosystem Assessment, 2005). Human activities are responsible for overfishing, loss of biodiversity and habitats (e.g. coral reefs), changing climate and associated impacts (e.g. rising sea level, increasing water temperatures and changes in ocean chemistry), pollution, marine plastics and increasing frequency of harmful algal blooms (Blundell, 2004; Pratchett *et al.*, 2008; Fu, Tatters and Hutchins, 2012; Sigler, 2014; Meredith *et al.*, 2019).

As such protecting and enabling recovery of ocean biodiversity and ecosystem functions has become a theme of global collaborations, epitomized by its inclusion in the United Nations 2030 Agenda for Sustainable Development. Their agenda sets out 17 goals designed to eradicate poverty and achieve economic, social and environmentally sustainable development. Goal 14 strives for the sustainable use of marine resources and called for 10% of coastal and marine spaces to be protected by 2020 (United Nations, 2015). This prompted the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the Intergovernmental Oceanographic Commission (IOC) to create a movement dubbed the UN Decade of Ocean Science for Sustainable Development. Their first summary report highlighted the need to communicate the benefits of a 'Blue Economy', promote science as a tool for decision making and captivate audiences with regard to ocean matters. The latter is cited as an essential component to the success of the ocean decade, which calls for an "Ocean Generation of informed citizens." (IOC-UNESCO, 2019). Indeed, Gelcich *et al.* (2014) revealed that the level of informedness regarding marine threats is closely linked to the level of public concern. This is the basis of Ocean Literacy (OL).

OL has previously been defined as "Understanding the ocean's influence on you - and your influence on the ocean" (NOAA, 2020). This understanding enables people to be effective communicators concerning marine and coastal threats, as well as be informed to make impactful decisions regarding their behaviours and lifestyle choices. Brennan *et al.* created a framework of dimensions for OL consisting not only of knowledge, communication and behaviour, but also attitudes, awareness and activism (Brennan *et al.*, 2019). OL is inextricably linked with the idea of 'Ocean Citizenship', often a preferred term when engaging the public. Essentially, this seeks to highlight the connections between people and the ocean, recognising the benefits we gain from a healthy ocean and the consequences of our actions (individual and collectively) on marine and coastal spaces (Fletcher and Potts, 2007; Stoll-Kleemann, 2019). In effect, the concept of OL and behavioural change have much in common, with climate-related behaviours at the top of the agenda for OL practitioners. The relevance of climate-impacting behaviours that occur on land, in our homes and other places of work must not be overlooked within OL, actually providing a valuable basis upon which to emphasise the connectedness of our lives with the ocean. As such, the enhancement of OL in society seeks to add further motivation for transformative change in systems and society. The term OL first arose in the early 2000s with the realisation that to increase public support and engagement with ocean conservation projects, a level of public awareness and knowledge is necessary (Steel *et al.*, 2005). Public awareness and consequently engagement is also recognised as a driver for the creation and application of effective environmental policy. Whilst policy is often informed by stakeholder consultations, an understanding of public perceptions and priorities for addressing marine threats is needed to align policy with public values (Gelcich *et al.*, 2014; Potts *et al.*, 2016). Doing so informs policymakers and scientists of ways in which to back personal and collaborative efforts to ameliorate ocean health and aids decisions over funding allocation (Gelcich *et al.*, 2014). As such, OL can be envisaged as a dichotomous process (Figure 1), whereby an increased understanding and awareness ultimately serves environmental justice through beneficial behavioural changes and informs democratic decision-making by building informed expectations for how policymakers and government should aid the marine and coastal environment.

A 2016 European survey found that concern for the marine environment differed between countries, with broader environmental concerns such as pollution and food safety taking precedence over other marine issues (Potts *et al.*, 2016). An earlier 2009 study found substantial interest from the British public regarding marine and coastal threats and charismatic marine species but also highlighted insufficient availability of information and knowledge gaps (Fletcher *et al.*, 2009; Jefferson *et al.*, 2014). Similarly, Potts *et al.* (2016) identified a gap between public and scientific perceptions surrounding various marine issues. Later in 2020, the Marine Stewardship Council UK (MSC) published their findings from surveys administered to practicing British teachers. Two-thirds reported concern that their pupils lack an understanding of anthropogenic impacts on marine and coastal environments (MSC, 2020). OL is now gaining traction in the United Kingdom, including but going beyond the role of education by recognising the role of science communication and public engagement experts, and insights from other disciplines including the social sciences and how to leverage technology. The Department for Environment, Food and Rural Affairs (DEFRA) launched their own survey of OL in England and Wales in February of 2021. It differed from many previous UK-based studies by placing a focus on activism, communication and the link between OL and climate-related behaviours (DEFRA, 2021).

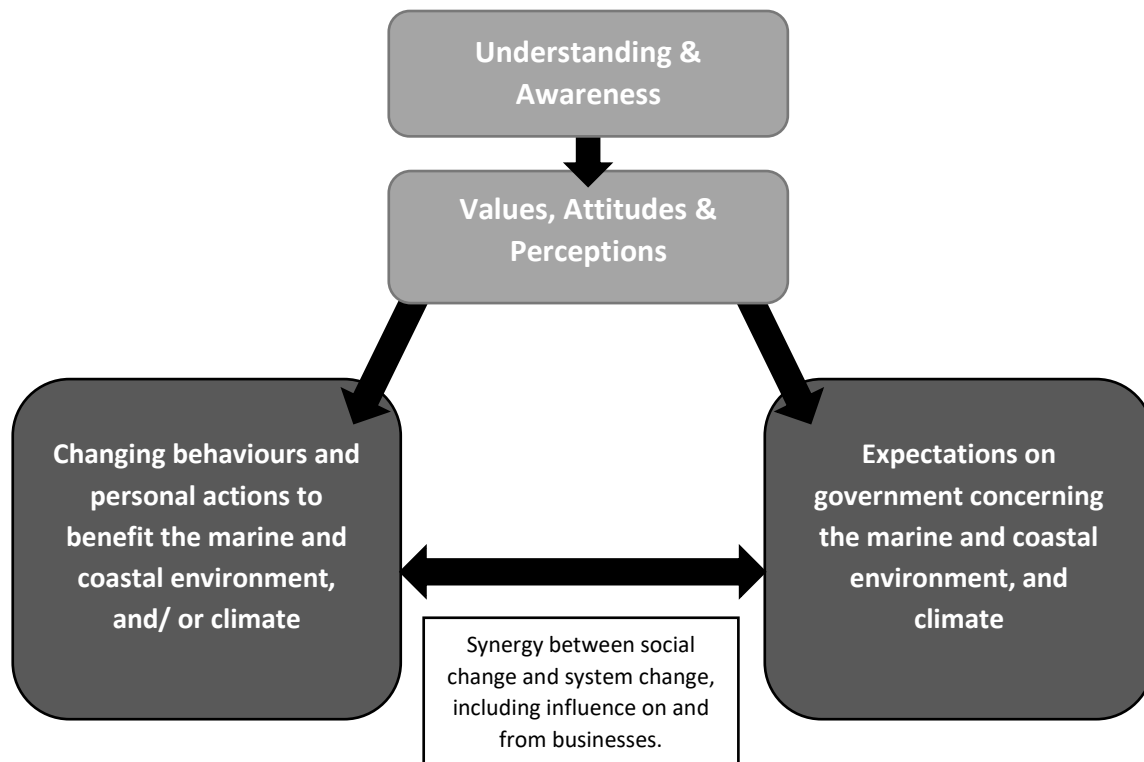


Figure 1) A conceptual framework for how Ocean Literacy blends with avenues for societal shifts towards sustainability.

With the UN Decade of Ocean Science for Sustainable Development (2021-2030) still in its infancy, determining OL baselines will be essential for mapping progress towards an ocean literate people. By recording if and how OL progresses, we can observe shifts towards positive ocean and climate-related behaviours and identify public support for positive systemic changes that may influence and accelerate policy for sustainable outcomes. When restrictions on movement were enforced due to the SARS-CoV-2 Coronavirus (COVID) pandemic, an opportunity arose to think local and reflect on the

University of St Andrews' influence on the surrounding community in Fife, Scotland. An interdisciplinary team piloted a 'Living lab' project, with the aim of creating a grassroots initiative to promote science-grounded positive systemic and behavioural changes in the locality. As part of that project this OL survey of residents of the council area of Fife, inspired by DEFRA's OL survey in England and Wales, creates a snapshot by which to measure progress for a localised Scottish demographic. Marrero *et al.* (2019) highlight the importance of a collaborative approach to OL by marine education networks. Once an understanding is established, as an institution, the university is better situated to engage with, and fill any OL knowledge gaps within Fife communities.

The Fife Local Authority as a survey site offers many interesting juxtapositions; for example, coastal versus inland residents and historic university towns contrasted with industrial root towns (Duffy and Stojanovic, 2018). Fife is also home to those whose livelihoods depend on the sea, namely inshore creel fishers, (n=148 (Marine Scotland, 2019)) and is part of the wider Edinburgh commuter belt. There is a draw for its natural beauty and wildlife with large seabird and seal colonies on the Isle of May, together with its facilities and attractions with world-renowned golf courses in St Andrews. There are many Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites dotted along its coastline (Fife Biodiversity Partnership, 2013). The Fife Local Biodiversity Action Plan lists the raising of awareness and primary education on the sustainable use of marine and coastal resources amongst its priority action points (Fife Biodiversity Partnership, 2013). This was the first study of its kind in Fife and provides a broad understanding of the perceptions, attitudes and behaviours of survey respondents, also providing a platform for locals to voice their priorities and interests regarding the management of marine and coastal spaces around Fife. Like the DEFRA survey it was adapted from, this survey of Fife residents deliberately seeks to make the connection between OL and climate-related behaviours. It is hoped that the survey will be repeated to inform local scientists and policymakers of the local efficacy of OL and how it progresses in Fife, with potential for methodological refinement and application to other regions.

This survey also presents a unique opportunity to understand how COVID has impacted personal appreciation of marine and coastal spaces in Fife and to learn how patterns of use may have changed through the pandemic. A review by White *et al.* (2020) suggests a positive connection between human health/ wellbeing and proximity to the coast, so it may follow that the enforcement of lockdowns and movement restrictions have played a role in impairing coastal visitations and subsequently mental health and wellbeing. Conversely, a study found that 54% of respondents subjected to lockdown restriction reported feeling solace or respite on account of visiting green or blue spaces (Astell-Burt and Feng, 2021). A separate survey of people for whom COVID disrupted their routine coastal encounters, discovered a 'solastalgia' amongst interviewees, defined as 'an emotional distress caused by a changing environment' (Jellard and Bell, 2021). Rousseau and Deschacht (2020) also found an increased interest in nature and nature-related topics on account of the pandemic.

## 2.1 Objectives

To evaluate OL in the Fife Local Authority, a survey was designed and conducted to:

1. Achieve a snapshot of information on Fife residents regarding
  - i. their perceptions of their own understanding and awareness of basic principles of ocean science and sustainability issues (impacts and solutions) and sources of knowledge
  - ii. their attitudes to these issues, including perceptions of responsibility for impacts and solutions
  - iii. their behaviours (actual and intended) exhibited to contribute to addressing these issues, including climate-related behaviours
  - iv. any emotional or experiential underpinning to awareness, attitudes or actions



2. Understand what is important to Fife communities regarding a future vision of the Fife marine and coastal environment, its uses and benefits to society
3. Learn how COVID has impacted Fife communities in terms of their visitations and appreciation of local marine and coastal spaces.

A supplementary objective includes exploring the potential for a regional (council-area) approach to evaluating OL.

## 3.0 Materials & Methods

### 3.1 Target Audience

To gauge OL in Fife, an online survey was conducted. For reasons of data ethics, the decision was made to target people in Fife aged 16+, from all electoral wards across the Fife Local Authority. To be eligible, participants had to either be resident or temporarily resident (e.g. students) in Fife and/ or own property within the Fife Local Authority. All participants were supplied with a Participant Information Sheet and asked to give their consent for their data to be recorded. Participation was incentivised with an opt-in prize draw for one of two £50 gift vouchers of their choosing. The aim was to, as far as possible with the time and resources available, reach as broad an audience as possible within the council area.

### 3.2 Survey Design

The survey design consisted of 21 topical questions covering OL themes including knowledge and awareness of threats and solutions both locally and globally, and behaviours both towards the marine environment and climate. We included questions examining feelings towards marine and coastal spaces, including in light of COVID (See Appendix 1 for questionnaire). A further five questions focused on the demographic of the individual including age bracket, sex at birth, level of qualification, the electoral ward in which they live and whether they or an immediate family member have ever studied or worked in the environment sector. Largely for reasons of data ethics, information on more personal and specific demographic characteristics were not collected, although this presented subsequent limitations in the analysis (see section 5.3). No prior guidance on wording or terminology was created, so steps were taken to keep language simple and neutral. Consequently, questions were interpreted based on the innate knowledge and perceptions of the respondent at the time of surveying. The question types presented were a mixture of multiple-choice, Likert scale and ordered category items, with the option for elaboration in open-ended text questions and were designed to be completed in 15 minutes or less. Where possible, statements given within multiple-choice questions were randomised. The online survey platform Qualtrics<sup>XM</sup> software version 04:07/2021 (Qualtrics, 2005) was used to build the survey. A draft survey was tested and critiqued by academics at the University of St Andrews and several laypersons, with their comments addressed before distribution.

### 3.3 Survey Distribution

The finalised survey was distributed between the 8<sup>th</sup> May and the 30<sup>th</sup> June 2021 (54 days) and accessed through a shareable web link or QR code. Response rates are known to be stronger with a choice of options for completion (Wallen *et al.*, 2016). A mixture of distribution methods was therefore employed including flyers with a QR code (displayed in public spaces in towns and villages), social media platforms (Twitter, Facebook and Instagram), emailing various contacts and organisations with access to Fife-based community groups, adverts in several local newsletters and through word of mouth. In total, 201 individuals, community groups and organisations were contacted to enlist their help with distribution. Social media pages were created solely for survey distribution; posts advertising the survey were provided on each platform, equipped with the web link. Facebook was the

predominant means of social media distribution, as it allowed the targeting of Fife-wide communities through local community groups and pages; investing in 'sponsored' posts to boost promotion was considered but ruled out due to budget constraints. The option was also given to complete the survey via a telephone/ video call interview, but with only very limited take-up. Paper-based surveys were not included due to budgetary constraints on researcher time, printing and postage. All data was stored confidentially under UK General Data Protection Regulations (GDPR). Ethical approval was granted by The School of Biology Ethics Committee acting on behalf of the University Teaching and Research Ethics Committee (UTREC) (Approval Code: BL15446).

### *3.4 Survey Analysis*

Survey analysis was completed using RStudio Version 3.6.1 (2019-07-05) "Action of the toes" (R Core Team, 2019) and Microsoft Excel Version 2106 (Build 14131.20278). Partially completed surveys (<70% complete) were removed from the analysis. Using demographic summary statistics, demographic groupings were agreed from the data. Each question was analysed by those different demographic groupings. For each question by each grouping, a count and percentage were calculated using Microsoft Excel. Chi-squared tests and Fisher's Exact tests were used to determine if there were any significant associations between statements and responses for Likert scale and ordered-category items.

## 4.0 Results

### *4.1 Responses*

The online survey was opened 459 times, yielding 331 usable responses (usable surveys were quantified as  $\geq 70\%$  complete, maximum  $n=331$ ). All  $n$ -numbers given alongside data and figures represent the number of respondents that answered that particular question in full. Percentages given are rounded to the nearest whole number). The median completion time of usable surveys was 12 minutes 11 seconds. Survey distribution support was received from individuals, community groups and organisations to whom we reached out; 26 positive replies to emails inviting help with distribution represented a response rate of 12.94%. Facebook posts were added to 28 different community groups with the potential to have reached approximately 45,000 members of the Fife community. Social media was the most effective distribution method with 53% of respondents hearing about the survey through a range of social media platforms. Although with considerable overall variability and very low numbers in some areas, responses came from every electoral ward within the Local Authority area.

Demographic data were used to create summary statistics to identify the demographic characteristics of the respondents. Data for each of the 21 OL questions were grouped to account for sex differences (Female, Male, Prefer not to say and Not Applicable (NA)), educational attainment (No formal qualifications, Secondary Education, Higher Education and NA), age (16-34, 35-44, 45-54, 55-64, 65+ and NA) and whether the participant or an immediate family member, had studied or worked in the environment sector (Yes, No, Prefer not to say and NA). The decision was made not to observe the inter-electoral ward differences due to the small number of responses from several wards and the variable intra-ward deprivation indices, as indicated by the [Scottish Index of Multiple Deprivation](#).

### *4.2 Survey Outcomes*

Perceived health of the marine and coastal environment in Fife:

- The majority (47%) ( $n=329$ ) believed the health of the marine and coastal environment in Fife to be good, 19% believed that it is neither good nor poor and 12% believed it to be very good.

- Women showed more uncertainty than men in rating the health of the local marine and coastal environment with 12% of women answering 'don't know' compared to 2% of men.
- Respondents that have studied or worked (or have an immediate family member that has studied or worked) in the environment sector are slightly more inclined to select 'poor', 'very poor' or 'don't know'.
- For young people aged 16-34, 69% thought the health of the Fife local marine and coastal environment was good or very good compared to 49% of those aged 65+.

Perceived awareness of global issues, local issues and solutions:

- Chi-squared testing reveals a significant relationship between the issues and solutions and perceived awareness. (Pearson's Chi-squared test:  $\chi^2=193.24$  |  $df=8$  |  $p<0.001$  |  $n=325$ ) (Figure 2).
- Respondents felt more awareness for global issues facing the marine and coastal environment than they do for the local environment. Regarding awareness of solutions, as many people perceived themselves as having poor awareness as those that perceived themselves as having a good awareness. In total, 85% of respondents felt aware or very aware of the problems facing the global marine and coastal environment, 55% felt aware or very aware of the problems facing the Fife marine and coastal environment and only 34% of respondents felt aware or very aware of the solutions.
- Conversely, 5% of respondents felt unaware or very unaware of global problems, 19% felt unaware or very unaware of problems to the marine and coastal environment in Fife and 34% of people felt unaware or very unaware of the solutions.
- Men felt more aware of local issues and solutions than women.
- Those who have studied or worked, or whose immediate family has studied or worked, in the environment sector felt more aware of local issues and solutions.
- Young people are the most likely to feel very aware of global issues. Those aged 65+ are most likely to feel very aware of local issues in the marine and coastal environment.
- Those who have higher education qualifications felt more aware of global issues, local issues and solutions than those limited to secondary education qualifications.

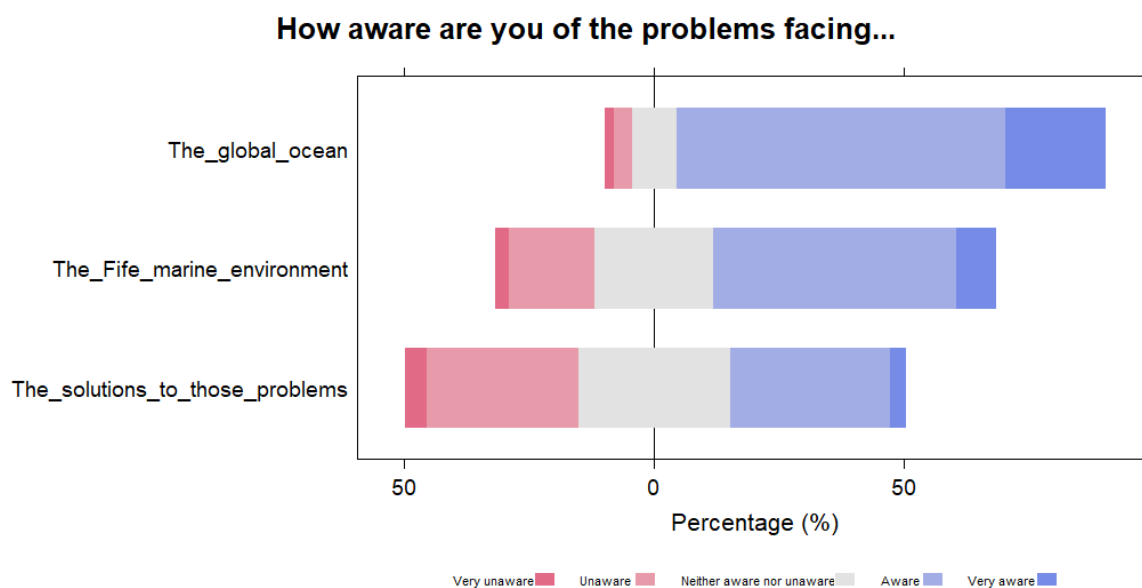


Figure 2) Awareness of global problems, local problems, and solutions to those problems (n=325).

Perceived largest threats to the Fife marine and coastal environment:

- Marine litter and plastics are perceived as the largest local threat with 90% of respondents selecting it as one of their top five responses. 60% of respondents selected climate change as one of their top five (n=329) (Figure 3). For those that selected 'other', threats listed included sewage disposal into the marine environment and urban expansion, with some voicing that they wished they could have ticked all options.

Ranked knowledge sources of respondents regarding marine and coastal environments:

- First-hand experience appears to be equally as important for learning about marine and coastal environments as social media. News articles are the primary source of knowledge for Fife residents with 67% of respondents selecting it as one of their top five, followed by wildlife and natural history documentaries, selected by 58% of respondents (n=331) (Figure 4).

Perceived importance of scientific knowledge:

- In total, 86% of respondents felt that scientific knowledge is very important for guiding us towards healthier seas. Of the 330 respondents, one (0.3%) believed science to be unimportant and a further four (1.21%) believed science to be neither important nor unimportant. There is no clear demographic associated with these beliefs.
- Of those who have studied or worked/ an immediate family member has studied or worked in the environment sector, 100% believed scientific knowledge to be important or very important and 100% of respondents with no formal qualifications believed scientific knowledge to be very important, however, the proportion of respondents with no formal qualification is very low.

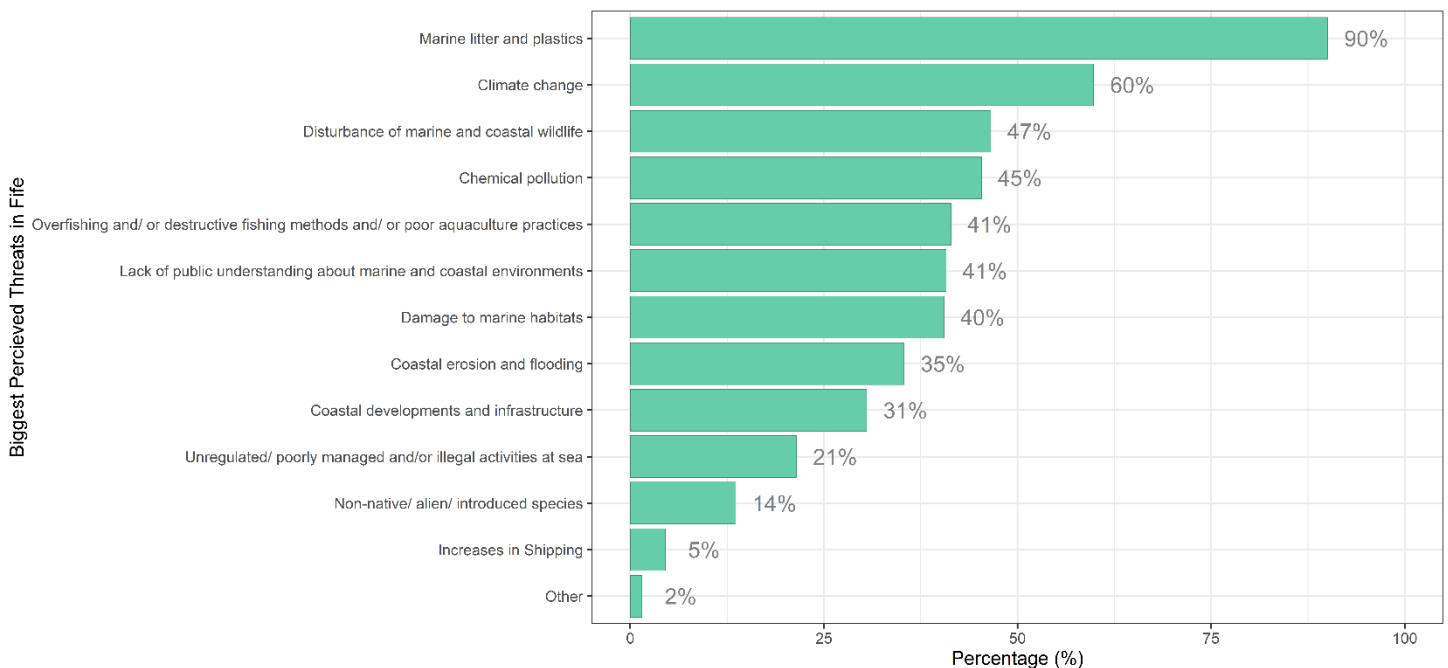


Figure 3) The perceived largest threats to the Fife marine and coastal environment (n=329).

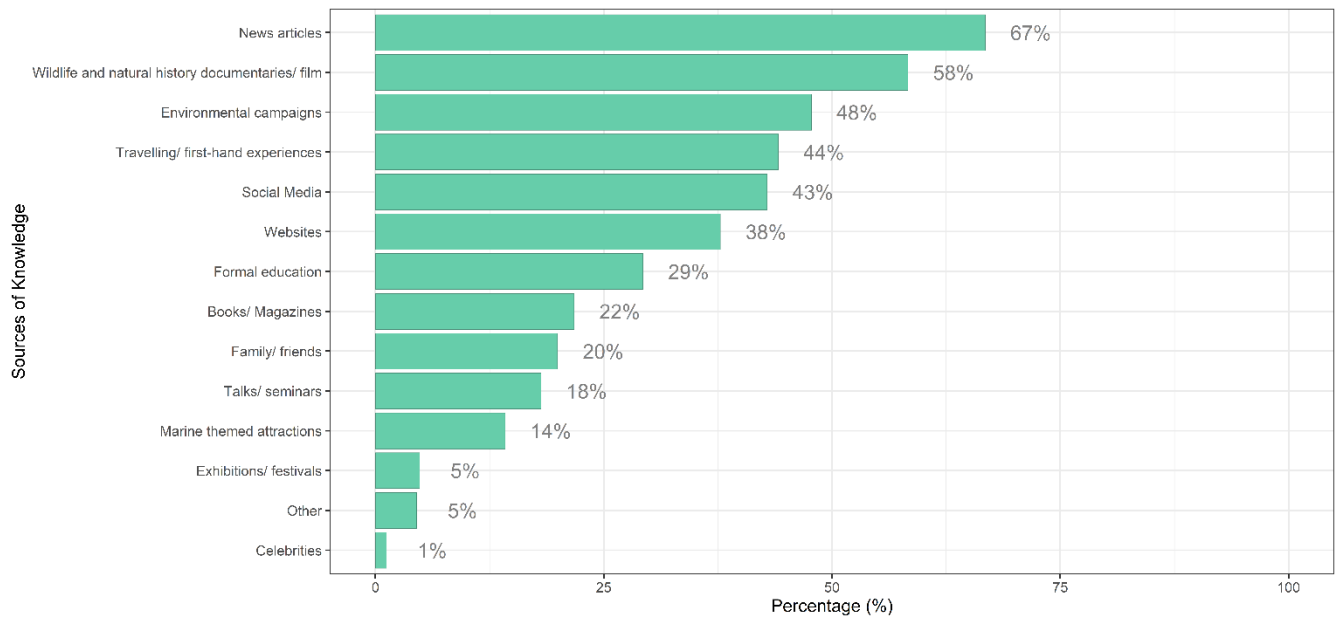


Figure 4) Ranked sources of knowledge for Fife communities concerning the marine and coastal environment (n=331).

#### Interest in learning more about the marine and coastal environment on a global and local scale:

- Fisher's exact testing revealed a significant relationship between the statements and responses (Fisher's Exact test:  $p < 0.001$  |  $n = 326$ ) (Figure 5).
- Respondents ( $n = 326$ ) are generally interested in learning more about the ocean. They are more interested in learning about the local marine and coastal environment in Fife than they are in the global environment.
- Women are more interested in learning more about the local marine and coastal environment with 60% of women selecting '5' (Very interested) compared to 47% of men.
- Young people are more interested in learning more about the global marine and coastal environment with 41% of 16-34s selecting '5' (very interested) compared to 25% of those aged 65+.

#### Perceptions on the cause of climate change:

- In total, 59% ( $n = 330$ ) of respondents believed that the climate is changing relatively quickly as a result of human activity; a further 40% believed that the climate is changing relatively quickly due to a combination of human activity and natural processes. The remaining respondents (<1%) either could not say whether the climate is changing relatively quickly due to human activity or did not know.
- In terms of gender, 61% of women attributed a rapidly changing climate to human activity and 38% to a combination of human activity and natural processes, whereas 50% of men attributed a rapidly changing climate to human activity and 48% to a combination of human activity and natural processes.
- For those that have (or have an immediate family member who has) studied or worked in the environment sector, 69% attributed the relatively quick changes in climate to human activity

and 31% attributed it to human activity and natural processes. This is contrasted with those that have not studied or worked in the environment sector with 54% believing that a rapidly changing climate is attributed to human activity and 44% to a combination of human activity and natural processes.

- Young people are more likely to attribute the changing climate to human activity, whilst older folk are more likely to attribute changing climate to a combination of human activity and natural processes.

### How interested are you in learning more about... (1=Very disinterested to 5=Very interested.)

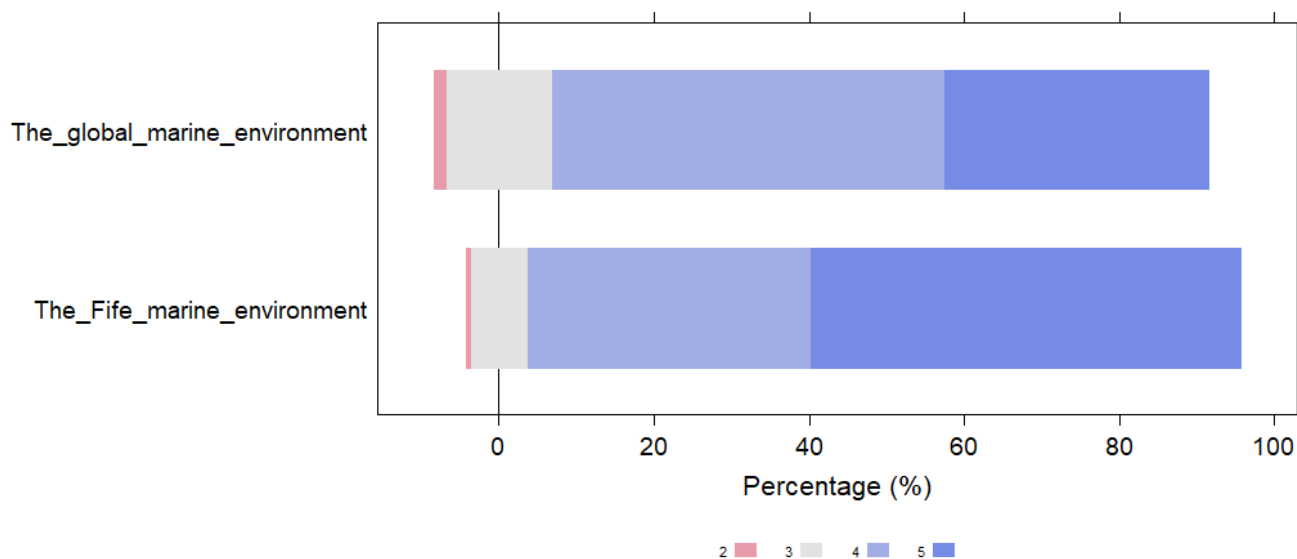


Figure 5) Relative interest in learning more about the marine and coastal environment on a global and local scale. No respondents selected '1' (very disinterested) as an option (n=326).

#### Attitudes towards who is responsible for delivering solutions:

- There was a significant relationship between responses and statements (Fisher's exact test with simulated p-value based on 2000 replicates:  $p < 0.001$  |  $n = 251$ ) (Figure 6).
- The majority of respondents agreed that all parties are responsible and can do more to deliver solutions, albeit that the emphasis was for Government and business rather than the individual to take responsibility.
- There was a relatively high number of non-responses (blanks), increasing in proportion as age increases. This is likely a result of the question wording or format. This question and others that encountered a similar issue were formatted as a 'carousel' of auto-advancing statements with a multiple-choice style Likert scale beneath. It appears that respondents may not have noticed the statements auto-advancing and scrolled onto the next question prematurely (see section 5.3 on biases and limitations for further explanation).
- Women are more likely than men to 'strongly agree'.
- An environment sector background makes little difference to people's attitudes regarding responsibility for solutions.

#### Actions that have been taken to protect the seas, coast and climate:

- Chi-squared testing revealed a significant association between the possible actions and whether respondents had taken (or wanted to take) those actions (Pearson's Chi-squared test:  $\chi^2 = 676.68$  |  $df = 16$  |  $p < 0.001$  |  $n = 273$ ) (Figure 7).

- The most common responses for those actions which have been taken include avoiding wildlife disturbance, reducing consumerism and waste, and broader lifestyle changes to reduce their carbon footprint (78%, 70% and 67% respectively).
- In total, 62% of respondents would like to vote for strong marine environmental protection policies, 40% would like to contact their local politician or sign petitions concerning the marine and coastal environment and 40% would like to make ethical investments and savings.
- Respondents are largely interested in the actions stated, however, 23% are not interested in talking to others or sharing online, 21% are uninterested in ethical investments and savings, and 19% are uninterested in contacting local politicians or signing petitions.
- Of those (or who have immediate family) that have studied or worked in the environment sector, 48% have spoken to others or shared online about supporting the marine and coastal environment, compared to 31% of those who have not.
- The percentages of respondents that have actively engaged in these actions are consistently higher amongst those with higher education qualifications than those with secondary education qualifications.
- There was a relatively high percentage of blanks, possibly a legacy of the question format or wording.

**When thinking about solutions to the problems facing our seas, coast and climate, to what extent do you agree with the following statements?**

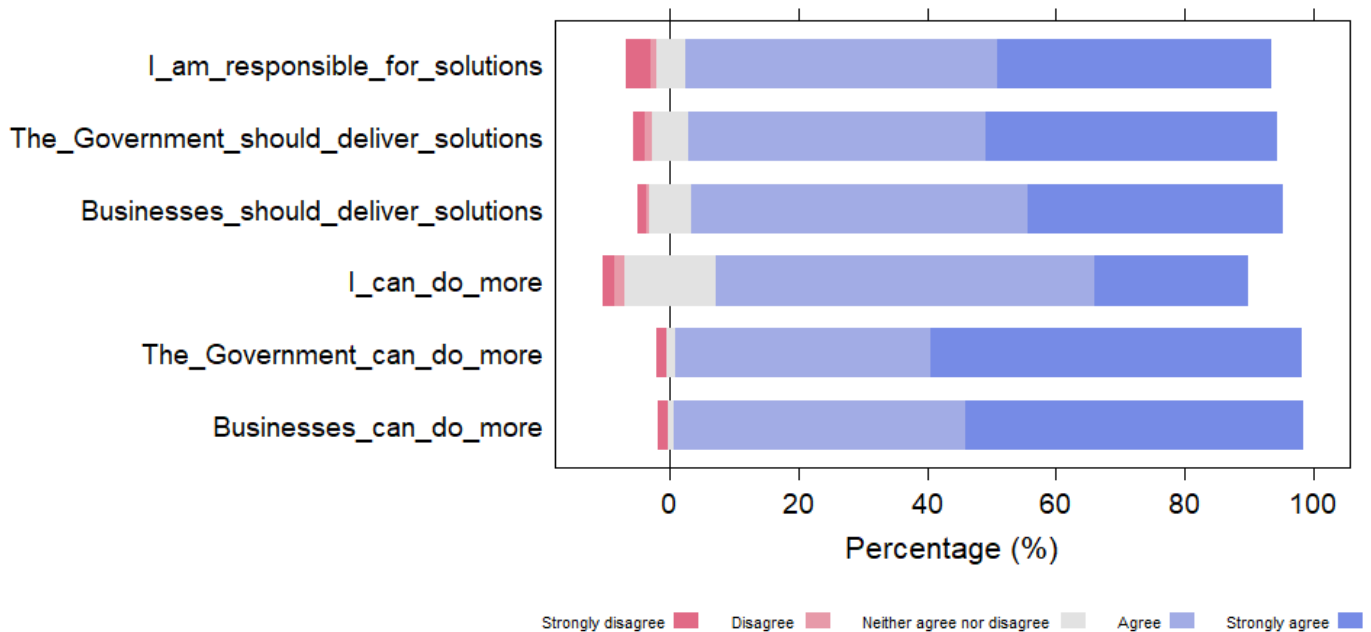


Figure 6) Attitudes of respondents towards who is responsible for delivering solutions and where or not, more can be done (n=251).

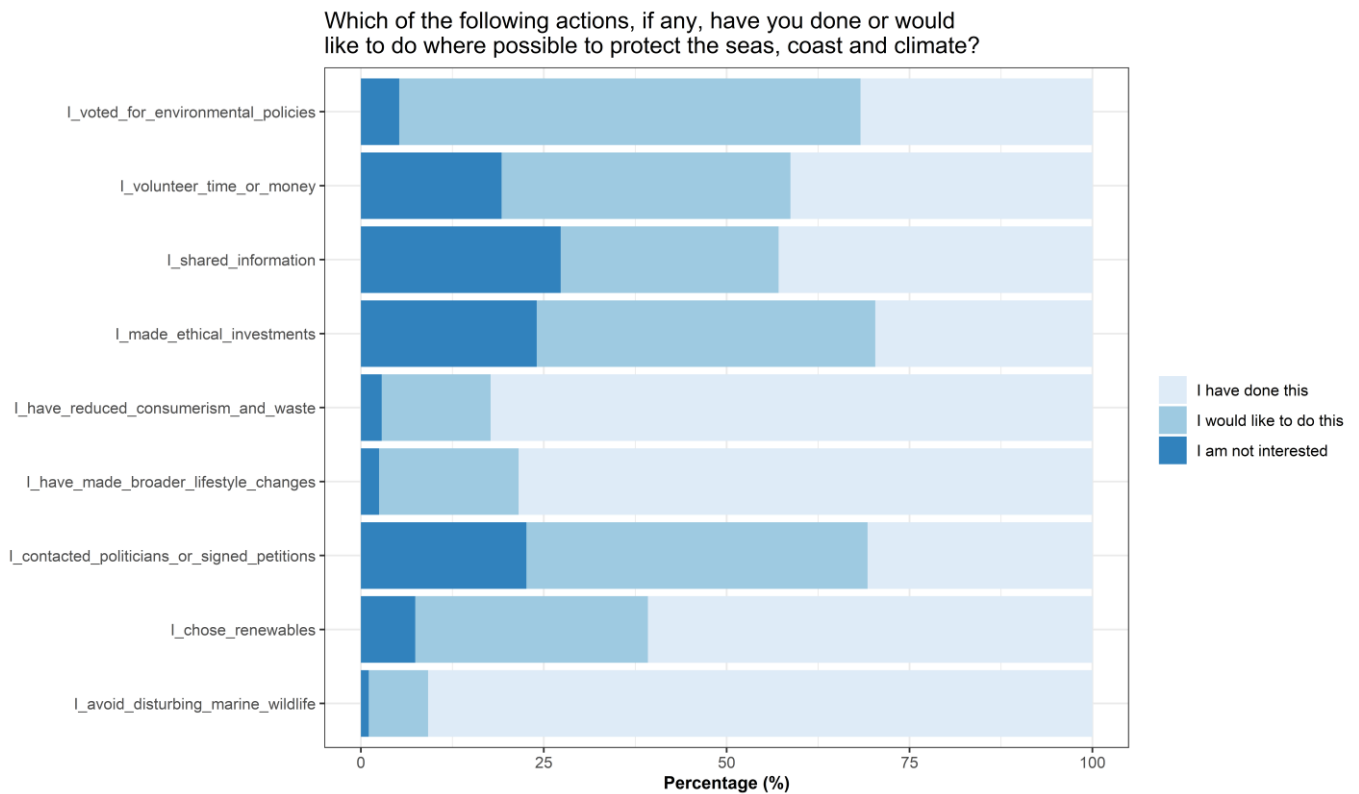


Figure 7) Actions taken by respondents, actions that respondents are interested in and those that they are not (n=273).

Attitudes towards businesses and potential solutions:

- There is a significant relationship between the business-based solutions and perceived importance (Fisher’s Exact test with simulated p-value based on 2000 replicates:  $p < 0.001$  |  $n = 281$ ) (Figure 8).
- Respondents found all actions proposed for businesses to be largely important. Of these business-based actions, 86% of respondents believed that it is very important for businesses to act responsibly when working in the marine environment to minimize their impacts and 86% also believed it very important to increase the efficiency of resource use and reduce waste.
- Less than 1% found these actions to be ‘not important’.
- The comparatively high percentage of blanks amongst older generations is possibly a result of the question format and wording.

Attitudes towards government-driven solutions:

- There was a significant relationship between government-actions and perceived importance (Fisher’s exact test with simulated p-value based on 2000 replicates:  $p < 0.001$  |  $n = 289$ ) (Figure 9).
- Of the actions proposed for the Government, adopting and enforcing regulations was believed to be the most important with 85% of respondents selecting ‘very important’.
- Of the four statements, only the creation of Marine Protected Areas (MPAs) attracted any ‘not important’ responses (<1%).
- The relatively high proportion of blanks was likely due to the question format and wording.



### Of what importance is it that businesses should...

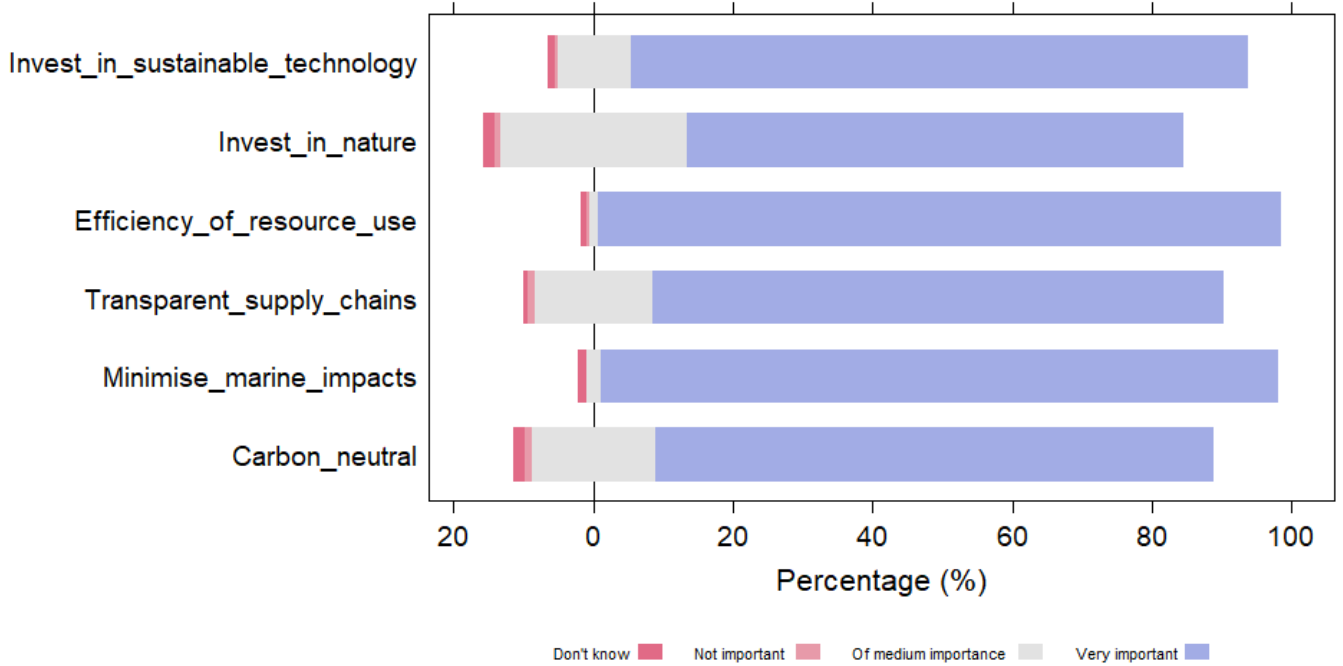


Figure 8) The importance of various business delivered solutions to the Fife community (n=281).

### Of what importance is it that the Government should...

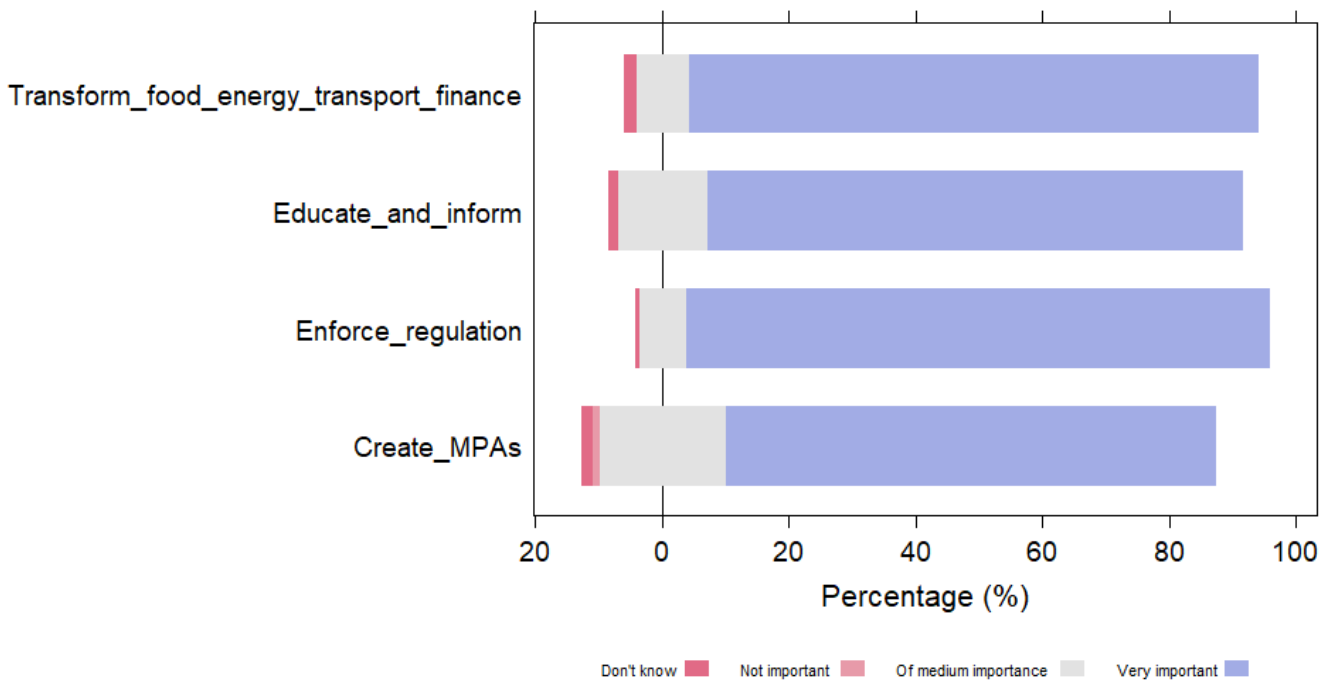


Figure 9) The perceived importance of selected government-actions (n=289).

Reasons for visiting the Fife coast:

- In total, 75% of respondents (n=311) visit coastal spaces solely for the natural coastal features, 1% solely for facilities and attractions, 15% visit both equally and 4% selected neither.
- Women were slightly more inclined to visit the coast for natural features than men, with 77% and 69% respectively.
- Men were more likely to visit the coast for 'both equally' compared to women with 22% and 13% respectively.
- Of those with higher education qualifications, 77% visit the coast for the natural features, compared to 65% of those with secondary education qualifications.

Memberships to environmental organisations that advocate for marine and coastal protection:

- In total, 16% of respondents (n=330) claimed to be members of an environmental organisation that advocated for marine and coastal protection, however, not all organisations listed are strictly membership organisations. The question was likely interpreted as non-financial support or awareness of organisations that advocated for marine and coastal protection.
- Of the 52 (16%) respondents that claimed to be 'members' of an environmental organisation, all had obtained higher education qualifications.
- The RSPB is the most widely supported organisation (9 respondents), followed by Surfers Against Sewage and Greenpeace (both with 8 respondents), and then the Marine Conservation Society (6 respondents) (Figure 10).



Figure 10) A total of 52 respondents claimed to be members of various environmental organisations. The larger the word, the more people are members of that environmental organisation.

Reasons that steer behavioural changes for Fife residents:

- The feeling of concern primarily governed the intention to make personal lifestyle changes with 74% (n=330) concerned about the marine environment, 71% concerned by climate change and 62% worried about future generations. The feeling of wanting to contribute more is also a driver for changing lifestyles with 63% selecting 'I want to do more'. The largest negative reason that may prevent someone from opting to change their lifestyle is a lack of knowledge concerning the extent of solutions; 23% of respondents felt that they did not know the extent of the solutions (Figure 11).
- For those that selected 'other', the reasons given that might prompt lifestyle change were the feeling of making a difference through togetherness and the feeling of limited time to act.
- For those that selected 'other', the reasons given that might hinder lifestyle change were the feeling of too big a problem, lack of support from the government, issues of social justice and poverty being more pressing and lack of clear and direct guidance on how to best make a difference.

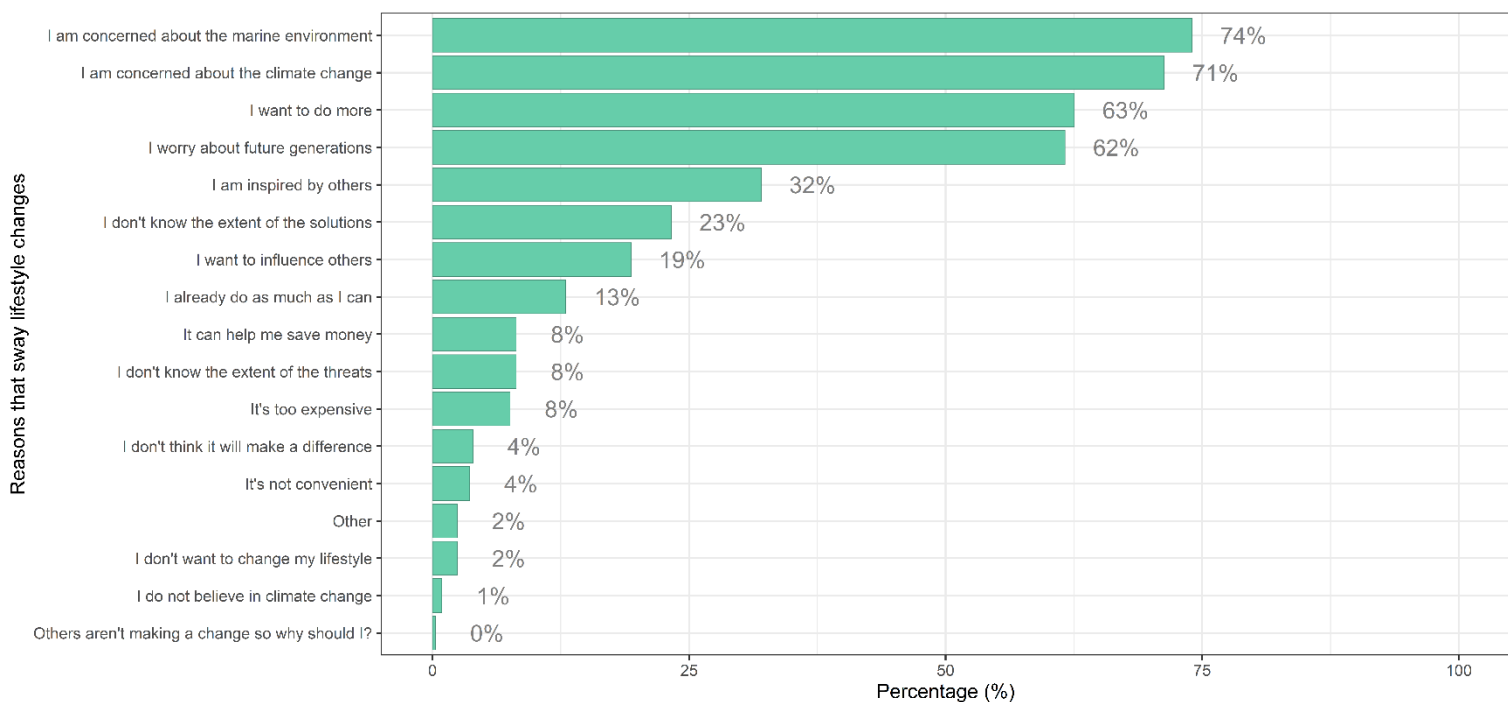


Figure 11) Drivers for and barriers to lifestyle changes for ocean and climate (n=330).

The likelihood of lifestyle changes within the next 12 months, given the reasons presented in figure 11 (See Table 1):

- Young people most frequently (64% of 16-34s) selected that they had 'already made changes but plan to make more'. The percentage of respondents that had 'already made changes but plan to make more' decreases with age with 46% of 65+ selecting this option.
- Nobody selected 'I definitely will not make changes to my current lifestyle'.
- The option 'I don't think I will make any changes to my current lifestyle' was selected more frequently as age increases, with 4% of 16-34s, compared with 10% of those who are 65+.

Influences on seafood purchase (for personal consumption or pets):

- Respondents that do not purchase seafood were asked to leave this question blank; 14% of respondents left it entirely blank, suggesting that ~14% of respondents do not purchase seafood, though this cannot be separated from those that chose not to answer for other reasons. Respondents aged 16-34 had the highest level of blanks consistently across all statements.
- Chi-squared testing identified a significant relationship between the factors that may influence seafood purchase and the degree to which they influence purchase (Pearson’s Chi-squared test:  $\chi^2=135.87$  |  $df=20$  |  $p<0.001$  |  $n=274$ ) (Figure 12). All factors presented generally influence the purchase of seafood.
- The price of seafood had the largest percentages of ‘neutral’ to ‘no influence’, although 24% of 16-34s were strongly influenced by the price of seafood. This decreased as age increased with 10% of 65+ strongly influenced by the price of seafood. However, sustainability and welfare standards are more important to respondents, particularly regarding locally caught and sustainability labels, which strongly influence 35% and 33% of respondents respectively. The carbon footprint of seafood is also an influential factor, albeit less so than other aspects of sustainability.

Table 1) Counts and percentages (n=330) of how likely respondents are to make changes to their lifestyles within the next 12 months to benefit the sea, coast and climate, due to the reasons given in Figure 11.

Possible response	Count	Percentage
I’ve already made changes, but plan to make more	183	55.29
I’ve already made changes and don’t plan on making any more	26	7.85
It is very likely	42	12.69
It is quite likely	57	17.22
I don’t think I will make any changes to my current lifestyle	22	6.65
I definitely will not make changes to my current lifestyle	0	0.00

The importance of various actions that could be taken as part of a vision for the Fife marine and coastal environment:

- Chi-squared tests revealed a significant relationship between potential actions and their perceived importance (Pearson’s Chi-squared test:  $\chi^2=306.86$  |  $df=16$  |  $p<0.001$  |  $n=288$ ) (Figure 13). Each of the actions provided were held with some importance.
- Of the actions presented, increased environmental protection at sea was deemed the most important with 61% of respondents answering ‘very important’. Attracting tourists was the most divisive of the actions with 18% of respondents selecting either ‘somewhat unimportant’ or ‘not important’.
- Respondents that have (or have immediate family that have) studied or worked in the environment sector selected ‘very important’ more frequently than those who have not for supporting the growth of offshore renewable energies (44% and 34% respectively) and increased environmental protection at sea (67% and 59% respectively).
- All age groups placed the most importance on increasing environmental protection at sea.
- There was a relatively high number of blanks, increasing in proportion as age increases likely as a result of the question wording or format.

**If you purchase seafood (for yourself or your pet), to what extent would the following influence your purchase?**

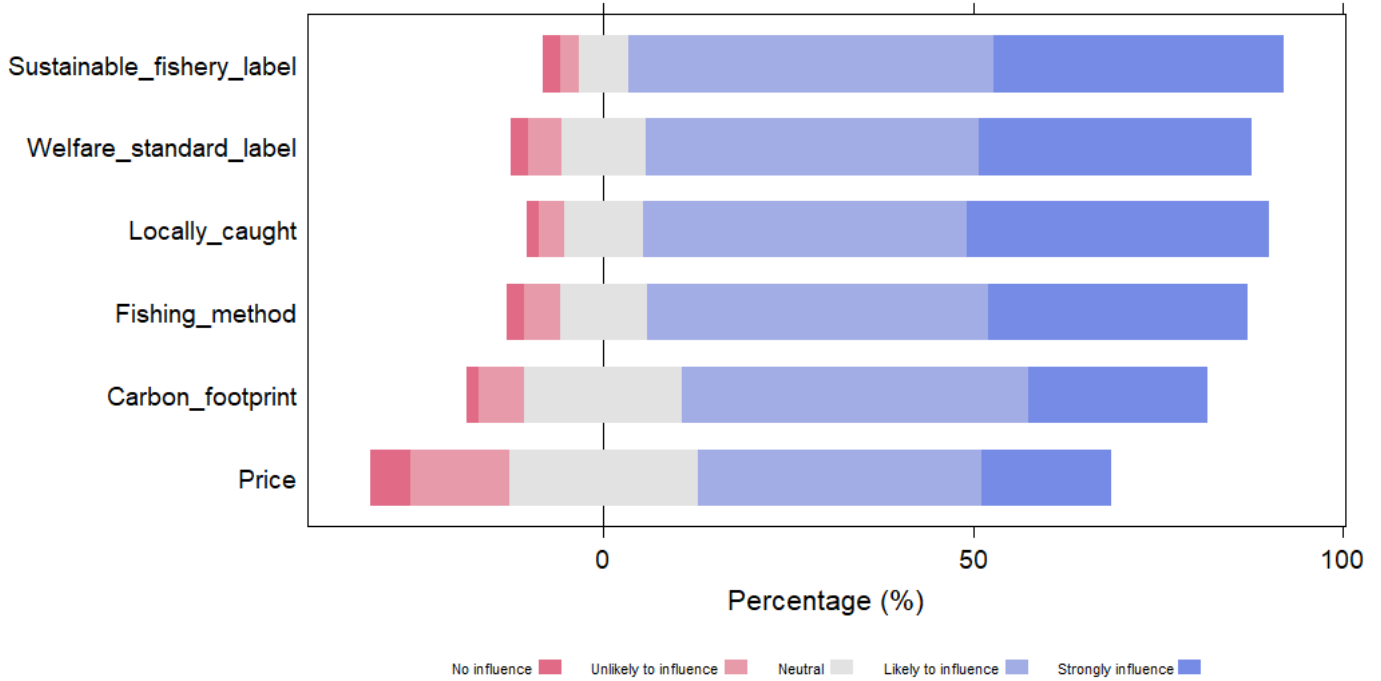


Figure 13) Factors influencing the purchasing of seafood (n=274).

**If you were setting a vision for Fife communities and the marine environment, how important do you think each of these actions are?**

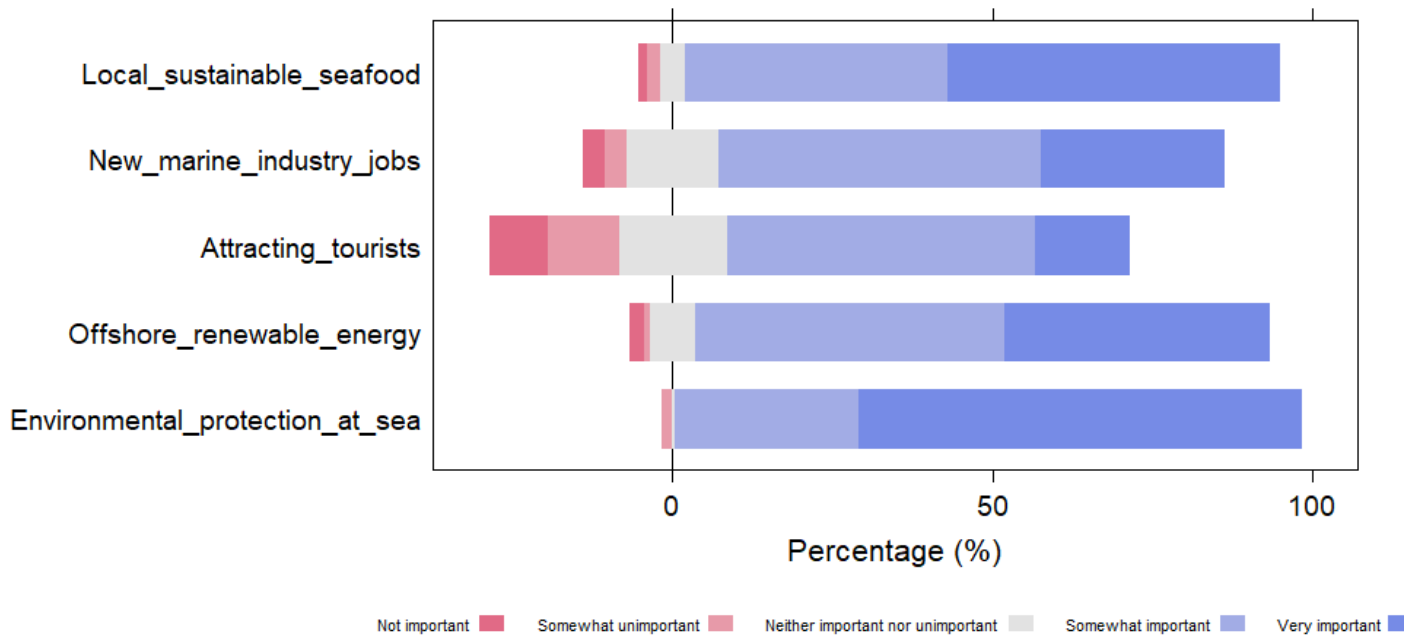


Figure 12) Importance of selected outcomes for the future of Fife communities and marine environment (n=288).

The importance of various benefits afforded by the Fife marine and coastal environment that should be prioritized in a future vision for the Fife coast:

- Chi-squared testing revealed a significant relationship between the benefits of marine and coastal spaces and their perceived importance (Pearson’s Chi-squared test:  $\chi^2=255.69$  |  $df=20$  |  $p<0.001$  |  $n=290$ ) (Figure 14). Respondents generally placed importance on each benefit suggested.
- The three most important benefits were deemed to be the enjoyment of marine nature and wildlife, preserving cultural heritage, and supporting mental health with 60%, 48% and 47% of respondents selecting ‘very important’ respectively. The inspiration of the arts was the most divisive benefit, with 33% of respondents selecting ‘neither important nor unimportant’ to ‘not important’.
- In terms of gender, 66% of women selected ‘very important’ for enjoying marine nature and wildlife compared to 50% of men. More women felt that supporting mental health was ‘very important’ (54% compared to 32% of men). When considering the benefits, the percentage of women selecting ‘very important’ is consistently higher than men.
- Whether a respondent (or immediate family member) had studied or worked in the environment sector made a difference to the responses for the statement ‘enjoying marine nature and wildlife’; for those that have, 71% selected ‘very important’ compared to 56% for those that have not.
- A relatively high number of blanks particularly amongst older respondents, suggests issues with the question wording or format.
- Of those with secondary education qualifications, 41% selected ‘very important’ for providing space to meet with family and friends, compared to 28% of those with higher education qualifications.

**If you were setting a vision for Fife communities and the marine environment, how important do you think each of these benefits are?**

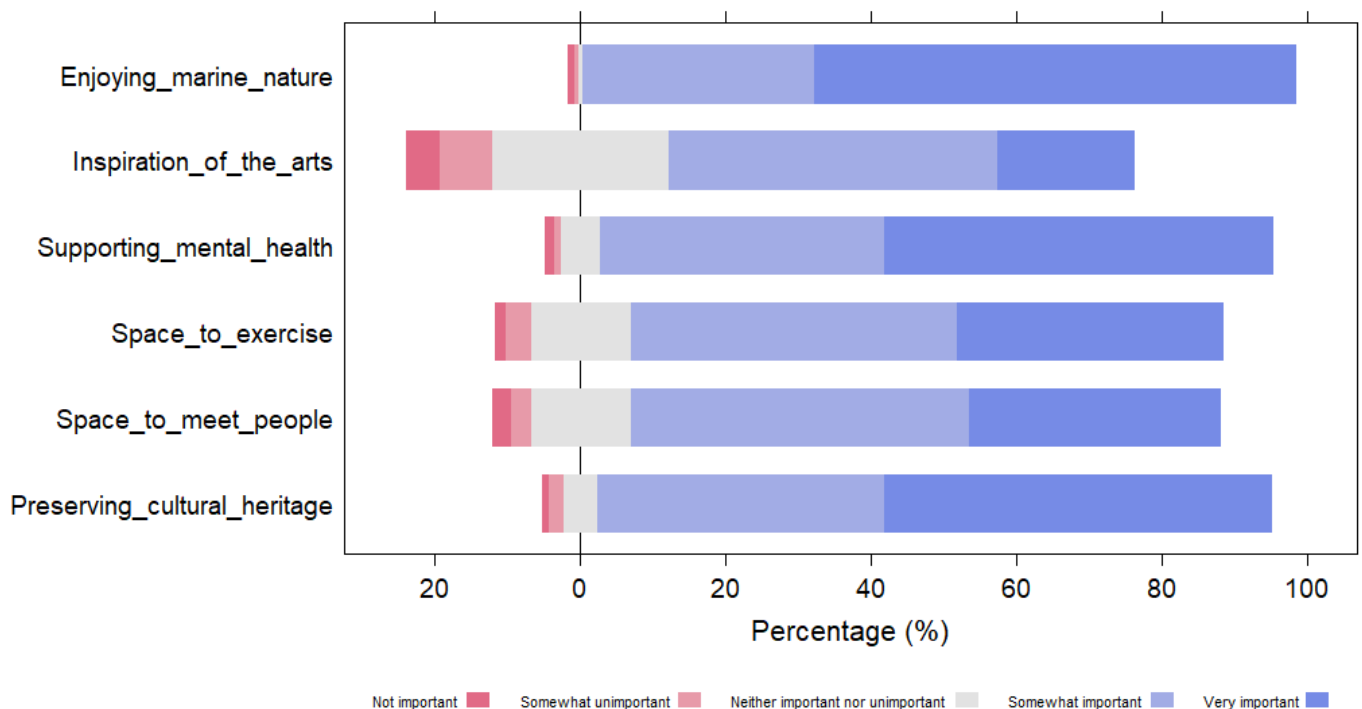


Figure 14) The importance of selected benefits to people from the marine and coastal environment of Fife (n=290).

Emotional responses when thinking about the marine and coastal environment:

- The dominant feelings of respondents (n=329) to the marine and coastal environment are positive with 64% feeling peaceful/ calm, 59% feeling awe/ wonder and 47% feeling happiness. Conversely, 45% of respondents expressed concern when thinking about the marine and coastal environment (Figure 15).
- The majority of respondents (54%) expressed a mixture of positive and negative feelings toward the marine and coastal environment. Less than 5% of respondents feel solely negative emotions and less than 2% have no particular emotional connection with the marine and coastal environment (Table 2).

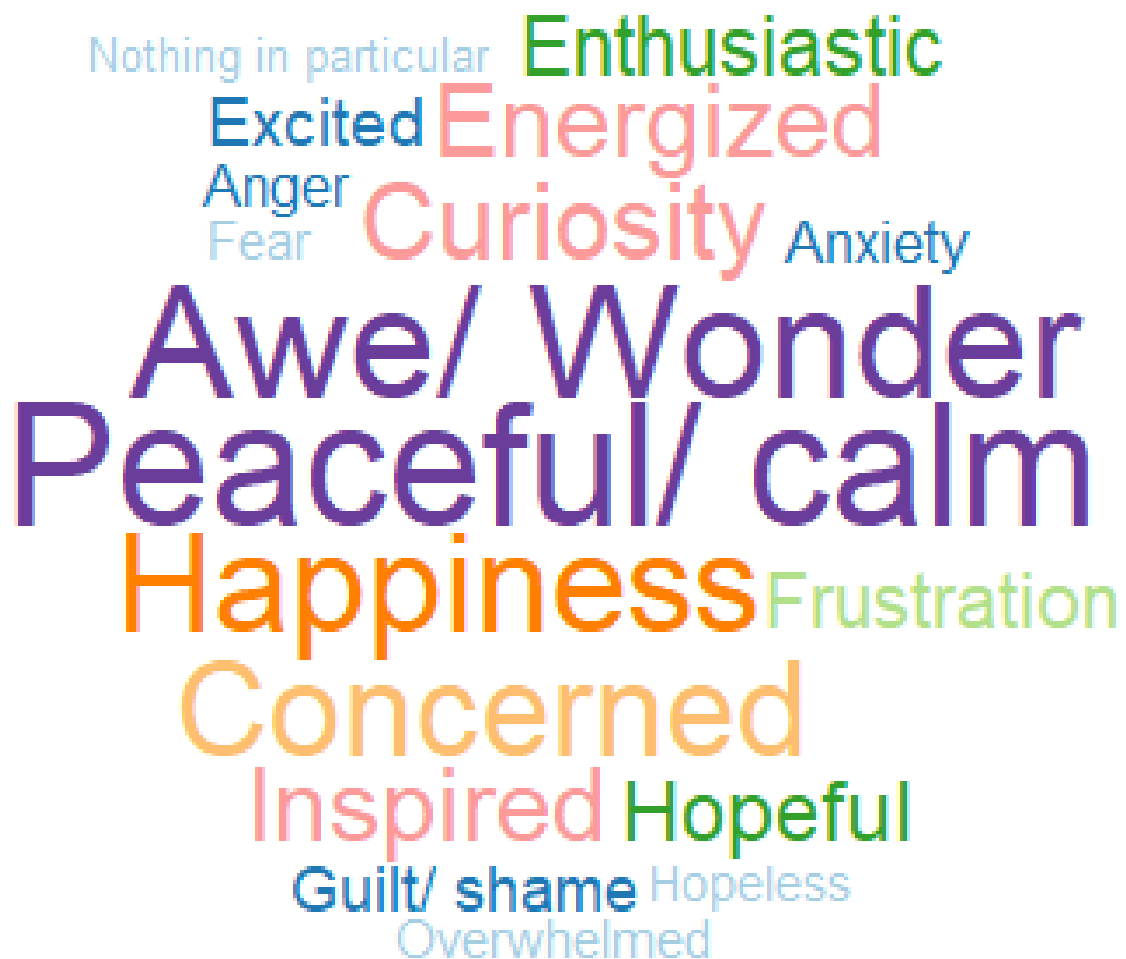


Figure 15) Emotional associations with the marine and coastal environment. The difference in the font size of the words represents the relative frequency of selected emotions.

Table 2) Counts and percentages (n=329) of the types of emotional response given by respondents when asked to think about the marine and coastal environment.

Possible response	Count	Percentage
Positive only	133	40.43
Neutral	5	1.52
Negative only	14	4.26
Mixed emotional response	177	53.80

#### Frequency of visits to the Fife coast before and after COVID restrictions:

- Of all the respondents, 23% (n=323) live on the coastline. Those that live on the coast were removed from the subsequent analysis (therefore n=249).
- In total, 71% of respondents intend to continue visiting the Fife coast at the same frequency post-COVID.
- The majority of respondents (29%) intend to continue visiting the Fife coastline multiple times per week.
- Respondents intending to increase their visits to the Fife coast post-COVID (22%), outnumbered those who plan to decrease their visits (7%).
- No respondents intend to maintain a frequency of never visiting the coast. For those that never visited pre-COVID, all five respondents intend to increase their frequency of visits. There was a single respondent that intends to decrease their coastal visits to 'never' post-COVID.

#### Views on the importance of marine and coastal spaces in light of COVID:

- For the majority (58%, n=329) their views on the importance of the Fife marine and coastal environment have not changed.
- Overall, 21% believed it to be somewhat more important and 20% believed it to be much more important.
- In terms of gender, 24% of women find the marine and coastal environment 'much more important' compared to 11% of men.
- Of those with secondary education qualifications, 33% find the marine and coastal environment 'much more important' compared to 19% of respondents with higher education qualifications.

#### Relationship between the frequency of visits to the Fife Coast and the perceived importance of marine and coastal spaces around Fife post COVID:

- Fisher's Exact testing found no significant relationship between the anticipated frequency of visits and the perceived importance of marine and coastal areas around Fife post-COVID (Fisher's Exact Test with simulated p-values based on 2000 replicates:  $p=0.12$  |  $n=248$ ) (Figure 16). The perceived importance of the local coastline is not related to the frequency with which someone intends to visit.
- For those that anticipate resuming the same frequency of coastal visits post-COVID, 40% intend to visit more than once a week, 30% intend to visit about once a week, 24% intend to visit about once a month and 6% intend to visit less than once a month.



How often do you anticipate visiting the Fife coast post-COVID?

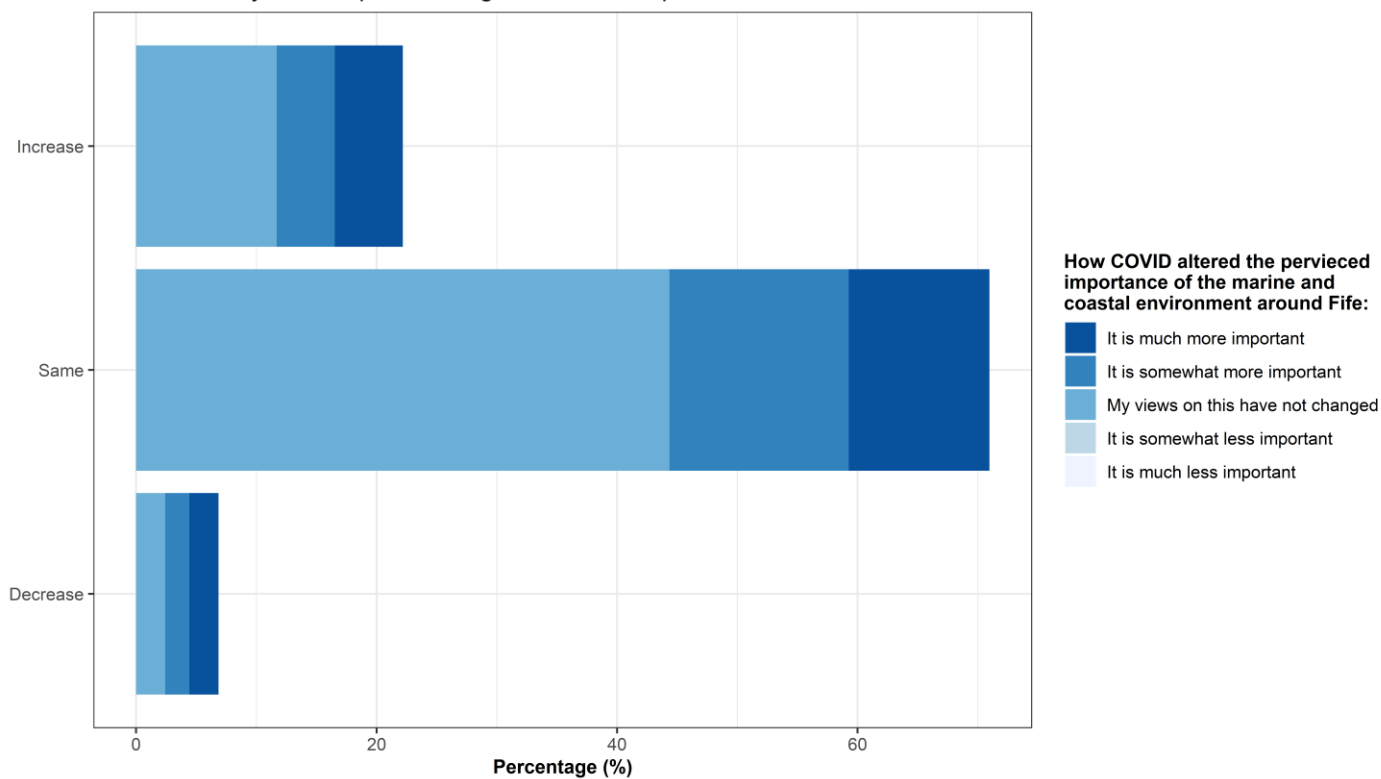


Figure 16) The anticipated regularity of visits to the Fife coast, post-COVID, compared to the rate of pre-COVID visitations, coloured by how COVID shifted respondent’s perceived importance of the local coastline. Consistency between before and after COVID responses are labelled as ‘Same’; those that altered their frequency of visits to the Fife coast are marked as ‘Increase’ or ‘Decrease’. A total of 74 respondents that live on the coastline were removed from this figure (n=248).

## 5.0 Discussion

### 5.1 Summary

A publicly distributed survey was used to assess Ocean Literacy (OL) within the Fife Local Authority area, with a focus on perceived understanding and awareness, peoples’ attitudes towards issues and solutions, their behaviours, behavioural intentions and emotional response towards the marine and coastal environment. Beyond better understanding OL in Fife residents, this survey sought to reveal local visions for the future of the Fife marine and coastal environment as well as opportunistically looking into how COVID may have impacted the appreciation of marine and coastal spaces. A total of 331 usable surveys were obtained, representing all wards within the Local Authority. In some wards, however, responses were too low to incorporate place of residence as a demographic variable. Demographic variables, therefore, consisted of age, gender, whether a respondent or immediate family member had studied or worked in the environment sector and educational attainment.

Notably, young people feel more aware of global issues than local issues. Women show more interest in learning about the local marine and coastal environment and a greater preference for visiting natural coastal features. Those that have (or have immediate family that have) studied or worked in the environment sector show more awareness of local issues and solutions, and are more likely to have shared information with others and place more importance on offshore renewables and at-sea environmental protection when setting a vision for the Fife marine and coastal environment. Those with higher education qualifications also perceive themselves to be more aware of issues and

solutions than those with secondary education qualifications and are more likely to have already made behavioural changes or become members of organisations that promote healthier seas.

## 5.2 Key Messages and recommendations

### 5.2.1 Understanding and Awareness

Results indicated that respondents are more aware of global issues than they are of local issues and solutions. In some respects, this is not surprising as the majority of media reports marine environmental issues as a generic concern, such as plastic pollution and sea-level rise with only occasional reference to specific reports of local interest. This trend is particularly marked in younger age groups suggesting that they may be more connected to global media than older generations due to ease of access to global information through technology and social media. We see a higher perceived awareness of problems over solutions suggesting that greater focus for public engagement and education ought to be placed on a solutions-based approach. An analysis of Canadian school curricula found similar issues for climate literacy whereby educational focus was placed on mechanisms of climate change and links with human activity. The study reported a lack of emphasis on impacts, scientific consensus and solutions (Wynes and Nicholas, 2019). This lack of emphasis, particularly on solutions in education, is a remediable lost opportunity with the potential for challenging social norms and instilling better environmental practice from a young age, by empowering actions through practical guidance.

Marine litter and plastics are the most frequently cited issue for the local coastline with 90% of respondents believing it to be one of the largest local threats. This provides a welcome entry point for OL efforts. Both media coverage of this issue and its visibility at a local level are likely to reinforce perceptions that litter and plastic are “threats”. This highlights the success of various campaigns against plastics in infiltrating public awareness. Firsthand experiences of plastics on the coastline are also likely to have contributed to a perceived higher awareness. Respondents hold travelling/ firsthand experiences as equally important to social media in creating knowledge and awareness. The challenge remains to elicit a similar response towards threats that are less tangible or ‘*out of sight, out of mind*’, such as that of overfishing, damage to marine habitats and some manifestations of climate change in the ocean. This ‘*out of sight, out of mind*’ mentality, possibly related to coastal proximity, has been previously identified as a barrier to OL and positive behavioural change (Wild Labs, 2018; McKinley and Burdon, 2020).

#### 5.2.1.1 Recommendations

- Shifts in education and engagement towards solutions rather than problems.
- Give more attention to local issues in education and public engagement.
- Young people may be a key target for engagement with local issues, which could potentially be broached in a formal education setting (e.g. school or college), encouraging young people to actively be involved in environmental campaigns, marine citizenship initiatives (e.g. beach cleans) and citizen science projects (e.g. Citizen Fins).
- Marine litter and plastics can be used as an entry point for engaging people in OL, however, greater efforts are recommended to develop an awareness of other key issues and leverage behavioural insights and the skills of public engagement professionals to best effect.
- Invest time, energy, and resources in connecting people with the marine and coastal environment, through firsthand experiences such as citizen science initiatives and wildlife watching.
- Investigate the role of coastal proximity in OL.

### 5.2.2 Attitudes

The majority of respondents value the role of science in the push towards healthier seas, are interested in learning more, particularly about the local marine environment, and recognise the role of human activity in the rapidly changing climate. These attitudes are positive and helpful starting points for OL public engagement initiatives, showing a widely held acceptance of responsibility for rapid environmental change and a willingness to engage with scientific findings. Whilst the survey indicates a collective responsibility for finding solutions to the challenges facing the coastal and marine environment, generically, there does appear to be an expectation that Government and businesses, rather than the individual, should lead this process. The recognition of personal responsibility is welcome, though a top-down approach is critical to spearhead positive change in areas where people feel they have little influence. Individual action may also become more effective if there is an expectation that challenges current social norms coming from higher powers. As such, this suggests that there is a legislative gap for tools, infrastructure and simple advice that enables people to make informed decisions.

#### 5.2.2.1 Recommendations

- Shifting science communication, public engagement activities and formal education towards a solutions-based approach for widely accepted problems, such as that of a rapidly changing climate.
- Provision of simple advice and tools from the government, academy, third sector and businesses that enable people to take personal action.

### 5.2.3 Behaviours

Many respondents have already made lifestyle changes, with very few respondents being unwilling. This positive uptake appears to be largely driven by concern for the environment and future generations. Further work should be undertaken to better understand the interpretation of 'lifestyle changes' and their subsequent longevity. Those aged 65+ had the highest percentage of 'I don't think I will make any changes to my current lifestyle', suggesting that age instils some rigidity in thinking and habits. A total of 23% of respondents also felt unaware of solutions. Many would like to instigate more change using their votes, lobbying, ethical investments, switching energy providers and volunteering or donating money. Certain lifestyle changes proved to be more divisive than others; the sharing of information, volunteering time or money, ethical investments and contacting politicians/signing petitions attracted higher percentages of disinterest. This suggests that these particular lifestyle changes may prove to be too difficult, time-consuming or expensive for some. In turn, this implies that at present, there are barriers to their implementation; these barriers, be it technical, financial or mental need to be tackled via fiscal, legal and educational tools. 'The action perspective' was proposed as a means of promoting positive behavioural changes by identifying the barriers towards change within the social context and how those barriers have been successfully breached (Lokhorst and van Woerkum, 2011). This empowers interested parties to implement their good intentions and share their successes with others.

When it comes to seafood, for young people, price is an important concern, however, the labelling of seafood, particularly regarding fishery sustainability, is the most widely regarded influencing factor to purchase. Though the carbon footprint was not the most influential, there is an opportunity here to include the carbon-labelling of seafood and other food products as a method of swaying consumeristic tendencies. Carbon labelling provides a means by which consumers can hold industries accountable with their purchases. Literature suggests that there is potential when combined with reduced prices on lower-carbon goods, to be influential in reducing carbon emissions (Vanclay *et al.*, 2011).

#### 5.2.3.1 Recommendations

- Undertake further work to identify whether lifestyle changes are ‘tokens’ or ‘meaningful’ lasting changes that also triggers further change in the individuals or those around them.
- Clearer advice, tools and opportunities to make changes.
- Some technical, financial and mental barriers will remain, which need to be identified and tackled through fiscal, legal and educational tools.
- Older people may be a key target group for behavioural change efforts.
- Promote seafood certification labels and a public understanding of what the different labels mean.
- Develop a science-business-government instigated movement towards the carbon-labelling of goods, including seafood, either as a distinct certification process or integrated with other eco-labels.
- Make use of social science interventions to promote behavioural changes. This includes ‘the action perspective’, challenging social norms, making pledges, labelling one’s self as “the kind of people who do such things” (social identity) and instilling an emotional response (albeit still rooted in robust evidence) such as collective guilt (Lokhorst and van Woerkum, 2011). Social science tools can further aid our understanding of how various audiences relate to the sea and can help inform marine spatial planning and policy through the documentation of use, cultural values and tenure rights (Bennett, 2019; McKinley, 2020).

#### 5.2.4 Emotional and experiential underpinning

As aforementioned, travelling and firsthand experiences form a substantial portion of a person’s knowledge base concerning the marine and coastal environment. However, the results suggested that the sea also instils an emotional connection in its visitors. A sense of peace and awe were the most frequently experienced emotions, followed by happiness. This has implications for the marine and coastal environment as a source of emotional well-being and highlights the importance of blue spaces in Fife. The majority expressed mixed feelings; any feelings of concern, frustration, guilt or anxiety related to its health further illustrates the value placed on the marine and coastal environment. The 2017-18 Scotland’s People and Nature Survey helps to substantiate the benefits of the outdoors, (blue spaces included). Their findings indicate that a quarter of outdoor visits were solely for relaxation and enjoyment of the weather or fresh air, bringing improvements to physical health or feeling energised and unwinding (Wilson, V. & Seddon, 2018).

An issue raised was that of the lack of accessibility along much of the Fife coast. A respondent voiced their frustrations:

*“That is my only disappointment with our stunning coast, that people in wheelchairs are cut off from so much of it. It’s one of those things that if you don’t live it, you don’t realise how bad it is.”*

(G White. 2021, *pers. comms.*, 18 May).

The survey highlighted the importance of the Fife coastline to the local community for well-being. To have limited access to the coastline is to restrict the benefits that the marine and coastal environment can provide and serves as an injustice of inequality to those for whom access is limited. This is something we recommend be taken up with coastal planning authorities and voluntary coastal management bodies for Fife.

#### 5.2.4.1 Recommendations

- Continue efforts to protect and restore nature where it has been degraded.

- Make improvements on the accessibility of natural areas and coastal spaces for people to enjoy responsibly.

### 5.2.5 Visioning

Respondents are most interested in increasing at-sea environmental protection and local sustainable seafood. There is also strong support for new industries including renewable energy and tourism, though tourism appears to be the most divisive of these, with higher percentages of people deeming it of lesser importance. When thinking about the benefits of marine and coastal spaces, most place high value in marine nature and wildlife, cultural heritage and the use of coastal spaces to support mental health. The arts along with space to exercise and meet people are also recognised as important benefits by most, though to a lesser extent.

#### 5.2.5.1 Recommendations

- An OL survey can be a basis for examining public priorities for the future of a marine and coastal area, so may provide a valuable contribution to the early stages of a planning or policy development process.
- There is likely work to be done to ensure coastal tourism is responsible and not an imposition on locals.
- Natural capital and ecosystem services framing for policy and management are likely to be generally welcomed.

### 5.2.6 Consequences of COVID

Over a fifth of respondents lived within close proximity to the Fife coast at the time of surveying. This may indicate a higher interest in coastal matters amongst residents at closer proximity and may have created a bias in the data, though proximity was not defined and is prone to subjectivity. For the majority (71%) of respondents, the frequency of their visits will resume post-COVID, with a fifth increasing the visit frequency. For the 7% that have decided to decrease the frequency of their visits to the Fife coast, reasons can only be speculated, however, the easing of restrictions relating to COVID and associated anxiety, particularly for those who are shielding, may contribute to this.

Whilst 41% of respondents believe the local marine and coastal environment is more important following the easing of COVID restrictions, there was no apparent connection between the perceived importance of the local marine and coastal environment and the frequency at which respondents intend to visit the coastline post-COVID. A further 58% of respondents reported that their views on the local marine and coastal environment remain unchanged throughout the pandemic. This could be related to limited sample size and bias in respondents towards those that are already interested in coastal matters and hence would not necessarily have changed their views post-COVID. Though it remains speculation, this may be an indication that many respondents valued local blue spaces highly regardless of circumstances. This also suggests that the frequency of visits to the coast may not be a major contributing factor to the broadly held importance of the sea. This may be of interest as it could suggest that OL initiatives may have an overall positive impact on the seas amongst communities that are landlocked and unable to visit with any regularity.

#### 5.2.6.1 Recommendations

- Further work to understand motivations for different use of local coast, and any barriers, would be useful.
- Investigate reasons that would contribute to decreased visits post-COVID.
- Investigate factors that influence the perceived importance of marine and coastal spaces and understand what importance is attributed to blue spaces regardless of COVID.
- Determine the impact of OL initiatives amongst inland communities.

### *5.3 Biases and limitations*

Survey distribution techniques, question design and question-wording may have unintentionally contributed to bias within the survey responses. The most notable demographic biases observed within the data were female:male (70% and 27% respectively), and educational attainment (Higher education qualification account for 82%, Secondary education qualification for 14% and No formal qualifications 2%). There was also an inter-ward bias, with electoral wards generally closer to the University of St Andrews showing higher response rates, and generally lower response rates from wards that include more deprived communities. To address the differences in sex and qualification biases, data were grouped and analysed separately to allow a direct comparison of percentages. Every effort was taken to improve the survey response from wards at a greater distance from the university, although we were limited by time and resources. Of the ~310,000 eligible community members (as calculated from the 2019 National Records of Scotland statistics) the 331 surveys obtained represents a response rate of 0.11%. To further improve the response rates, surveys could be further customized to specific areas within a region (e.g. A Methil-Eye View) to encourage fine-scale participation that can be later aggregated. This may also produce higher returns and allow deeper analysis by demographic variables.

Facebook was used to target area-specific community groups in social media campaigns and flyers were distributed to public spaces in areas of low uptake. Although the data were not rich enough to allow an inter-ward analysis, having responses from each ward was taken as an indication of a reasonable geographic spread in the data. The higher response rates within proximity to the university suggest, however, that this might be a more appropriate scale for such a survey and its outputs.

For the Likert questions, the number of unanswered statements (blanks) present in the data increased with age. This is likely due to the question wording and/or format. Likert questions were presented in a 'carousel' format with statements auto-advancing once an answer had been selected. It appears as age (and perhaps technological uncertainty) increases, fewer respondents noticed the statements auto-advancing and prematurely moved onto the next question. The percentage of blanks does not exceed 22% and reduces throughout the survey presumably as respondents became accustomed to the question style. The varying percentage of blanks across ages will obscure inter-age differences for the Likert questions, however, the patterns across any single age group should bear scrutiny.

#### *5.3.1 Recommendations*

The survey was limited by resources, time and COVID restrictions. For similar surveys with adequate time and budgeting we recommend:

- Advertising the survey online and in print through local news broadcasters.
- The use of funding to boost the reach of social media posts with a weblink to the online survey.
- To be accessible to those who may not be technologically savvy, the creation of a series of survey hardcopies with Freepost envelopes.
- If using a 'carousel' format with auto-advancing statements, ensuring that the question layout is well explained.
- Bringing in public-facing/ community-based organisations as partners early on to support survey promotion, enhance response rates and provide opportunities for collaboration with potential public engagement.
- Evaluation of the role of universities to include research on climate, sustainability and marine and coastal research, plus engagement with local communities on these outputs.

- Share findings through regional conferences, such as those held by organisations like the Tay Estuary Forum, and through ‘open days’ like the University of St Andrews ‘Science Discovery Day’.
- A comprehensive series of interviews with respondents to understand people’s reasoning behind the answers they selected.
- Including more personal and location-specific demographic data, in line with GDPR guidelines and ethical data standards, to enable a deeper analysis of demographic differences in OL and subsequent targeting of public engagement initiatives.
- Consideration of a nested approach with a suite of surveys, identical in substance, but designed and worded to be tailored to a smaller geographic area (e.g. ward level). The finer granularity of data may provide insight into regional differences in OL and has the potential to steer the direction of public engagement activities locally and nationally.
- Repeating the survey process over the years to document shifts in perceived OL across demographics as a response to public engagement activities.

#### 5.4 Conclusion

This survey of residents of the Fife Local Authority area has provided a snapshot of perceived OL in Fife. This includes how the respondents perceived their awareness of marine and coastal issues, including climate change, their attitudes towards solutions and the parties responsible for delivering them, as well as their willingness to alter their lifestyles and priorities for the future. This project has demonstrated what is achievable on a limited budget and timeframe. Its critique and adaptation regionally across Scotland could provide a nested national snapshot of OL, and in due course potentially a time series, also with the potential to provide a useful tool to inform marine and coastal planning and policy processes. Surveying only goes part way to achieving an “Ocean Generation of informed citizens” (IOC-UNESCO, 2019), so follow up with the appropriate public engagement is an essential next step and opportunities for collaboration in this should be sought.

## 6.0 Acknowledgements

Thank you to DEFRA for making their survey questions and technical reports available, from which we tailored and tested a regional approach in Scotland. Many thanks also to Bernie McConnell, David McCollum and Tania Mendo of the University of St Andrews and to all that provided feedback on the survey draft. We also wish to thank Calum McAndrew, Hannah Ladd-Jones, James Rimmer, David Patterson, Jane Williamson, Museums of the University of St Andrews, Moya Crawford and all that engaged with and volunteered to distribute the survey around Fife communities.

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## 8.0 APPENDIX 1

### Survey Questions

Pages 35-52 shows a hardcopy of the survey distributed to Residents and temporary residents aged 16+ in the Fife Local Authority. Ethical approval was granted by The School of Biology Ethics Committee acting on behalf of the University Teaching and Research Ethics Committee (UTREC) (Approval Code: BL15446).

To access analysis tables in full, please contact the authors at: [crmg@st-andrews.ac.uk](mailto:crmg@st-andrews.ac.uk)



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# Coast to Ocean: A Fife-Eye View

**Many thanks for agreeing to participate in our 'Coast to Ocean: A Fife-Eye View' survey. It will take most under 15 minutes to complete. We recommend taking this survey on a laptop but it is also compatible with tablets and smartphones**

We invite you to help us identify Fife communities' knowledge and responses towards the coastal and marine environment around Fife and beyond, including awareness of current threats and their solutions. The survey results will help us inform and engage you further on these topics. This study is being conducted by the University of St Andrews in partnership with the People Ocean Planet Initiative.

You will be able to opt into our prize draw for a £50 voucher (options available) on completion of the survey, to be drawn on the 9th July 2021. If you have any questions, or would prefer to answer the survey by telephone/ video call, please contact Felicity Spoons of the Coastal Resource Management Group at [crmg@st-andrews.ac.uk](mailto:crmg@st-andrews.ac.uk)

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**Because this survey is being conducted through the University of St Andrews, we must provide you with a Participant Information Sheet for your records. If you do not already have one, please ask for a copy.**

**If there is anything you do not understand please contact us at: [crmg@st-andrews.ac.uk](mailto:crmg@st-andrews.ac.uk) and we will be happy to explain.**

For general enquiries, please contact: [crmg@st-andrews.ac.uk](mailto:crmg@st-andrews.ac.uk)

**Ethical approval Code: BL15446**

Further information is available at <http://www.st-andrews.ac.uk/utrec/guidelinespolicies/complaints/>

## **Consent**

The University of St Andrews attaches high priority to the ethical conduct of research. Your consent confirms that you have read the participant information provided, had the chance to ask any outstanding questions and are willing to participate in this study, however, this does not commit you to anything you do not wish to do and you are free to withdraw your participation at any time before 16th July 2021.

---

**Do you consent to taking part in this research? (Please tick to proceed.)**

**I consent to participate**

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# Coast to Ocean: A Fife-Eye View

Please select your residency status. (This includes temporary residents, e.g. students. Please tick one.)

- I am a resident of Fife but do not own property there
- I am a resident and own property in Fife
- I am not resident but own property in Fife
- I am in temporary accommodation in Fife
- Other

If other, please specify:

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## Part 1 – Background

Qu 1) How would you rate the health of the marine and coastal environment in Fife? (Please tick one.)

- Very poor
  - Poor
  - Neither good nor poor
  - Good
  - Very good
  - Don't know
-



# Coast to Ocean: A Fife-Eye View

**Qu 2) How would you rate your awareness of...? (Please tick one per statement.)**

	Very unaware	Unaware	Neither aware nor unaware	Aware	Very aware
The problems facing the global marine and coastal environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The problems facing the Fife marine and coastal environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The solutions to those problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Qu 3) Of the following possible threats, please select up to five that you think are the biggest threat to the Fife marine and coastal environment. (Please tick a maximum of 5.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Climate change                             | <input type="checkbox"/> Chemical pollution   |
| <input type="checkbox"/> Damage to marine habitats                  | <input type="checkbox"/> Non-native/ alien/ introduced species  |
| <input type="checkbox"/> Coastal developments and infrastructure    | <input type="checkbox"/> Overfishing and/ or destructive fishing methods and/ or poor aquaculture practices |
| <input type="checkbox"/> Increases in Shipping                      | <input type="checkbox"/> Lack of public understanding about marine and coastal environments                 |
| <input type="checkbox"/> Disturbance of marine and coastal wildlife | <input type="checkbox"/> Unregulated, poorly managed and/or illegal activities at sea                       |
| <input type="checkbox"/> Marine litter and plastics                 | <input type="checkbox"/> Coastal erosion and flooding   |
| <input type="checkbox"/> Other                                      |   |

**If other, please specify:**

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# Coast to Ocean: A Fife-Eye View

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**Qu 4) What are your top five sources of knowledge regarding marine and coastal environments?  
(Please tick a maximum of 5.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Formal education (e.g. school or university etc.)              | <input type="checkbox"/> Exhibitions/ festivals             |
| <input type="checkbox"/> Marine themed attractions (e.g. museums, zoos, aquariums etc.) | <input type="checkbox"/> Talks/ seminars                    |
| <input type="checkbox"/> Social Media   | <input type="checkbox"/> News articles                      |
| <input type="checkbox"/> Environmental campaigns  | <input type="checkbox"/> Celebrities                        |
| <input type="checkbox"/> Books/ Magazines   | <input type="checkbox"/> Websites                           |
| <input type="checkbox"/> Wildlife and natural history documentaries/ film               | <input type="checkbox"/> Travelling/ first-hand experiences |
| <input type="checkbox"/> Family/ friends  | <input type="checkbox"/> Other                              |
-



# Coast to Ocean: A Fife-Eye View

**Qu 7) Thinking about climate change and human activities, which of the following statements comes closest to your views? (Please tick one.)**

- The climate is changing relatively quickly because of human activity
- The climate is changing relatively quickly but this is not due to human activity
- The climate is changing relatively quickly due to a combination of human activity and natural processes
- We cannot say whether the climate is changing relatively quickly due to human activity
- We cannot say whether the climate is changing
- Don't know

**Qu 8) When thinking about solutions to the problems facing our seas, coast and climate, to what extent do you agree with the following statements? (Please tick one per statement.)**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I (and other citizens) have an important role in driving solutions for a sustainable ocean and society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Government is responsible for delivering solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Businesses are responsible for delivering solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can do more to help the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Government can do more to help the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Businesses can do more to help the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





# Coast to Ocean: A Fife-Eye View

**Qu 9) Which of the following actions, if any, have you done or would like to do where possible to protect the seas, coast and climate? (Please tick one per statement.)**

	I have done this	I would like to do this	I am not interested
I voted for strong marine environmental protection policies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I contacted my local politician or signed petitions about issues affecting the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have chosen green tariffs and renewable energy providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have changed my consumer choices and waste habits to benefit the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have made broader lifestyle changes to reduce my carbon footprint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I volunteered time and/ or money to support the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talked to others or shared online about supporting the marine and coastal environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have made ethical investments and savings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I avoid disturbing marine wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Coast to Ocean: A Fife-Eye View

Qu 10) Of what importance is it that businesses should... (Please tick one per statement.)

	Not important	Of medium importance	Very important	Don't know
Invest in sustainable technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Invest in nature and conservation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase efficiency of resource use and reducing waste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide clear and transparent supply-chain information to consumers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Act responsibly when working in the marine environment to minimise impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commit to being carbon neutral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Qu 11) Of what importance is it that the Government should... (Please tick one per statement.)

	Not important	Of medium importance	Very important	Don't know
Help transform the food, energy, transport and finance systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Educate and inform society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopt and enforce regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create more marine protected areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Coast to Ocean: A Fife-Eye View

## Part 2 – Your Choice

**Qu 12) We want to know how COVID-19 affected the frequency of your visits to the Fife coast? How often did you visit the Fife coast... (Please tick one per statement and exclude trips for work related purposes.)**

	Never	Less than once a month	About once a month	About once a week	More than once a week	I live right on the beach
<b>Before COVID-19?</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>During COVID-19?</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After COVID-19? (Your expectation)</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Qu 13) What is your main reason for visiting marine or coastal spaces? (Please tick one.)**

- Facilities and attractions (e.g. golf courses, play-areas, cafes etc.)
- Natural coastal features (e.g. beaches, cliffs, rockpools etc.)
- Both equally
- Neither

**Qu 14) Are you a member of an environmental organisation that advocates for marine and coastal protection? (e.g. Marine Conservation Society or Surfers Against Sewage) (Please tick one.)**

- Yes
- No
- Prefer not to say

# Coast to Ocean: A Fife-Eye View

If yes, please specify:

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**Qu 15) Which of the following reasons come closest to your views on changing your lifestyle to benefit the seas, coast and climate in the next 12 months? (Please select all that apply.)**

- |  |  |
|--|--|
| <input type="checkbox"/> I want to do more                           | <input type="checkbox"/> I already do as much as I can                   |
| <input type="checkbox"/> I am concerned about the climate change     | <input type="checkbox"/> I do not believe in climate change              |
| <input type="checkbox"/> I am concerned about the marine environment | <input type="checkbox"/> I don't think it will make a difference         |
| <input type="checkbox"/> I worry about future generations            | <input type="checkbox"/> I don't want to change my lifestyle             |
| <input type="checkbox"/> I am inspired by others                     | <input type="checkbox"/> Others aren't making a change, so why should I? |
| <input type="checkbox"/> It can help me save money                   | <input type="checkbox"/> It's too expensive                              |
| <input type="checkbox"/> I want to influence others                  | <input type="checkbox"/> It's not convenient                             |
| <input type="checkbox"/> I don't know the extent of the threats      | <input type="checkbox"/> I don't know the extent of the solutions        |
| <input type="checkbox"/> Other                                       |  |

If other, please specify:

---



# Coast to Ocean: A Fife-Eye View

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**Qu 16) Because of the reasons you gave in the previous question, how likely is it that you will make lifestyle changes to benefit the seas, coast and climate in the next 12 months? (Please tick one.)**

- I've already made changes, but plan to make more
  - I've already made changes and don't plan on making any more
  - It is very likely
  - It is quite likely
  - I don't think I will make any changes to my current lifestyle
  - I definitely will not make changes to my current lifestyle
-



# Coast to Ocean: A Fife-Eye View

**Qu17) If you purchase seafood (for yourself or your pet), to what extent would the following influence your purchase? (Please tick one per statement. If you do not purchase seafood, please leave blank.)**

	No influence	Unlikely to influence	Neutral	Likely to influence	Strongly influence
<b>A label indicating if a fishery is sustainable</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>For farmed fish, a label indicating the animal welfare standard</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Whether it was caught locally or not</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Information on the fishing method</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The carbon footprint of seafood</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Price of seafood</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# Coast to Ocean: A Fife-Eye View

## Part 3 – Your Vision

Qu 18) If you were setting a vision for Fife communities and the marine environment, how important do you think each of these actions are? (Please tick one per statement.)

	Not important	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Very important
<b>Providing local and sustainable seafood</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Creating new jobs in marine industries</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Attracting tourists</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Supporting growth of offshore renewable energy</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Increasing environmental protection at sea</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Coast to Ocean: A Fife-Eye View

**Qu 19) If you were setting a vision for Fife communities and the marine environment, how important do you think each of these benefits are? (Please tick one per statement.)**

	Not important	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Very important
Enjoying marine nature and wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing inspiration for the arts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supporting mental health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing space to exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing space to meet with family/ friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preserving cultural and historic heritage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Qu 20) Which five words best describe what you feel when thinking about the marine and coastal environment? (Please tick a maximum of 5 which come closest.)**

- |                                      |   |
|--------------------------------------|---|
| <input type="checkbox"/> Happiness   | <input type="checkbox"/> Anger          |
| <input type="checkbox"/> Awe/ Wonder | <input type="checkbox"/> Peaceful/ calm |
| <input type="checkbox"/> Hopeful     | <input type="checkbox"/> Hopeless       |
| <input type="checkbox"/> Fear        | <input type="checkbox"/> Curiosity      |
| <input type="checkbox"/> Frustration | <input type="checkbox"/> Boredom        |





# Coast to Ocean: A Fife-Eye View

- |  |  |
|--|--|
| <input type="checkbox"/> Excited       | <input type="checkbox"/> Guilt/ shame          |
| <input type="checkbox"/> Inspired      | <input type="checkbox"/> Anxiety               |
| <input type="checkbox"/> Disinterested | <input type="checkbox"/> Energized             |
| <input type="checkbox"/> Enthusiastic  | <input type="checkbox"/> Nothing in particular |
| <input type="checkbox"/> Overwhelmed   | <input type="checkbox"/> Concerned             |

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**Qu 21) Has the coronavirus pandemic changed your views on how important the marine and coastal environment is around Fife? (Please tick one.)**

- It is much more important
- It is somewhat more important
- My views on this have not changed
- It is somewhat less important
- It is much less important

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## Part 4 – About You

**Please select your age bracket:**

- |                       |                       |                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 16-24                 | 25-34                 | 35-44                 | 45-54                 | 55-64                 | 65-74                 | 75+                   |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



# Coast to Ocean: A Fife-Eye View

Please select the sex assigned to you at birth:

- Male  Female  Prefer not to say

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What is your highest level of qualification? (Please tick one.)

- I am still in full-time education
- No formal qualifications
- GCSEs or equivalent (such as O Level, NVQ level 2, BTEC First or an RSA Diploma)
- A-Levels or equivalent (such as Scottish Highers, NVQ level 3, BTEC National)
- Higher education (such as a HND or a NVQ level 4)
- Bachelors' Degree or equivalent (such as a NVQ level 5)
- Postgraduate Degree or equivalent
- Other

If other, please specify:

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# Coast to Ocean: A Fife-Eye View

Please select your electoral ward. If you do not know your electoral ward, please enter your postcode onto the Scottish Boundary Commission website to find it and then select your ward below:

Scottish Boundary Commission Website: <http://www.lqbc-scotland.gov.uk/>

- Buckhaven, Methil and Wemyss villages
- Burntisland, Kinghorn and Western Kirkcaldy
- Cowdenbeath (including Kelty and Crossgates)
- Cupar (including Springfield and Ceres)
- Dunfermline Central
- Dunfermline North
- Dunfermline South
- East Neuk and Landward (e.g. Anstruther, Boarhills, Largoward and Elie)
- Glenrothes Central and Thornton
- Glenrothes North, Leslie and Markinch
- Glenrothes West and Kinglassie
- Howe of Fife and Tay Coast (e.g. Falkland, Auchtermuchty, Ladybank and Newburgh)
- Inverkeithing and Dalgety Bay (including Aberdour and Hillend)
- Kirkcaldy Central
- Kirkcaldy East
- Kirkcaldy North
- Leven, Kennoway and Largo
- Lochgelly, Cardenden and Benarty
- Rosyth (Including Charlestown and Crombie)
- St Andrews (including Strathkinness and Mount Melville)
- Tay Bridgehead (Including Newport-on-Tay, Guardbridge, Leuchars and Kirkton)
- West Fife and coastal villages (e.g. Culross, Kincardine, Saline and Oakley)



# Coast to Ocean: A Fife-Eye View

Have you or any members of your immediate family ever studied or worked in the environment sector? (Please tick one.)

- Yes
  No
  Prefer not to say

Where did you first hear about this survey?

- Flyer  
 Social Media  
 Email  
 Newsletter  
 Word of mouth  
 Project Website  
 Other

If other, please specify:

\_\_\_\_\_

## Prize draw Opt-in

If you wish to be entered into the prize draw for one of two £50 vouchers, please provide your name and contact email or phone number in the boxes provided.

Contact details:

Name: \_\_\_\_\_

Contact email: \_\_\_\_\_

OR Phone number: \_\_\_\_\_

Please circle your voucher preference:

Ticketmaster Gift Card	Topping & Company Book Voucher	LOVE2SHOP Voucher
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We thank you for your time spent taking this survey.  
Your input is much appreciated.

