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Ocean Literacy in Scotland: Headline Findings Report

AGRICULTURE, ENVIRONMENT AND MARINE

social research

Ocean Literacy in Scotland: Headline Findings Report

Research Report by BMG Research

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Executive summary

This report presents the headline findings from an online survey with the public in Scotland on the topic of Ocean Literacy. It is part of a wider project covering England and Wales and follows up on research undertaken in 2021 (although Scotland not part of the 2021 survey)[1]. The survey was commissioned as part of the *Understanding Ocean Literacy and Ocean Climate-related Behaviour Change in the UK* project, commissioned by Defra in collaboration with Marine Scotland, Natural Resources Wales and the Ocean Conservation Trust. The primary focus of this survey is to better understand the extent and current levels of Ocean Literacy among the public across England, Wales and Scotland.

It is becoming increasingly clear that enhancing Ocean Literacy across society will be crucial to achieving the behaviour change needed to address the challenges facing our coasts and seas and manage them sustainably. This is recognised in a variety of policy instruments both nationally and internationally (for example the UN Sustainable Development Goals). There is, however, a lack of data on Ocean Literacy collected at the UK and the national level. Gathering this data is crucial if Ocean Literacy is to be used effectively as a policy mechanism and for future policy development. This survey was developed to begin to fill this knowledge and evidence gap.

The survey uses the IOC-UNESCO definition of 'Ocean Literacy' – 'an understanding of the ocean's influence on a person and their influence on the ocean'. Using this definition, the survey explores a range of Ocean Literacy dimensions, reflecting the growing understanding of what this concept means. Where once Ocean Literacy focused only on knowledge, it now encompasses a wider range of dimensions:

- Awareness
- Attitudes
- Activism
- Behaviours
- Communication
- Emotional connection and
- Access, experience, and proximity with the marine environment.

The survey provides robust information on the extent to which the public understands and are aware of the benefits they receive from the marine environment. It also identifies pro-environmental behaviours among the public in relation to the marine environment, for example, switching to energy from marine

[1] At the time of writing Northern Ireland's Department of Agriculture, Environment and Rural Affairs is also participating in the survey for the first time in 2022 and the Northern Ireland headline report will be published at a later date.

renewable sources, buying more locally produced seafood products and using more public transport. Questions in the survey go on to measure the extent of the public's attitudes towards protecting the marine environment, including intentions for change. Information is also gathered on the level and type of engagement with the marine environment, including visits and activities undertaken in the last 12 months, and identifies the barriers and drivers that shape participation. Finally, it provides information on the impact of visits to the marine environment on wellbeing. The survey for 2022 also contained questions which cover awareness of blue carbon habitats and the perceived benefits of these marine habitats.

The key findings from the survey are that:

- Respondents in Scotland value the marine environment, particularly appreciating the physical and mental health benefits it gave them (83% report that visits to the marine environment are good for their mental health and 80% report that visits are good for their physical health).
- The overriding emotional response to the marine environment is concern (51%) followed by awe/wonder (41%). Most (85%) felt that it is important to protect the marine environment.
- Marine litter / plastic pollution is perceived to be the pressure posing the biggest threat to Scotland's' marine environment (72% feel it to be the biggest threat facing the marine environment).
- A large proportion of Scotland's respondents indicate a willingness to make lifestyle changes (79% have, or intend to make lifestyle changes), and these individual actions appeared to be the main way in which people take action to protect the marine environment. Other actions, such as contacting elected representatives and volunteering do not appear to be as well taken up. Of those who have not changed their lifestyle within the last 12 months, the main reason given is that they already feel they do as much as they can (38%).
- Knowledge gaps exist for several marine terms; for example, eutrophication, UN Decade of Ocean Science, blue carbon, natural capital, marine citizenship, carbon sequestration, and Ocean Literacy are not well understood. (Over 50% of respondents had never heard of each of these terms).
- People mostly get their information about the marine environment from the news (45%) and television or radio (44%).
- The most popular destinations for visitors were coastal towns (93% of respondents report visiting this destination over the last 12 months) and sandy beaches (92% of respondents report visiting this destination over the last 12 months).
- Walking is the most popular activity undertaken at the coast (61% of respondents enjoy walking without a dog, and 36% with a dog).

Figure 1 overleaf summarises the key findings from the survey.

Figure 1: Summary of key findings (weighted %)

Awareness	11% believe health of the global marine environment is very good/good 27% believe health of the marine environment around Scotland is very good/good 28% with very good/good awareness of global challenges
Knowledge	Marine terms with highest understanding: • 92% climate change • 82% sustainable fishing • 69% Marine Protected Areas • 67% biodiversity • 66% sustainable development
Attitudes	Top 3 benefits from marine environment: • 47% diverse plant and animal habitats • 43% food • 38% renewable energy Top 3 benefits of salt marshes and seagrass meadows: • Diverse habitats for wildlife (51% and 50%) • Natural forms of coastal protection (40% and 38%) • Pollution control and water purification (35% and 38%) Most important habitat for carbon capture was tropical rainforest (61%) 3 highest threats to the marine environment: • 72% marine litter and plastic pollution • 55% chemical pollution • 51% over fishing 85% protecting marine environment very important/ important 50% human activity contributes to climate change 85% supported the creation of Marine Protected Areas
Communication	Sources of knowledge about the marine environment: • 45% news • 44% television/radio • 36% documentaries • 28% social media
Behaviour	Top 3 pro-climate behaviours: 81% recycling 72% reduced use of single use plastic 66% reuse plastic 79% have or plan on making lifestyle changes Reasons for change: • 67% concern about climate • 63% desire to be greener 50% believe lifestyle has impact

Activism	Top pro-marine acts: • 35% lifestyle changes • 23% petitions
Personal or emotional connection	Top emotional terms: • 51% concern • 41% awe/wonder • 29% curiosity • 25% calm/relaxed
Access, experience & proximity	10% never visited the marine environment Top activities: • 61% walking • 36% dog walking • 30% photography/videography at coast/sea Outcomes of visits: • 83% mental health • 80% physical health • 55% time with others

Introduction

The headline report

This report presents the headline findings from an online survey with the public in Scotland on Ocean Literacy. It is part of a wider project covering England and Wales and follows up on research undertaken in 2021 (although Scotland was not part of the 2021 survey). The survey was commissioned by Defra in collaboration with Marine Scotland, Natural Resources Wales and the Ocean Conservation Trust as part of the project *Understanding Ocean Literacy and Ocean Climate-related Behaviour Change in the UK*[2].

Across Scotland, 3,055 people over the age of 16 participated in an online survey. Fieldwork was conducted between 7 March and 3 April 2022. Respondents were selected using BMG's online panel blend approach which involves inviting participation across multiple panels and applying quotas to ensure that the sample is representative of the wider population. See Annex 1 and the Technical Report which accompanies this report for more details on sampling.

Background

The main aim of the survey is to better understand the extent and current level of Ocean Literacy in the England, Wales and Scotland.

The survey uses the IOC-UNESCO definition of 'Ocean Literacy' – 'an understanding of the ocean's influence on a person and their influence on the ocean'.

Using this definition, the survey explores different dimensions of 'Ocean Literacy', including information on public awareness, knowledge, attitudes, communication, activism and behaviours related to the marine environment.

The survey also explores barriers to promoting Ocean Literacy in the population.

Survey scope

This survey builds on earlier research undertaken in 2021 in England and Wales, and provides contextual information needed to understand behaviour change related to climate change and the attainment of Good Environmental Status (GES) in the UK marine environment.

The objectives of the survey are to:

[2] At the time of writing Northern Ireland's Department of Agriculture, Environment and Rural Affairs is also participating in the survey for the first time in 2022 and the Northern Ireland headline report will be published at a later date.

- Provide robust information on the extent to which the public understands and are aware of the benefits they receive from the marine environment.
- Identify pro-environmental behaviours among the public in relation to the marine environment, for example, switching to energy from marine renewable sources, buying more locally produced seafood products and using more public transport.
- Measure the extent of the public's attitudes towards protecting the marine environment, including intentions for change.
- Provide estimates of the level and type of engagement with the marine environment, including visits and activities undertaken in the last 12 months, and identify the barriers and drivers that shape participation.
- Provide information on the impact of visits to the marine environment on wellbeing.

A note on the data in this report

The findings in this report describe proportions of respondents from an overall weighted base. The weighted base is the adjusted sample size within each sub-group after weighting procedures have been applied to reflect the relative proportions of the population based on key socio-demographic and geographic information. This is applied to the overall unweighted base of 3,055 respondents, which is the total number of survey responses achieved.

The figures presented in the report have been rounded to the nearest whole percentage. In some instances, where percentages have been summed, this is done to a number of decimal places, which means that figures may appear to be ±1% up or down from the percentages when summed to zero decimal places.

Further details about the methodology used in the survey, including sample design, weighting and demographic information are outlined in the technical report.

Further publications related to this survey:

- Headline report for England
- Headline reports for Wales in English and Welsh
- A technical report containing details of the survey methodology
- Data tables in excel providing more detailed survey results (forthcoming)
- *'Understanding Ocean Literacy and ocean climate-related behaviour change in the UK – An Evidence Synthesis'*. Report produced for Ocean Conservation Trust and Defra.

Dimensions of Ocean Literacy

Brennan et al. (2019) defined Ocean Literacy as having six dimensions: awareness, knowledge, attitudes, communication, behaviour and activism.

However, there are a number of other models and concepts relating to Ocean Literacy (e.g. marine citizenship), and, as such, the definition of Ocean Literacy continues to evolve. In addition to the six dimensions listed above, this report includes two additional dimensions: personal or emotional connection and access experience & proximity.

Further detail on these dimensions and the supporting evidence for them can be found in the 2020 report *'Understanding Ocean Literacy and ocean climate-related behaviour change in the UK – An Evidence Synthesis'*, prepared for Defra and the Ocean Conservation Trust.

The full list of Ocean Literacy dimensions included in this report are:

- Awareness
- Knowledge
- Attitudes
- Communication
- Behaviour
- Activism
- Personal or emotional connection
- Access, experience, and proximity

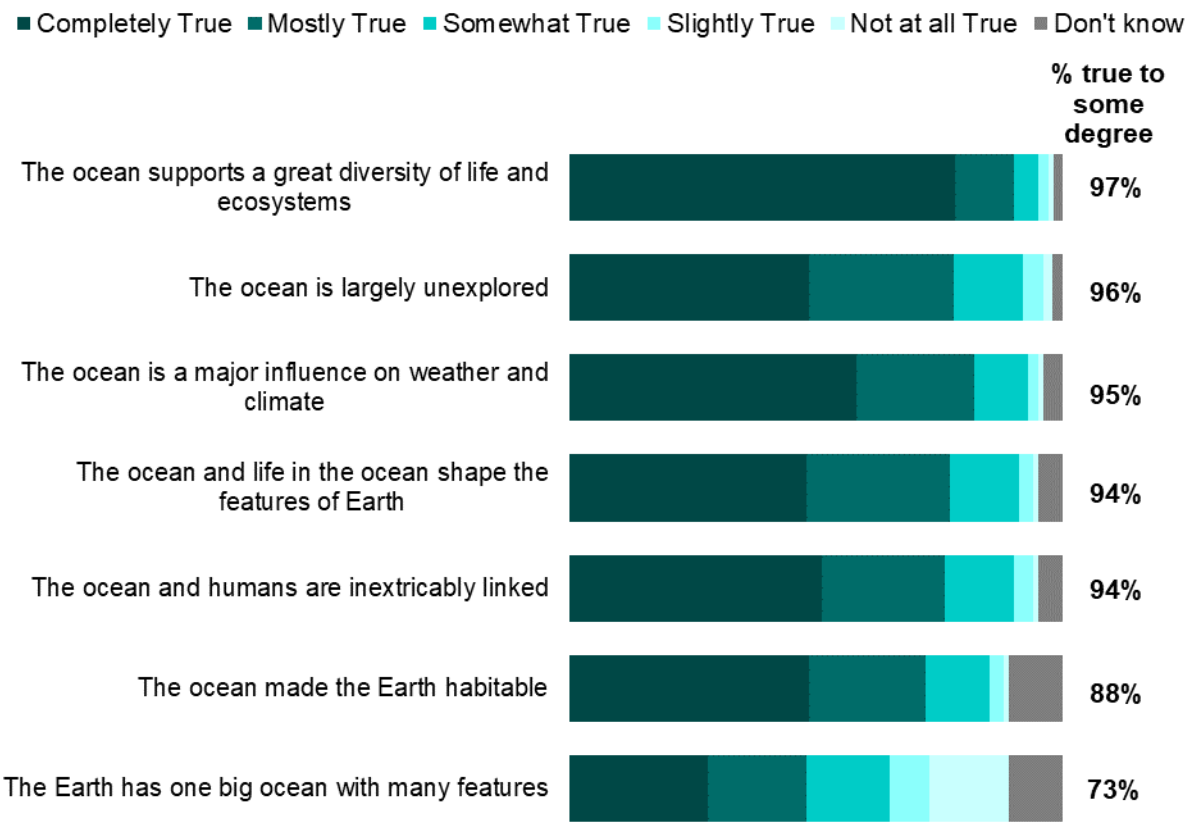
Throughout this report, bullet points at the end of each section make clear which dimension of Ocean Literacy the findings presented relate to.

Principles of Ocean Literacy

Although there are questions regarding an agreed definition of Ocean Literacy, seven principles related to people's understanding of the impact on the ocean and the ocean's impact on them have underpinned Ocean Literacy initiatives in recent years. Survey respondents were asked to indicate the extent to which they believed these principles were true (Figure 2).

The vast majority believed that the principles were true to some degree, ranging from 97% who said that "The ocean supports a great diversity of life and ecosystems" was true to 88% who said that "The ocean made the Earth habitable" was true. While still a majority, respondents were least likely to believe that "The Earth has one big ocean with many features" was true (73%).

Figure 2: Extent to which Ocean Literacy principles are perceived to be true (weighted %)



Q3. The following are principles about the marine environment. Please indicate how true you believe each statement to be.
Unweighted base: 3,055

Table 1: Extent to which Ocean Literacy principles are perceived to be true (weighted %)

Principle	Completely True	Mostly True	Somewhat True	Slightly True	Not at all True	Don't know	Summary: True (to some level)
The ocean supports a great diversity of life and ecosystems	79%	12%	5%	2%	1%	2%	97%
The ocean is largely unexplored	48%	29%	14%	4%	2%	2%	96%
The ocean is a major influence on weather and climate	58%	24%	11%	2%	1%	4%	95%
The ocean and life in the ocean shape the features of Earth	48%	29%	14%	3%	1%	5%	94%
The ocean and humans are inextricably linked	51%	25%	14%	4%	1%	5%	94%
The ocean made the Earth habitable	49%	24%	13%	3%	1%	11%	88%
The Earth has one big ocean with many features	28%	20%	17%	8%	16%	11%	73%

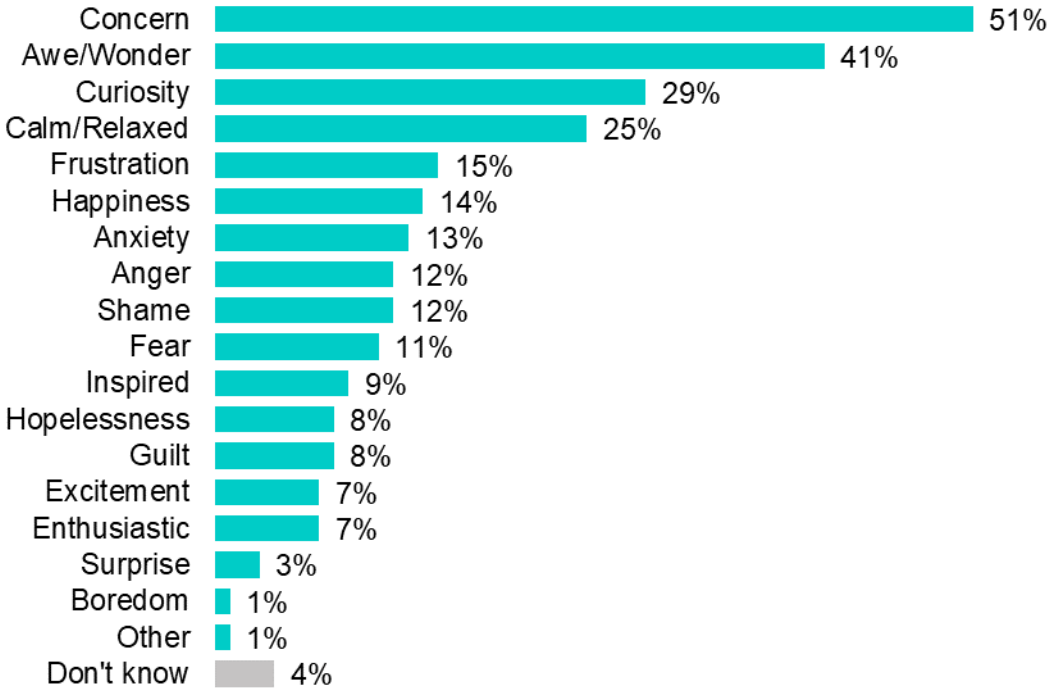
Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

Emotional responses to the marine environment

Concern (51%) was the most commonly reported feeling when asked to think about the marine environment, followed by awe/wonder (41%). Curiosity (29%) and calm/relaxed (25%) were also frequently reported feelings. Few respondents associated marine environments with boredom (1%) or surprise (3%) (Figure 3).

Figure 3: Emotional responses to the marine environment (weighted %)



Q2: How do you feel when you think about the marine environment? Please select the three emotions which come closest to how you feel.
Unweighted base: 3,055

Dimensions:

- Personal or emotional connection

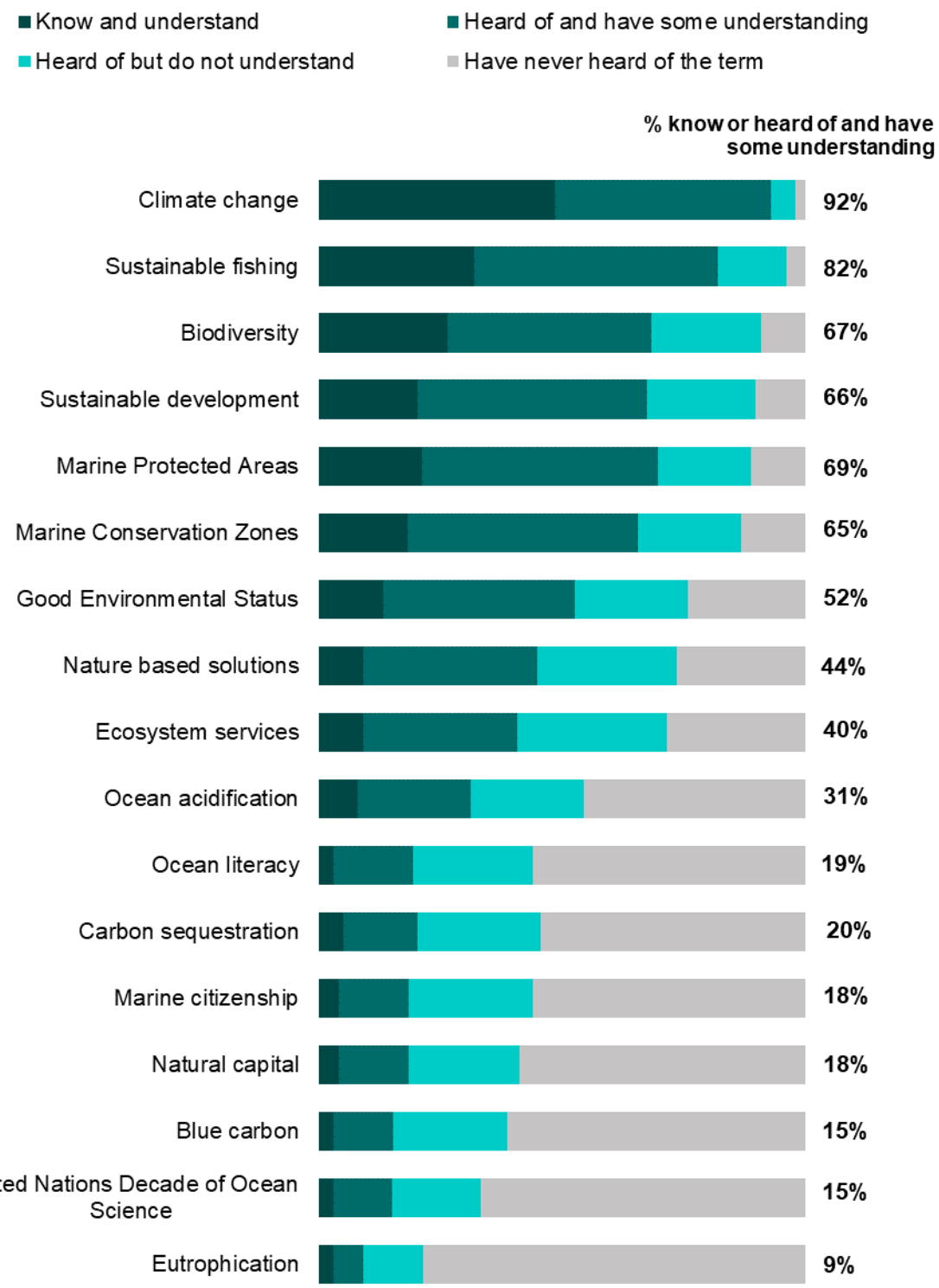
Knowledge of marine terms

Climate change (92%) and sustainable fishing (82%) were the terms most commonly known and understood (to at least some degree) (Figure 4).

Other familiar terms were Marine Protected Areas (69%), biodiversity (67%), sustainable development (66%) and Marine Conservation Zones (65%).

In contrast three quarters said they had never heard of eutrophication (77%). Other terms which the majority had never heard of were the United Nations Decade of Ocean Science (66%), blue carbon (60%), natural capital (57%), marine citizenship (55%), Ocean Literacy (55%) and carbon sequestration (54%).

Figure 4: Knowledge and understanding of marine terms (weighted %)



Q7. Please indicate how familiar you are with each of these terms by selecting the relevant box.
Unweighted base: 3,055

Table 2: Knowledge and understanding of marine terms (weighted %)

Marine Term	Know and understand	Heard of and have some understanding	Heard of but do not understand	Have never heard of the term	Summary: % know or heard of and have some understanding
Climate change	48%	44%	5%	2%	92%
Sustainable fishing	32%	50%	14%	4%	82%
Biodiversity	26%	41%	22%	9%	67%
Sustainable development	20%	46%	22%	10%	66%
Marine Protected Areas	21%	48%	19%	11%	69%
Marine Conservation Zones	18%	47%	21%	13%	65%
Good Environmental Status	13%	39%	23%	24%	52%
Nature based solutions	9%	35%	28%	26%	44%
Ecosystem services	9%	31%	30%	28%	40%
Ocean acidification	8%	23%	23%	45%	31%
Ocean literacy	3%	16%	24%	55%	19%
Carbon sequestration	5%	15%	25%	54%	20%
Marine citizenship	4%	14%	25%	55%	18%
Natural capital	4%	14%	22%	57%	18%
Blue carbon	3%	12%	23%	60%	15%
United Nations Decade of Ocean Science	3%	12%	18%	66%	15%
Eutrophication	3%	6%	12%	77%	9%

Dimensions:

- Knowledge
- Awareness

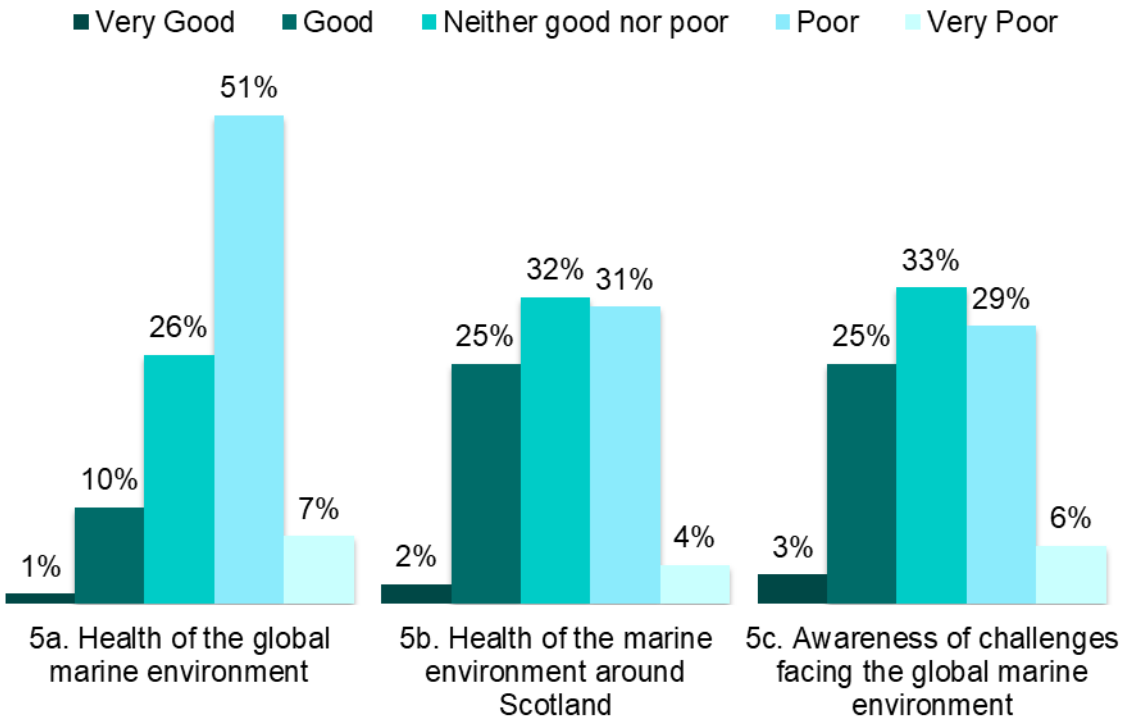
Perceptions of marine health and challenges

Fifty-nine percent rated the health of the global marine environment as poor or very poor, while 11% rated it as good or very good (Figure 5a).

A lower proportion rated the health of Scotland's marine environment as poor or very poor (35%) compared to the global marine environment, and 27% rated it as good or very good (Figure 5b), a higher proportion than the global rating.

While 35% considered their awareness of the challenges facing the global marine environment to be poor or very poor, 28% rated their awareness as good or very good (28%) (Figure 5c).

Figure 5: Perceptions on the health of and awareness of challenges facing the marine environment (weighted %)



Q4. How would you rate the health of the global marine environment?
Q5. How would you rate the health of the marine environment around Scotland?
Q6. How would you rate your awareness of challenges facing the global marine environment?
Unweighted base: 3,05

Dimensions:

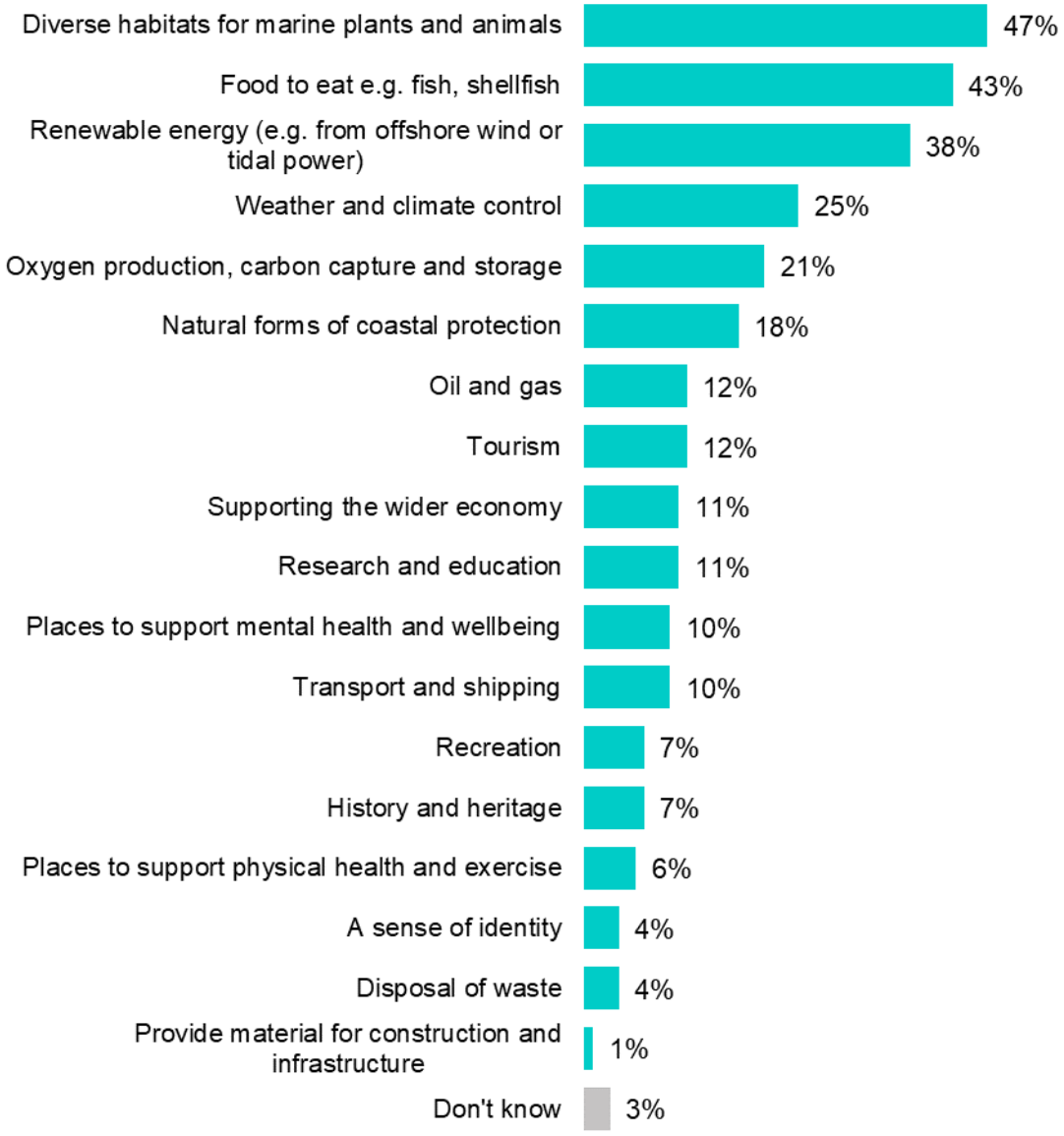
- Knowledge
- Awareness

Benefits of the marine environment

When asked what they thought the three most important benefits are of the marine environment in Scotland (Figure 6), the top response was diverse habitats for marine plants and animals (47%) followed by food to eat (43%), renewable energy (38%) and weather and climate control (25%).

In contrast, very few people felt that providing material for construction and infrastructure (1%), disposal of waste (4%) and a sense of identity (4%) were important benefits.

Figure 6: Most important benefits of the marine environment (weighted %)



Q9: In your opinion, what are the three most important benefits that society gains from the marine environment in Scotland?
Unweighted base: 3,055

Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

Salt marshes and seagrass meadows

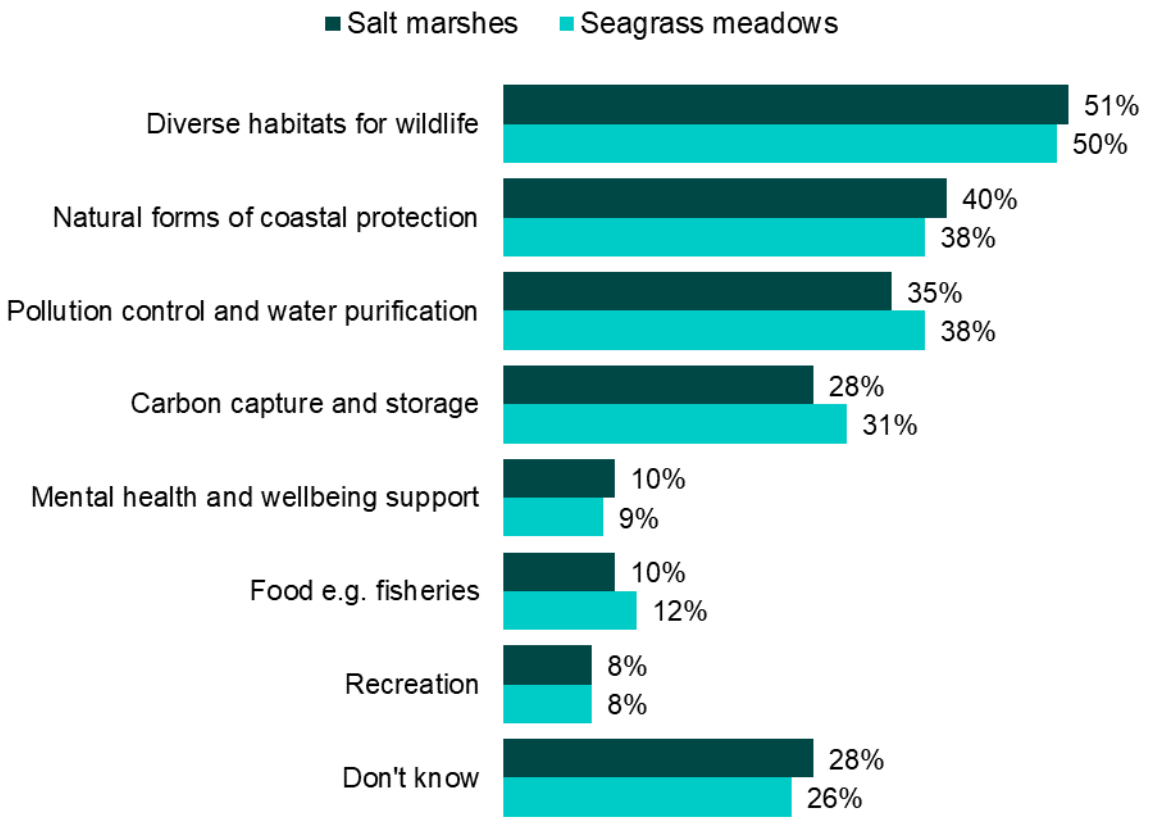
Potential benefits of salt marshes and seagrass meadows

For both salt marshes and seagrass meadows the most important benefits that came through were diverse habitats for wildlife (51% for salt marshes and 50% for seagrass meadows), natural forms of coastal protection (40% for salt marshes and 38% for seagrass meadows) and pollution control and water purification (35% for salt marshes and 38% for seagrass meadows).

The least important benefit identified by respondents for salt marshes and seagrass meadows was recreation (both 8%).

In both instances, over a quarter indicated that they did not know what the benefits from these ecosystems were (Figure 7).

Figure 7: Potential benefits of salt marshes and seagrass meadows (weighted %)



NQ5. The following are a range of POTENTIAL BENEFITS of salt marshes and seagrass meadows. In your opinion for each habitat, which three do you think are the most important?
Unweighted base: 3,055

Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

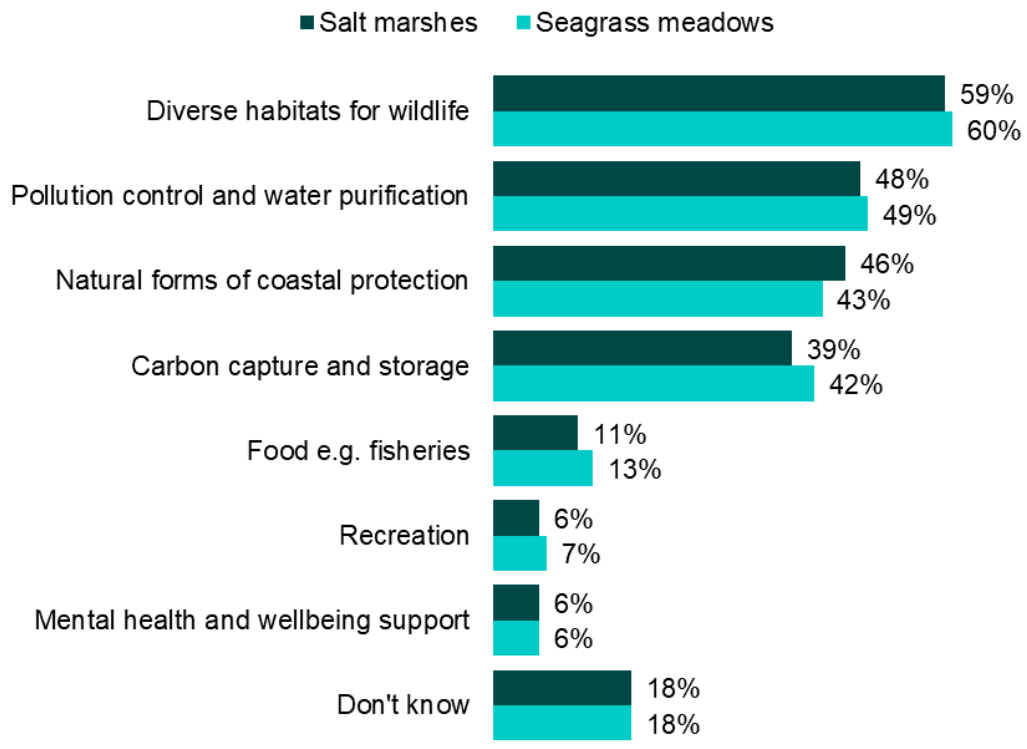
Restoring salt marshes and seagrass meadows

Fourteen percent of respondents said they were aware of efforts to restore salt marshes, and 11% said they were aware of efforts to restore seagrass meadows.

Respondents were then presented with a range of reasons for restoring salt marshes and seagrass meadows and were asked which three were most important (Figure 8).

Again, the pattern of response was very similar for both salt marshes and seagrass meadows, with diverse habitats for wildlife regarded as the most important (59% for salt marshes and 60% for seagrass meadows), followed by pollution control and water purification (48% for salt marshes and 49% for seagrass meadows), natural forms of coastal protection (46% for salt marshes and 43% for seagrass meadows) and carbon capture and storage (39% for salt marshes and 42% for seagrass meadows).

Figure 8: Reasons for restoring salt marshes and seagrass meadows (weighted %)



NQ10. The following are a range of REASONS FOR RESTORING salt marshes and seagrass meadows. In your opinion for each habitat, which three do you think are the most important reasons to restore these habitats?
Unweighted base: 3,055

Dimensions:

- Attitudes
- Knowledge

- Awareness

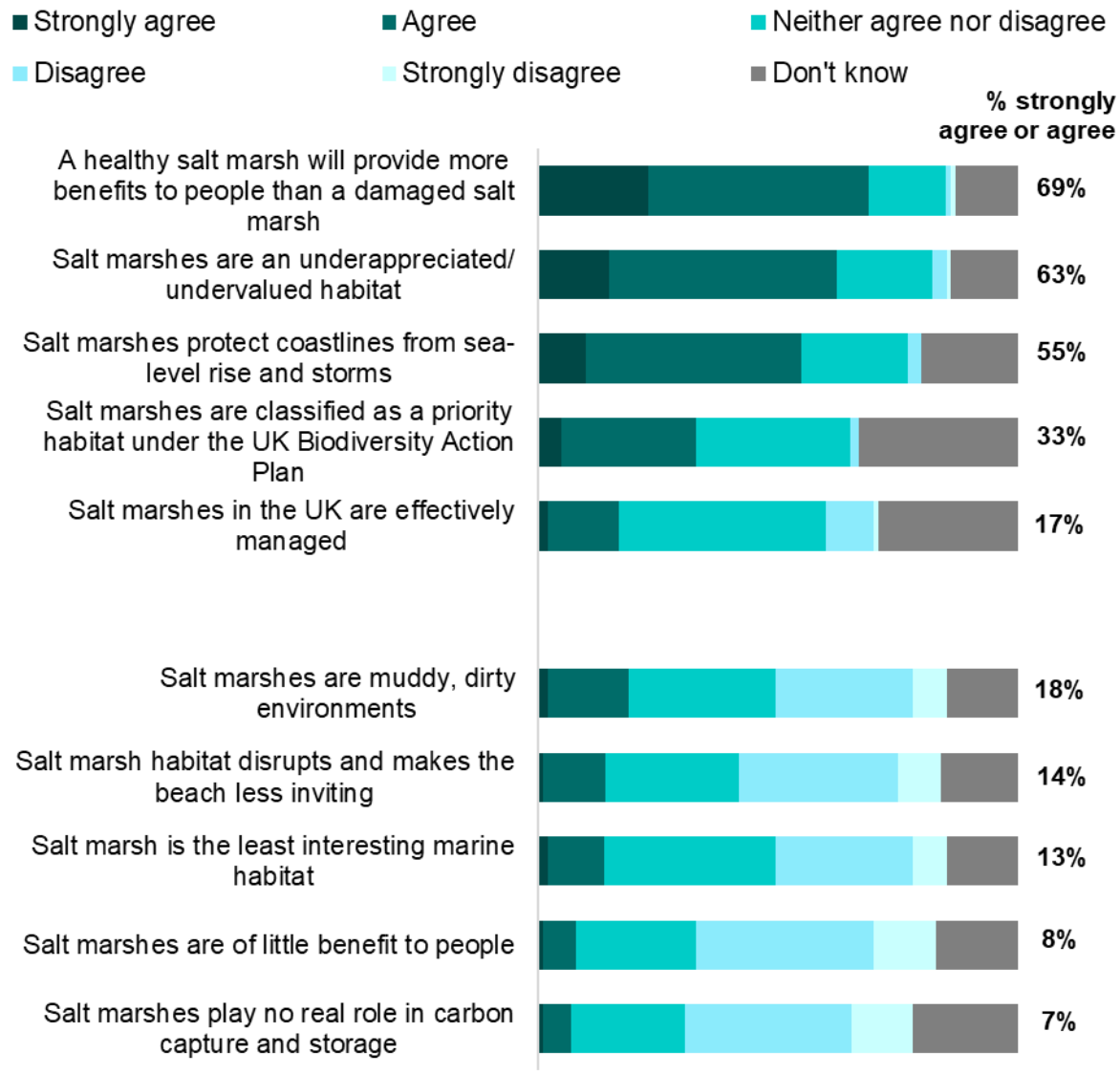
Views on salt marshes

Respondents were asked to rate their level of agreement with a range of statements relating to salt marshes (Figure 9).

Agreement was strongest that a healthy salt marsh will provide more benefits to people than a damaged salt marsh (69%), followed by agreement that salt marshes are an underappreciated habitat (63%) and that salt marshes protect coastlines from sea-level rise and storms (55%).

There were relatively high levels of ‘don’t know’ responses across the board, but particularly in relation to salt marshes being classified as a priority habitat under the UK Biodiversity Action Plan (33%) and salt marshes in the UK being effectively managed (29%).

Figure 9: Views on salt marshes (weighted %)



NQ11. The following are statements about salt marshes. For each habitat, please indicate to what extent you agree with each statement.
Unweighted base: 3,055

Table 3: Views on salt marshes (weighted %)

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Summary: Strongly Agree or Agree
A healthy salt marsh will provide more benefits to people than a damaged salt marsh	23%	46%	16%	1%	1%	13%	69%
Salt marshes are an underappreciated/ undervalued habitat	15%	48%	20%	3%	1%	14%	63%
Salt marshes protect coastlines from sea-level rise and storms	10%	45%	22%	3%	<0.5%	20%	55%
Salt marshes are classified as a priority habitat under the UK Biodiversity Action Plan	5%	28%	32%	2%	<0.5%	33%	33%
Salt marshes in the UK are effectively managed	2%	15%	43%	10%	1%	29%	17%
Salt marshes are muddy, dirty environments	2%	17%	31%	29%	7%	15%	18%
Salt marsh habitat disrupts and makes the beach less inviting	1%	13%	28%	33%	9%	16%	14%
Salt marsh is the least interesting marine habitat	2%	12%	36%	29%	7%	15%	13%
Salt marshes are of little benefit to people	1%	7%	25%	37%	13%	17%	8%
Salt marshes play no real role in carbon capture and storage	1%	6%	24%	35%	13%	22%	7%

Dimensions:

- Attitudes
- Knowledge
- Awareness

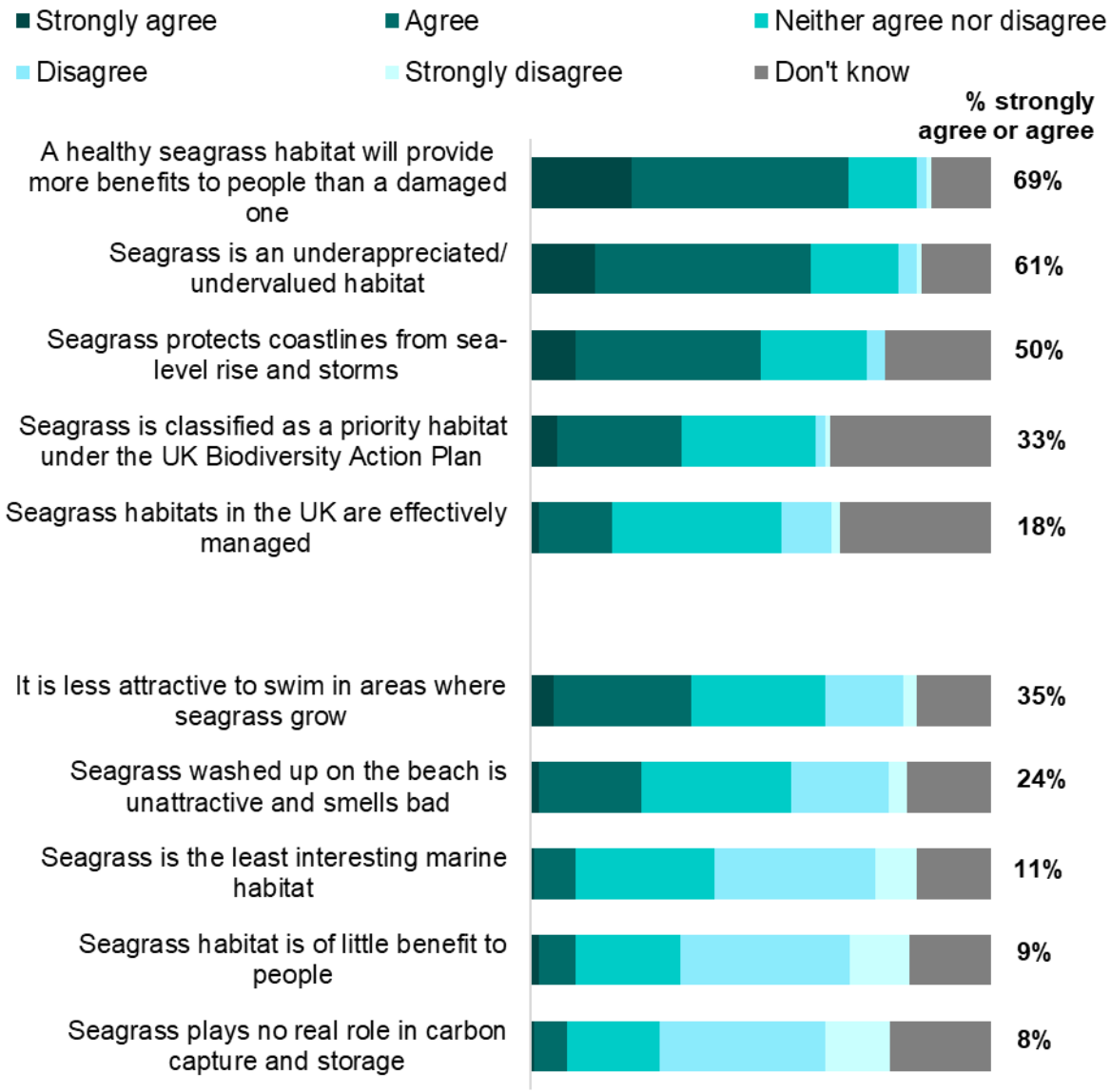
Views on seagrass meadows

Respondents were asked to rate their level of agreement with a range of statements relating to seagrass meadows (Figure 10).

As with salt marshes, agreement was strongest that a healthy seagrass habitat will provide more benefits to people than a damaged one (69%), followed by agreement that seagrass are an underappreciated habitat (61%) and that seagrass meadows protect coastlines from sea-level rise and storms (50%).

Again, there were relatively high levels of ‘don’t know’ responses across the board, but particularly in relation to seagrass meadows being classified as a priority habitat under the UK Biodiversity Action Plan (35%) and seagrass in the UK being effectively managed (33%).

Figure 10: Views on seagrass meadows (weighted %)



NQ12. The following are statements about seagrass meadows. For each habitat, please indicate to what extent you agree with each statement.
Unweighted base: 3,055

Table 4: Views on seagrass meadows (weighted %)

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Summary: Strongly Agree or Agree
A healthy seagrass habitat will provide more benefits to people than a damaged seagrass habitat	22%	47%	15%	2%	1%	13%	69%
Seagrass is an underappreciated/ undervalued habitat	14%	47%	19%	4%	1%	15%	61%
Seagrass protects coastlines from sea-level rise and storms	10%	40%	23%	4%	<0.5%	23%	50%
Seagrass is classified as a priority habitat under the UK Biodiversity Action Plan	6%	27%	29%	2%	1%	35%	33%
Seagrass habitats in the UK are effectively managed	2%	16%	37%	11%	2%	33%	18%
It is less attractive to swim in areas where seagrass grow	5%	30%	29%	17%	3%	16%	35%
Seagrass washed up on the beach is unattractive and smells bad	2%	22%	32%	21%	4%	18%	24%
Seagrass is the least interesting marine habitat	1%	9%	30%	35%	9%	16%	11%
Seagrass habitat is of little benefit to people	2%	8%	23%	37%	13%	18%	9%
Seagrass plays no real role in carbon capture and storage	1%	7%	20%	36%	14%	22%	8%

Dimensions:

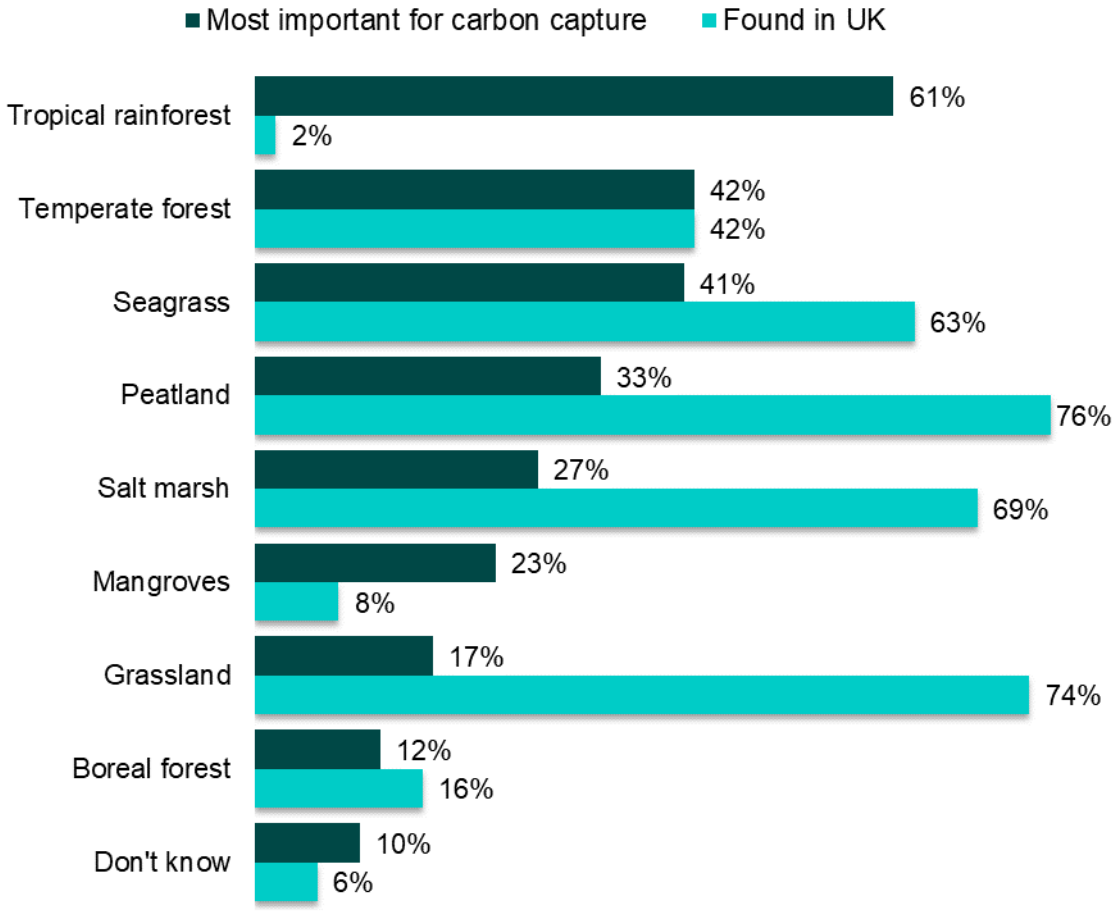
- Attitudes
- Knowledge
- Awareness

Carbon capture and storage

To assess the relative knowledge and importance of blue carbon habitats, respondents were presented with uncaptioned photographs of a range of natural habitats, and asked to decide which three are the most important in relation to carbon capture (Figure 11). Tropical rainforest was regarded as the most important (61%), followed by temperate forests (42%) and seagrass (41%).

They were also asked which habitats they believe are found in the UK, and the most commonly mentioned were peatlands (76%), grasslands (74%), salt marshes (69%) and seagrass (63%).

Figure 11: Most important habitats for carbon capture/habitats found in the UK (weighted %)



NQ6. Thinking about carbon capture and storage, in your opinion which three habitats are the most important? NQ7. Which of the following habitats do you believe are found in the UK?
Unweighted base: 3,055

Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

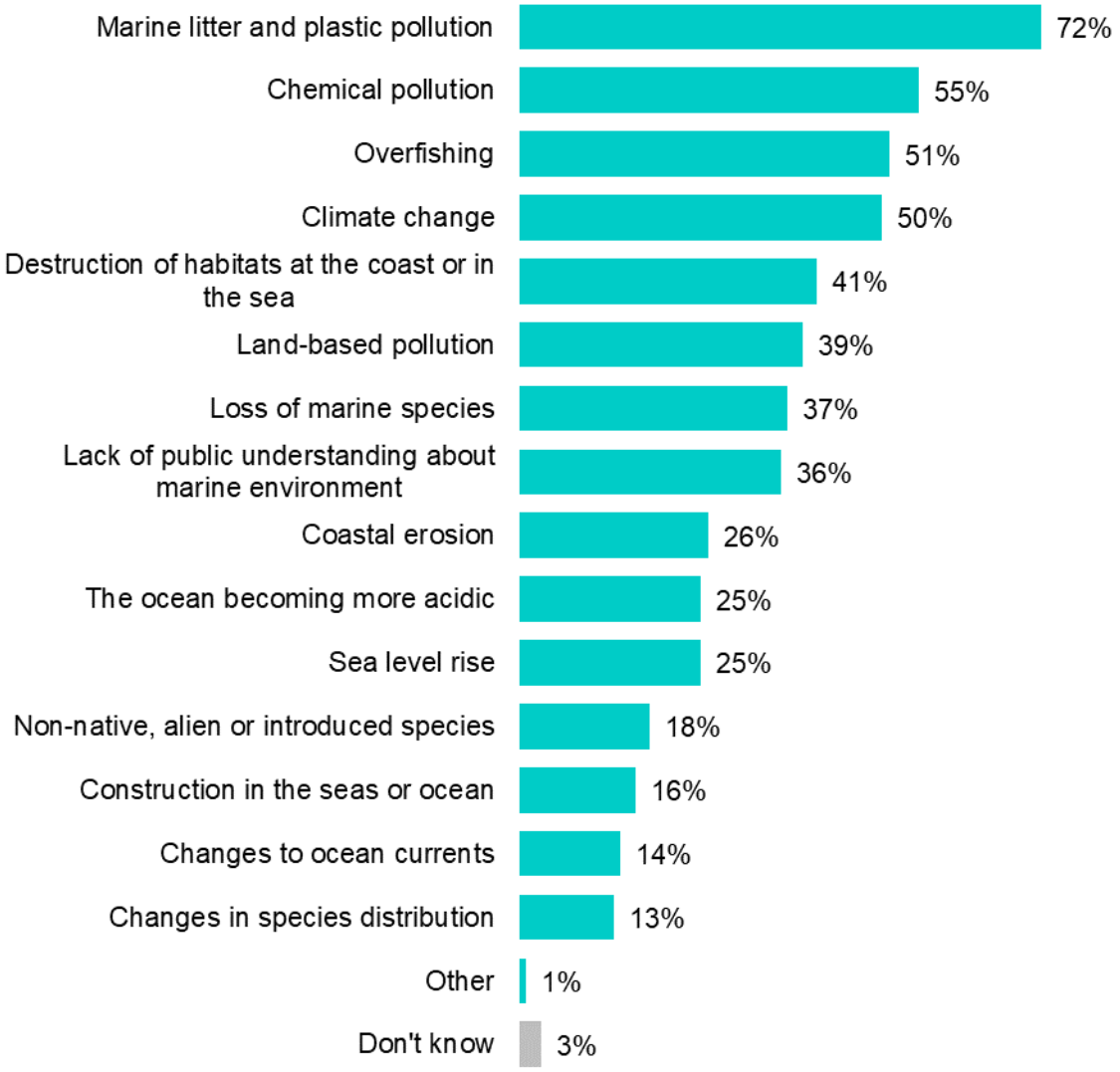
Threats to the marine environment

Respondents were asked what they thought posed the most threat to the marine environment in Scotland (Figure 12).

Marine litter and plastic pollution was the pressure most commonly chosen (72%) whilst chemical pollution (55%), overfishing (51%) and climate change (50%) also ranked highly.

Pressures which were least likely to be selected as posing a threat to the marine environment were changes in species distribution (13%), changes to ocean currents (14%) and construction in the seas or ocean (16%).

Figure 12: Pressures posing most threat to the marine environment (weighted %)



Q10. Which of the following if any, do you think pose the most threat to the marine environment in Scotland?
Unweighted base: 3,055

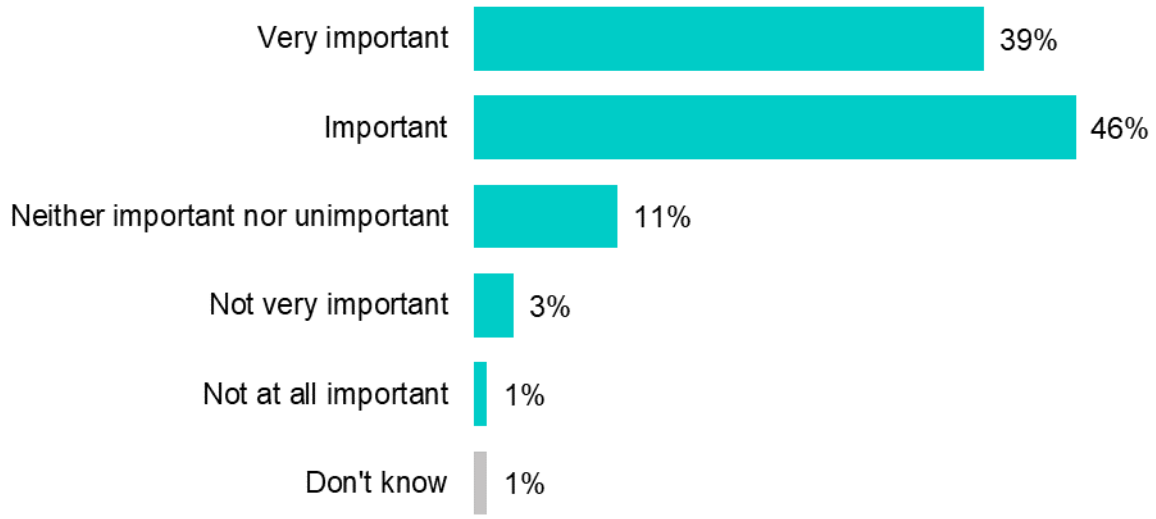
Dimensions:

- Attitudes
- Knowledge
- Awareness

Responding to threats to the marine environment

Eighty-five percent said that protecting the marine environment is very important or important to them personally. Only 4% said that it was not very/at all important (Figure 13).

Figure 13: Importance of protecting the marine environment (weighted %)



Q8: How important is protecting the marine environment to your personally?
Unweighted base: 3,055

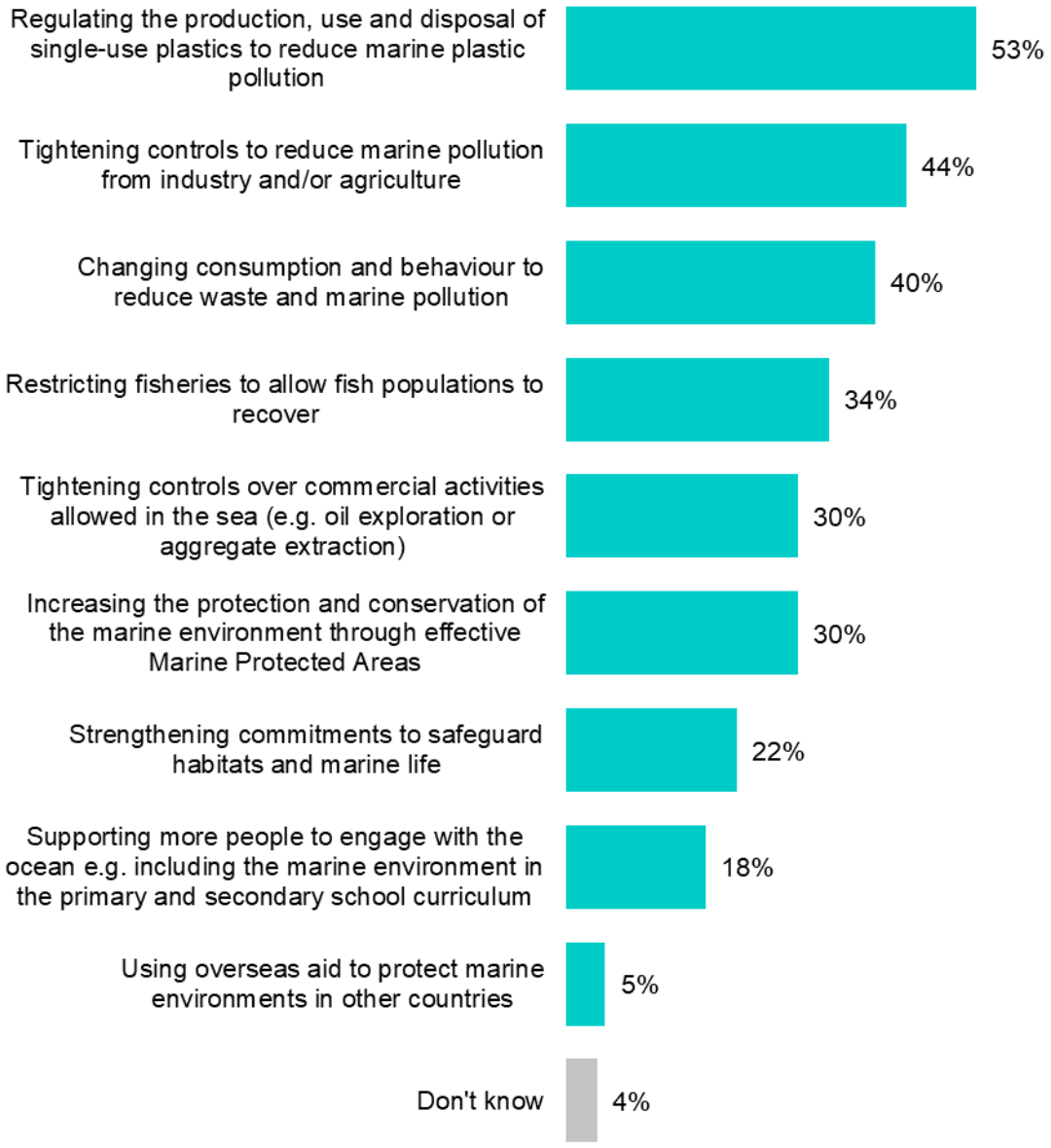
Dimensions:

- Attitudes
- Knowledge
- Awareness

A range of activities addressing other issues affecting the marine environment (i.e. non ocean climate issues) in Scotland were provided to respondents who were asked to select the three most important (Figure 14).

Regulating single-use plastics (53%) was the top choice, followed by controls on pollution from industry and/or agriculture (44%) and changing consumption and behaviour to reduce waste and marine pollution (40%). The activity least likely to be selected was using overseas development aid (5%).

Figure 14: Most important activities to address marine issues (weighted %)



Q13: The following activities all address other issues affecting the marine environment in Scotland. In your opinion, which three do you think are the most important?
Unweighted base: 3,055

Dimensions:

- Attitudes
- Knowledge
- Awareness

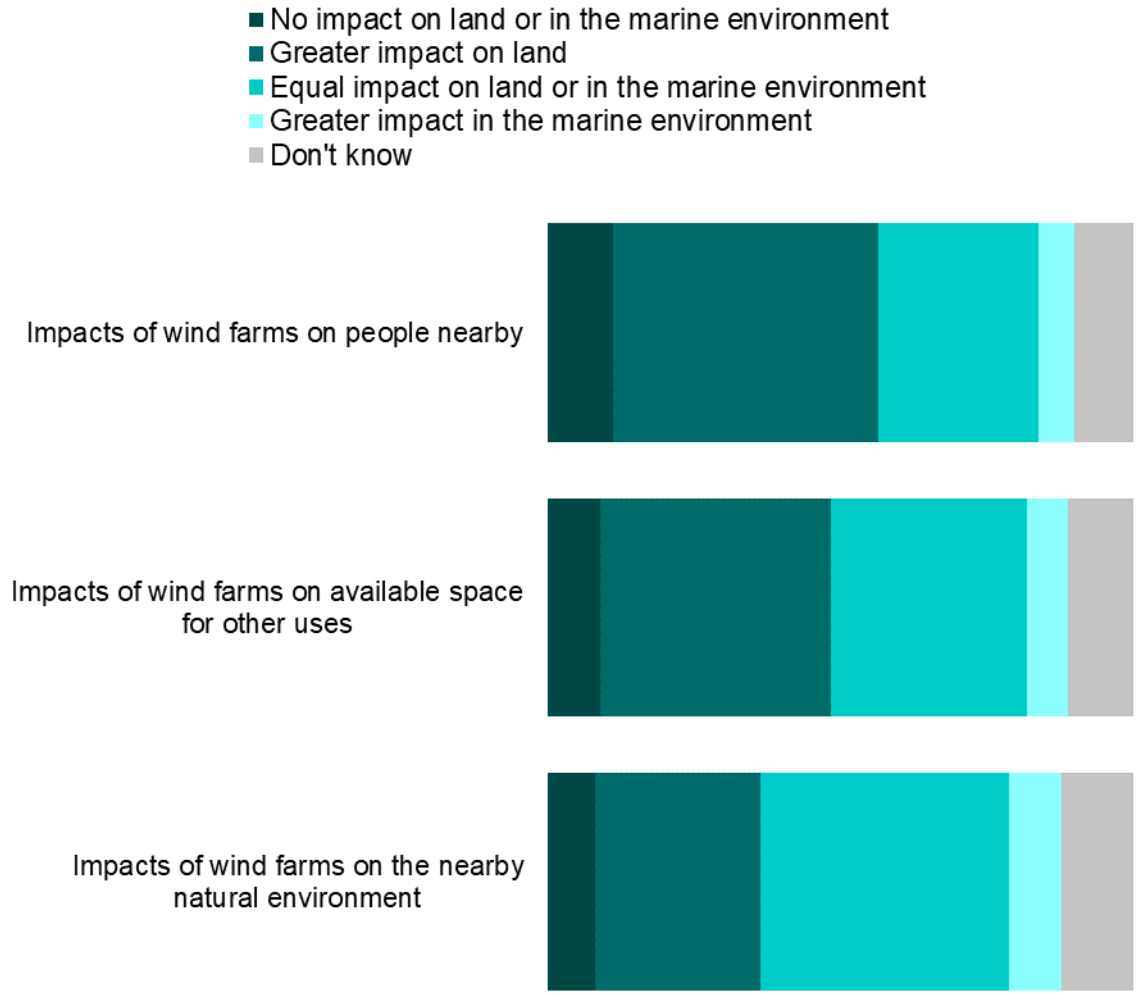
Views on wind farms

Around one in ten believed that wind farms have no impact on the land or in the marine environment in terms of people nearby (11%), the available space for other use (9%) and the nearby natural environment (8%) (Figure 15).

Forty-five percent felt there is a greater impact on land in terms of people nearby, 39% in terms of space available for other uses, and 28% in terms of the nearby natural environment.

Less than one in ten felt that wind farms have a greater impact in the marine environment in terms of people nearby (6%), the space available for other uses (7%) and the nearby natural environment (9%).

Figure 15: Views on wind farms (weighted %)



NQ4. Do you think the following impacts of windfarms (including wind turbines and power transmission cables) are greater on land or in the marine environment?
Unweighted base: 3,055

Table 5: Views on wind farms (weighted %)

Statement	No impact on land or in the marine environment	Greater impact on land	Equal impact on land or in the marine environment	Greater impact in the marine environment	Don't know
Impacts of wind farms on people nearby	11%	45%	27%	6%	10%
Impacts of wind farms on available space for other uses	9%	39%	33%	7%	11%
Impacts of wind farms on the nearby natural environment	8%	28%	42%	9%	12%

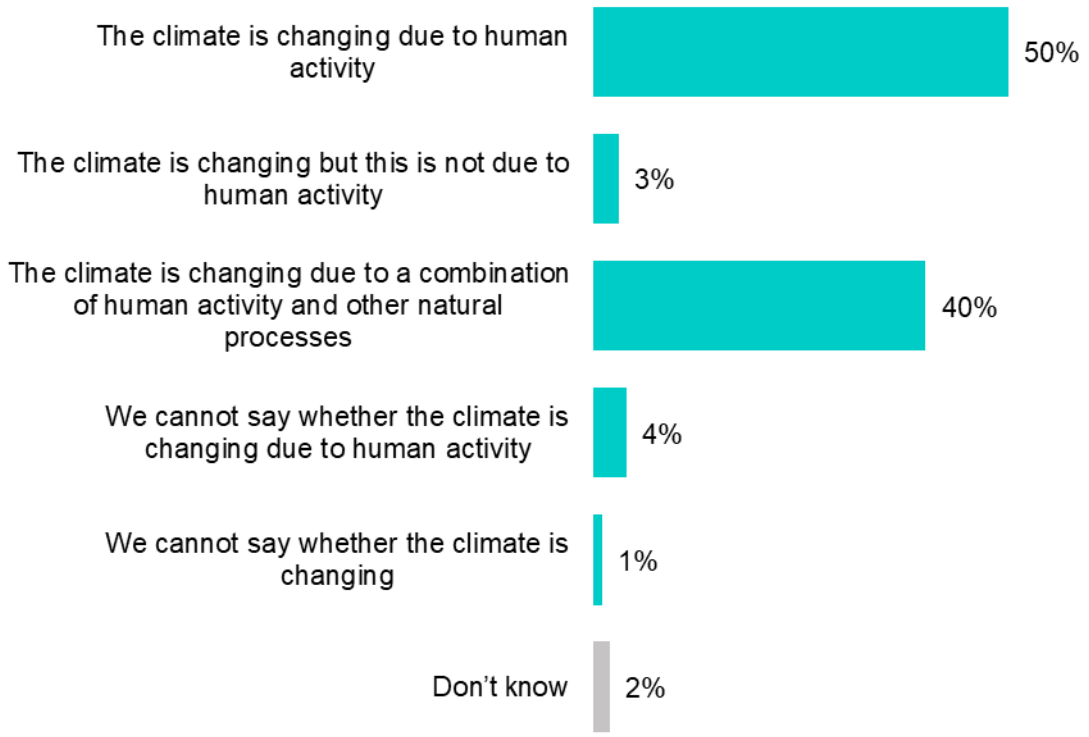
Dimensions:

- Attitudes
- Knowledge
- Awareness

Attitudes to climate change

When asked about their view on climate change, the vast majority said the climate is changing (94%). However, views were split on causes of climate change with 50% saying this is due to human activity, 40% saying it is due to a combination of human activity and natural processes, and 4% saying we cannot say whether it is due to human activity. Only 3% said climate change was not due to human activity (Figure 16).

Figure 16: Views on climate change and role of human activity (weighted %)



Q11: Thinking about the changing climate and human activity, which of the following statements come closest to your view?
Unweighted base: 3,055

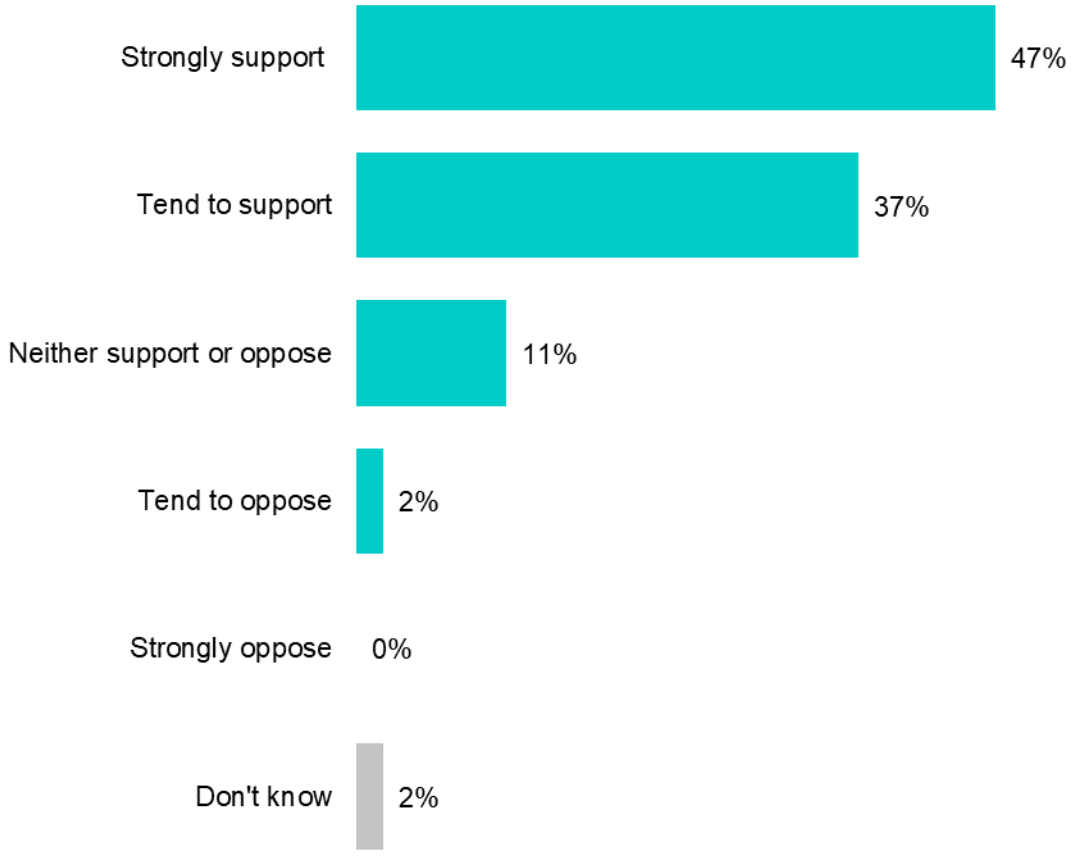
Dimensions:

- Attitudes
- Knowledge

Respondents were informed that Marine Protected Areas are specific areas of the marine environment which are managed to achieve long-term nature conservation and sustainable use, and were then asked the extent to which they support or oppose the creation of Marine Protected Areas in Scotland (Figure 17).

Eighty-five percent supported the creation of Marine Protected Areas in Scotland, including 47% who strongly supported this, and just 2% opposed it.

Figure 17: Support for Marine Protected Areas (weighted %)



NQ3. To what extent do you support or oppose the creation of Marine Protected Areas in Scotland?
Unweighted base: 3,055

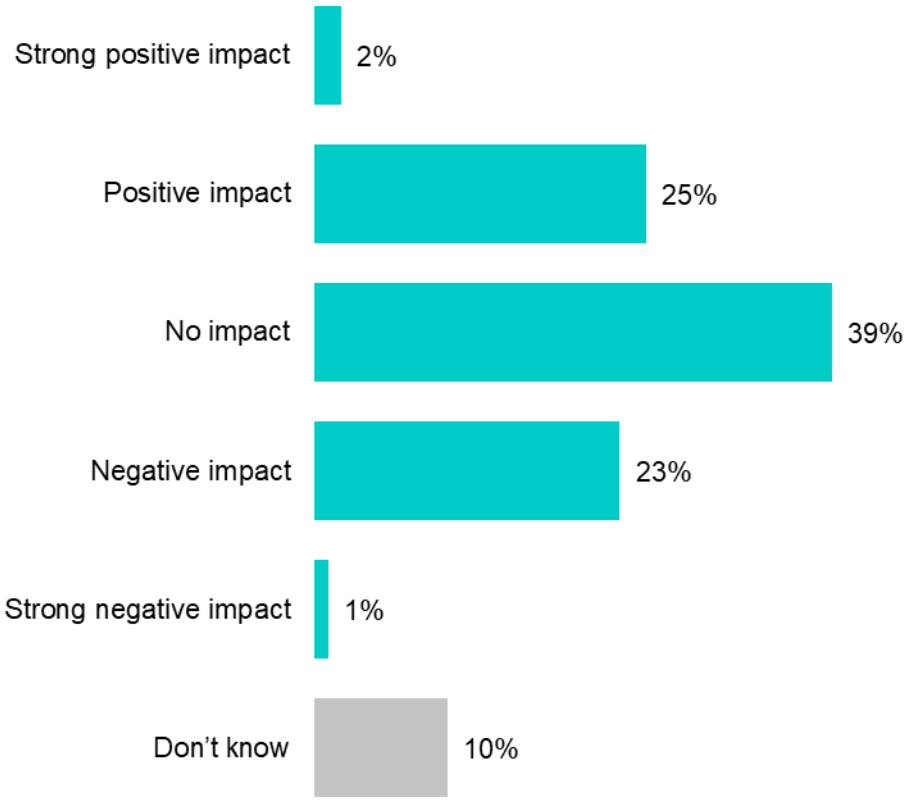
Dimensions:

- Attitudes
- Knowledge

Lifestyle impacts & changes

Overall, 50% thought their lifestyle has an impact on the marine environment. A slightly higher proportion thought that their lifestyle has a positive impact (27%) compared to a negative impact (23%) (Figure 18).

Figure 18: Perceived impact of lifestyle on the marine environment (weighted %)



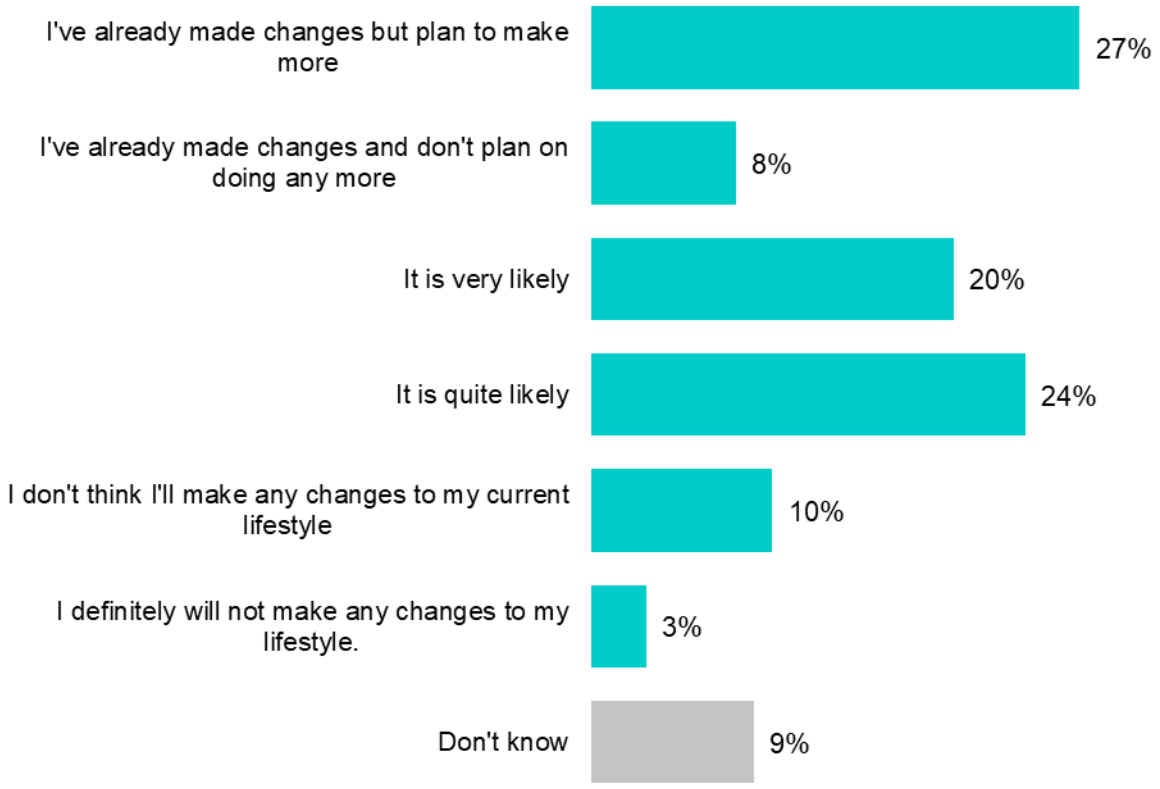
Q17. What impact do you think your lifestyle has on the marine environment of Scotland?
Unweighted base: 3,055

Dimensions:

- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

Twenty-seven percent said they've already made changes but plan on doing more, whilst 44% said it's quite or very likely they will make changes. 8% said they've already made changes but don't plan on doing any more. Only 13% said they won't or don't think they will make changes to their current lifestyle within the next 12 months in order to protect the marine environment in Scotland (Figure 19).

Figure 19: Planned lifestyle changes to protect the marine environment (weighted %)



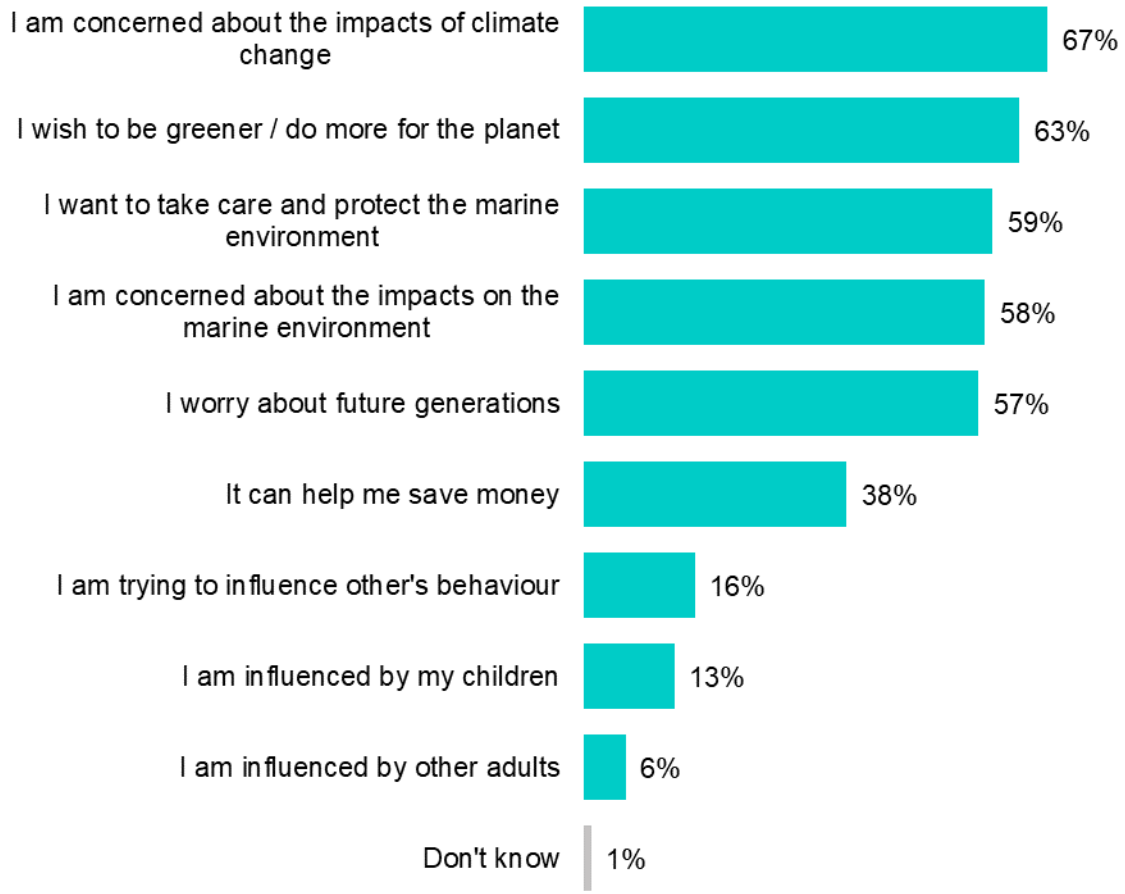
Q22. Within the next 12 months, do you plan on making changes to your lifestyle to protect the marine environment in Scotland?
Unweighted base: 3,055

Dimensions:

- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

The top reasons for making or planning lifestyle changes (Figure 20) were concern over climate change (67%), desire to be greener (63%), desire to care and protect (59%), concerns about impacts on the marine environment (58%) and worry about future generations (57%).

Figure 20: Reasons for making or planning to make changes to lifestyle (weighted %)



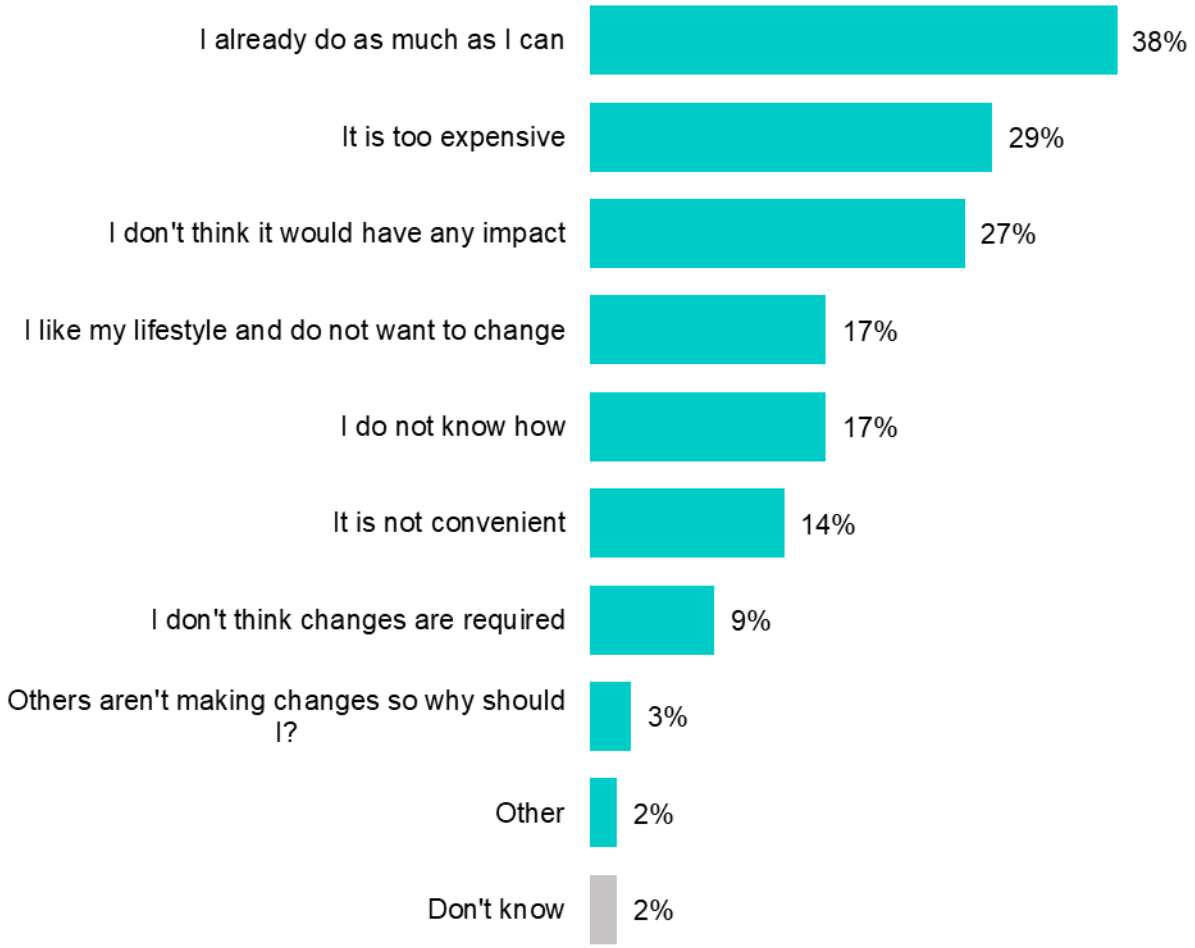
Q24. [Where likely to make changes to lifestyle to protect the marine environment] Is this because?
Unweighted base: where have made or plan to make changes: 2,426

Dimensions:

- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

In contrast, the top reason for not making lifestyle changes (Figure 21) was already doing as much as possible (38%) followed by it being too expensive (29%) and thinking it would not have an impact (27%).

Figure 21: Reasons for <u>not</u> changing lifestyle in last 12 months (weighted %)



Q23: [Where unlikely to make changes to lifestyle to protect the marine environment] Is this because?
Unweighted base: where do not plan to make changes: 378

Dimensions:

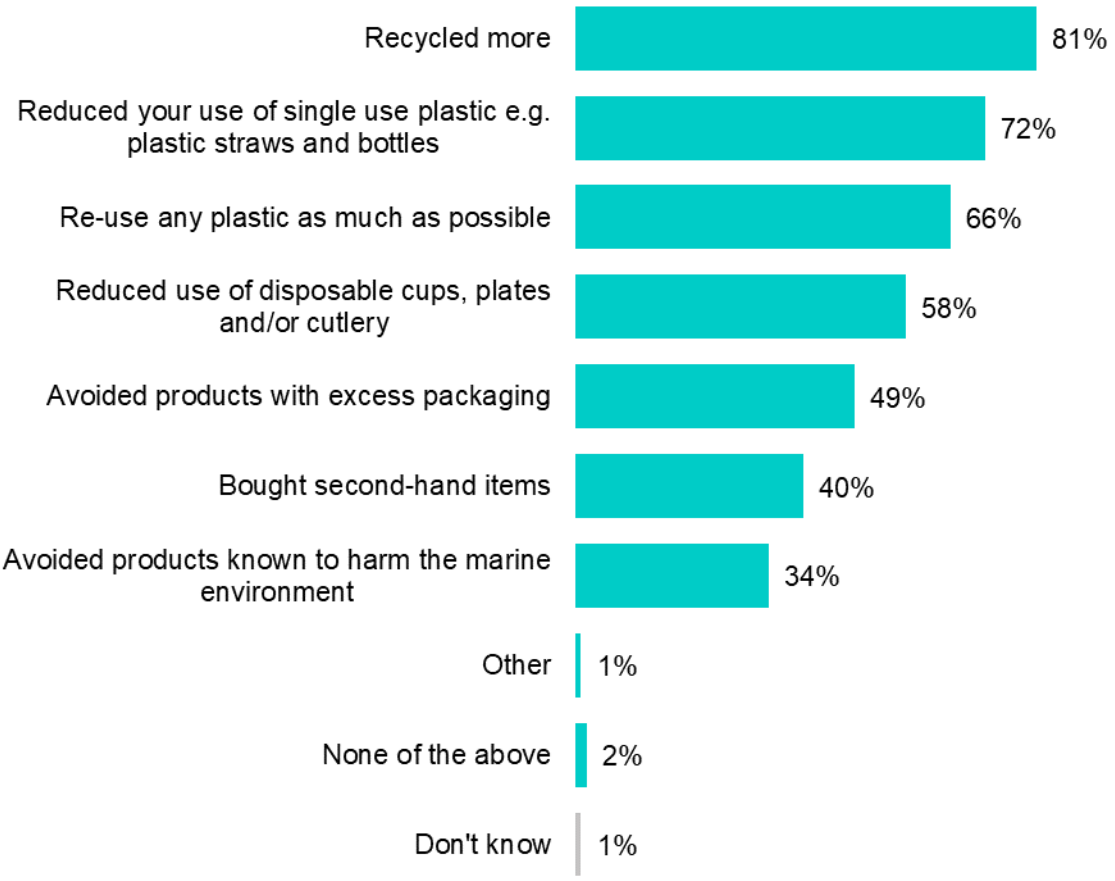
- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

Purchasing and packaging actions

The most common activity undertaken in relation to purchases and packaging in the last 12 months was recycling more (81%) (Figure 22). A high proportion also said they had reduced single use plastics (72%) and had re-used plastic as much as possible (66%).

The least common activities were avoiding products known to harm the marine environment (34%) and buying second-hand items (40%) although these were still undertaken by more than a third of respondents.

Figure 22: Activities done in the last 12 months in relation to purchases and use of packaging (weighted %)



Q18. Thinking about the purchases you have made and your use of packaging, which of the following activities have you done in the last 12 months where possible?
Unweighted base: 3,055

Dimensions:

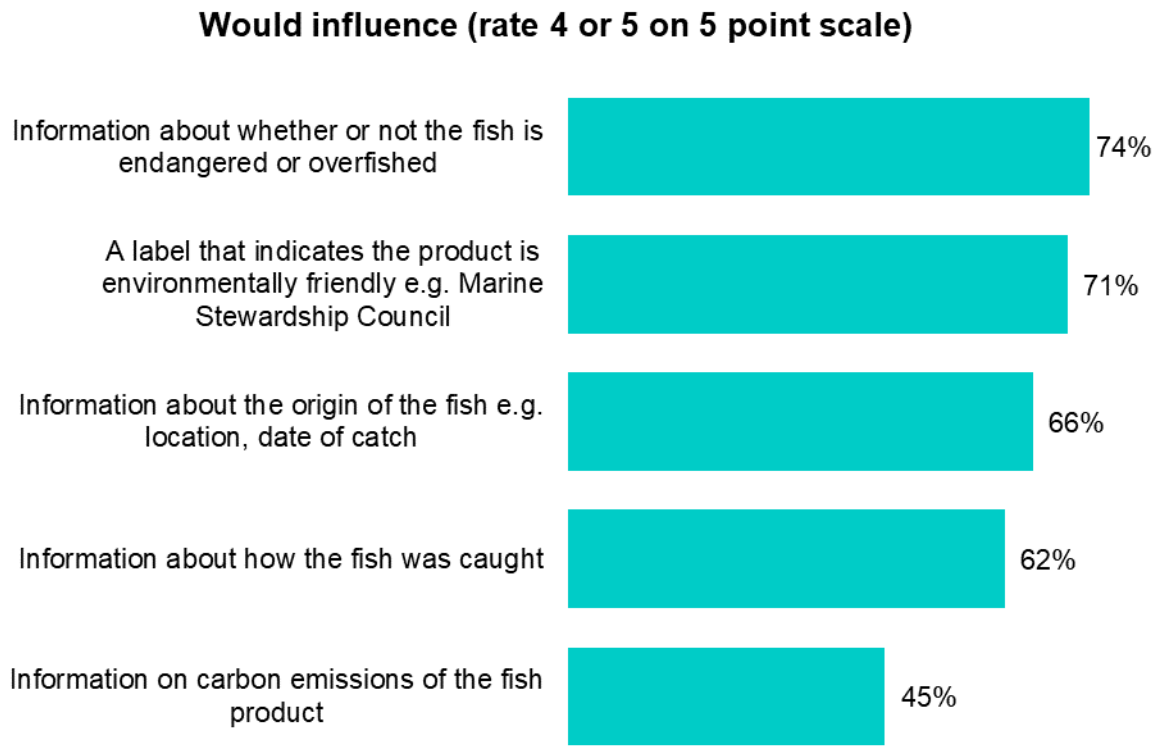
- Behaviour

Seafood purchasing actions

Seventy-four percent said that they purchase seafood (fish or shellfish).

Of these, 74% said that information about whether or not the fish is endangered or overfished influenced their purchase (Figure 23). Labels indicating the product was environmentally friendly influenced 71% of people who bought seafood. Less significant, but still influencing the majority of people was information about the origin of the fish (66%) and how the fish was caught (62%). Information on carbon emissions of the fish product had the lowest influence at 45%.

Figure 23: Information influencing seafood purchase (weighted %)



Q20: When buying seafood (fish or shellfish), to what extent, would each of the following influence your purchase?
Unweighted base: Where purchase seafood: 2,227

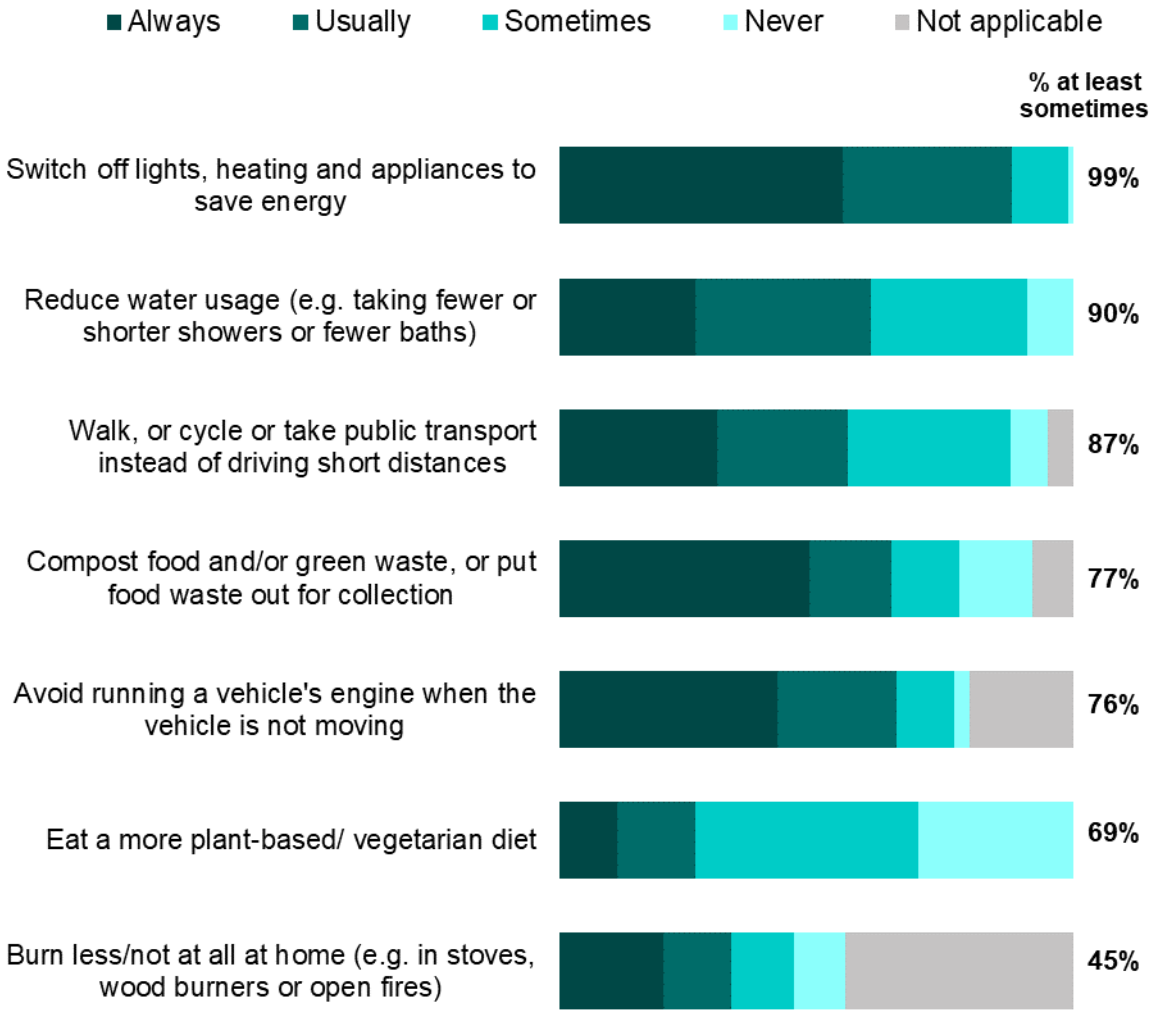
Dimensions:

- Behaviour
- Communication
- Knowledge
- Awareness

Food, energy and transport actions

Virtually all (99%) switch off lights, heating and appliances to save energy, 90% reduce water usage and 87% walk, or cycle or take public transport instead of driving short distances. (Figure 24).

Figure 24: Frequency of food, energy and transport actions (weighted %)



Q21: Thinking about your food, energy and transport use, which of the following do you currently do?
Unweighted base: 3,055

Table 6: Frequency of food, energy and transport actions (weighted %)

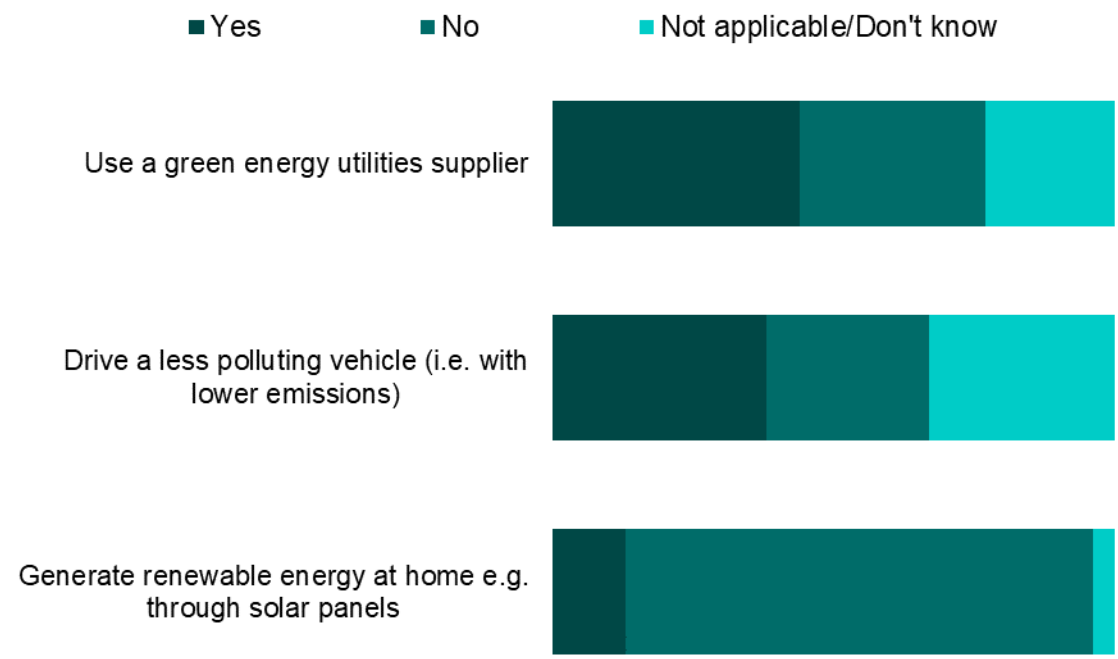
Action	Always	Usually	Sometimes	Never	Not applicable	Summary: At least sometimes
Switch off lights, heating and appliances to save energy	55%	33%	11%	1%	0%	99%
Reduce water usage (e.g. taking fewer or shorter showers or fewer baths)	26%	34%	30%	9%	0%	90%
Walk, or cycle or take public transport instead of driving short distances	30%	25%	31%	7%	5%	87%
Compost food and/or green waste, or put food waste out for collection	48%	16%	13%	14%	8%	77%
Avoid running a vehicle's engine when the vehicle is not moving	42%	23%	11%	3%	20%	76%
Eat a more plant-based/ vegetarian diet	11%	15%	43%	30%	0%	69%
Burn less/not at all at home (e.g. in stoves, wood burners or open fires)	20%	13%	12%	10%	44%	45%

Dimensions:

- Behaviour
- Communication
- Knowledge
- Awareness

While 44% of people use green energy utilities suppliers and 38% drive less polluting vehicles, only 13% generate renewable energy at home (Figure 25).

Figure 25: Utilities, vehicles and renewable energy (weighted %)



Q21. Thinking about your food, energy and transport use, which of the following do you currently do?
Unweighted base: 3,055

Table 7: Utilities, vehicles and renewable energy (weighted %)

Action	Yes	No	Not applicable/ Don't know
Use a green energy utilities supplier	44%	33%	23%
Drive a less polluting vehicle (i.e. with lower emissions)	38%	29%	33%
Generate renewable energy at home e.g. through solar panels	13%	83%	4%

Dimensions:

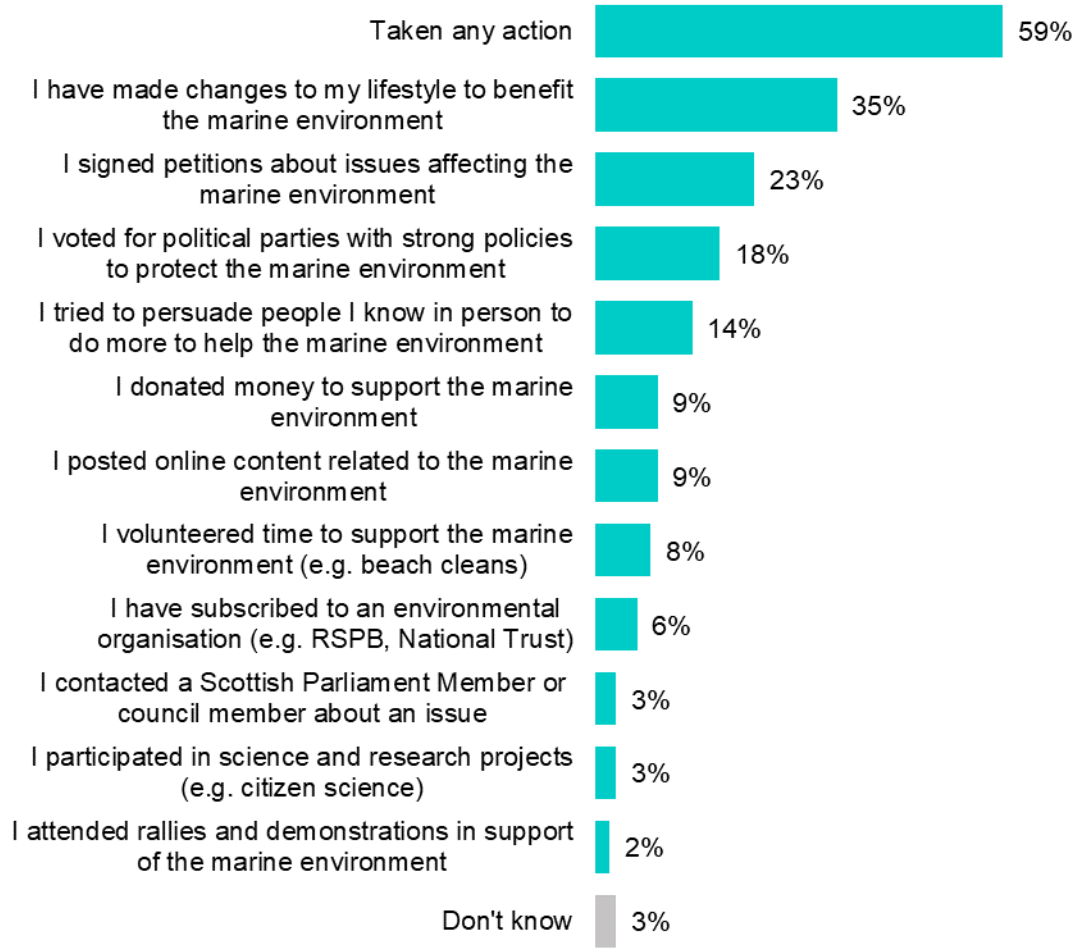
- Behaviour
- Communication
- Knowledge
- Awareness

Marine activism

Fifty-nine percent had taken at least one of the listed actions to protect the marine environment (Figure 26). The most common action people had undertaken to protect the marine environment was making lifestyle changes (35%) followed by signing petitions (23%) and voting for political parties with strong policies to protect the marine environment (18%).

Direct action in rallies or demonstrations (2%), involvement in citizen science (3%) and contacting elected representatives (3%) were the least undertaken actions whilst 38% said they had undertaken none of the activities listed.

Figure 26: Activities undertaken to protect the marine environment (weighted %)



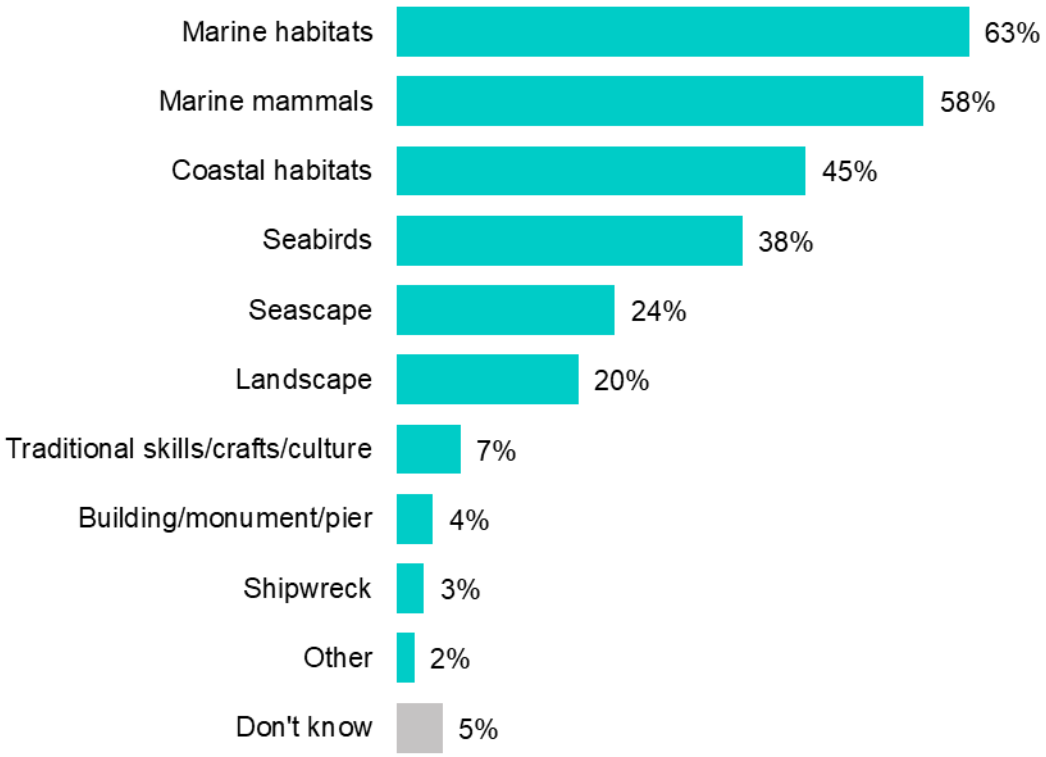
Q15. Which of the following activities, if any, have you done to protect the marine environment in Scotland?
Unweighted base: 3,055

Dimensions:

- Activism
- Behaviour
- Attitudes

Where they had taken action to protect the marine environment, this was most commonly in relation to marine habitats (63%), followed by marine mammals (58%) (Figure 27).

Figure 27: Aspects of marine environment intended to protect (weighted %)



Q16. What aspects of the marine environment was your activity intended to protect?
Unweighted base: Where tried to protect the marine environment: 1,847

Dimensions:

- Activism
- Behaviour
- Attitudes

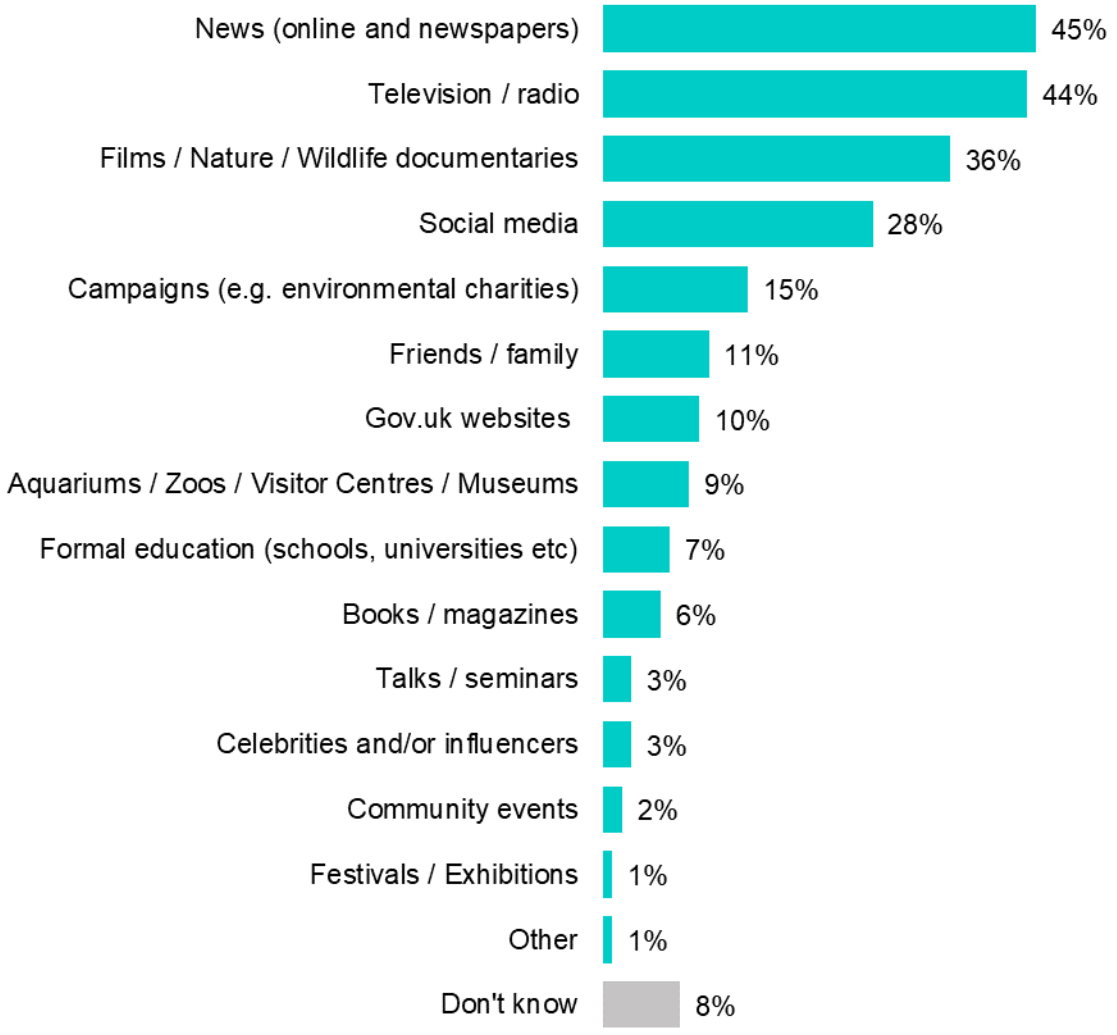
Communicating about the marine environment

The most common sources of knowledge/information about the marine environment in the last 12 months was news (45%), television and radio (44%) and films, nature and wildlife documentaries (36%) (Figure 28).

While social media was indicated by 28% of respondents, only 3% indicated a role for celebrities or influencers.

The least common sources, in addition to celebrities or influencers, were talks/seminars (3%), community events (2%) and festivals/exhibitions (1%).

Figure 28: Sources of knowledge about the marine environment (weighted %)



Q14. Thinking about the last 12 months, where do you think your knowledge/information about the marine environment in Scotland has mostly come from? Please select a maximum of three.
Unweighted base: 3,055

Dimensions:

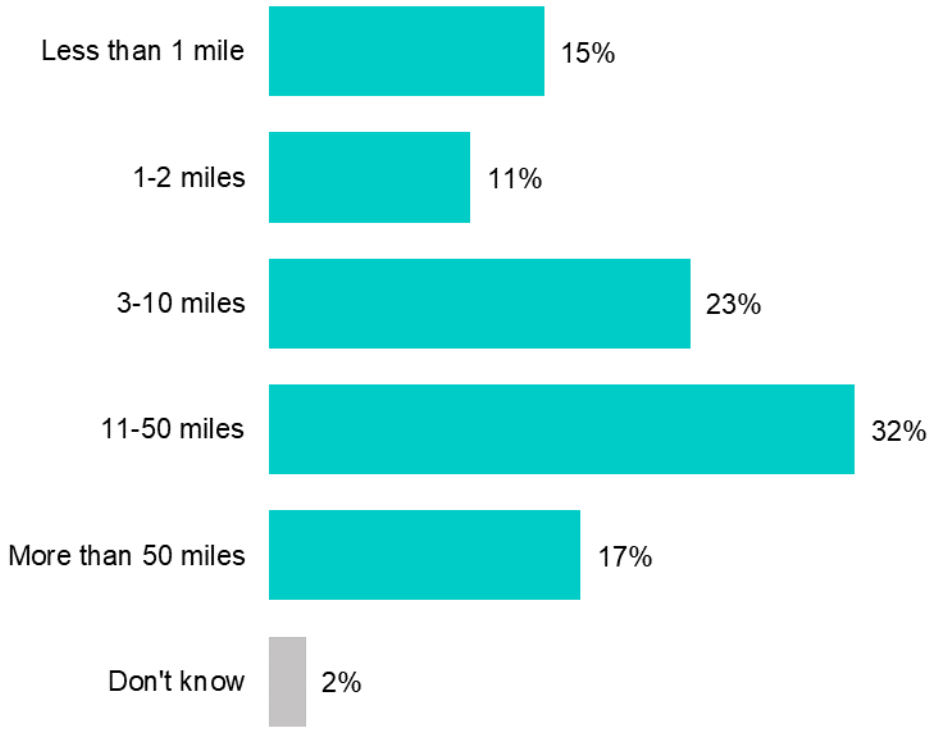
- Communication
- Knowledge
- Awareness

Visiting the marine environment

In the last 12 months, 56% had visited the marine environment. 32% had not visited in the last 12 months and 10% had never visited.

A quarter (26%) of respondents travelled up to 2 miles, a similar proportion (23%) between 3 and 10 miles, and a third (32%) travelled between 11 and 50 miles. Just 17% travelled more than 50 miles (Figure 29).

Figure 29: Distance travelled for visit (weighted %)



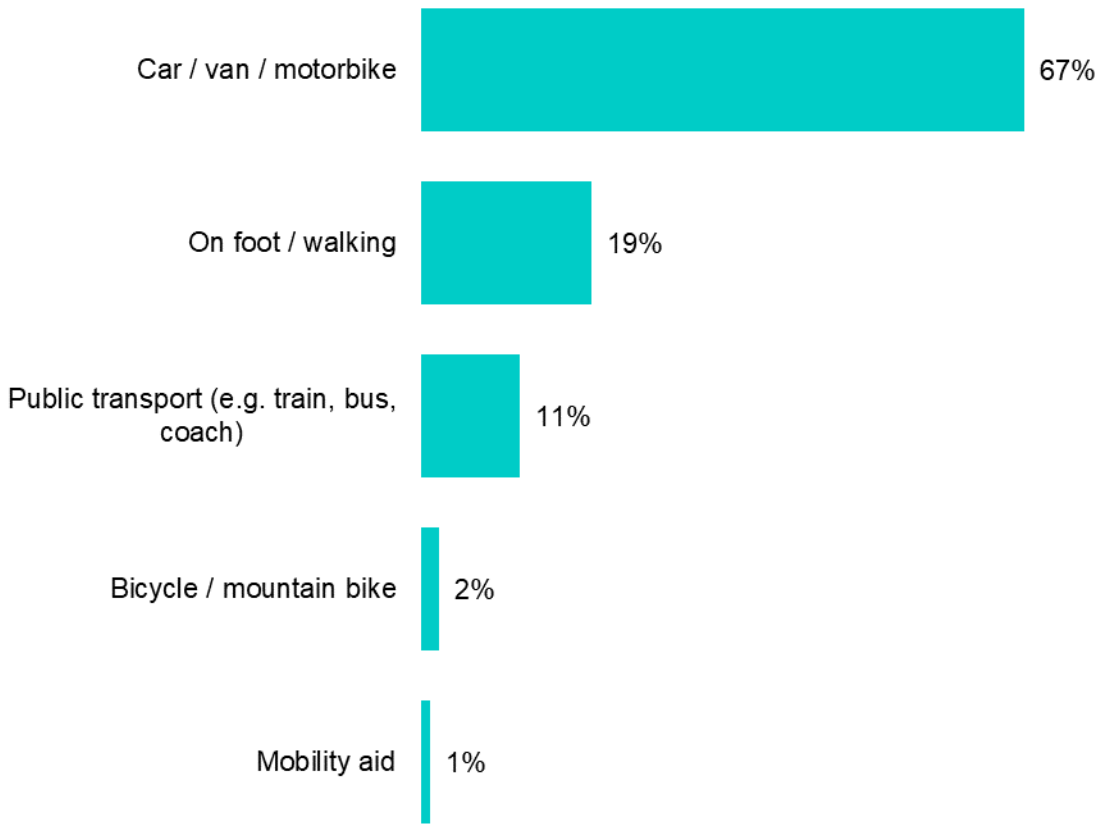
Q31: Approximately how far in miles did you travel to get there?
Unweighted base: where visited in last 12 months: 1,755

Dimensions:

- Access, experience, and proximity
- Behaviour

By far the most common form of transport used to travel to marine environments was car / van or motorbike (67%) (Figure 30).

Figure 30: Main mode of transport used for visit (weighted %)



Q32: What was the main form of transport you used to get there?
Unweighted base: where visited in last 12 months: 1,755

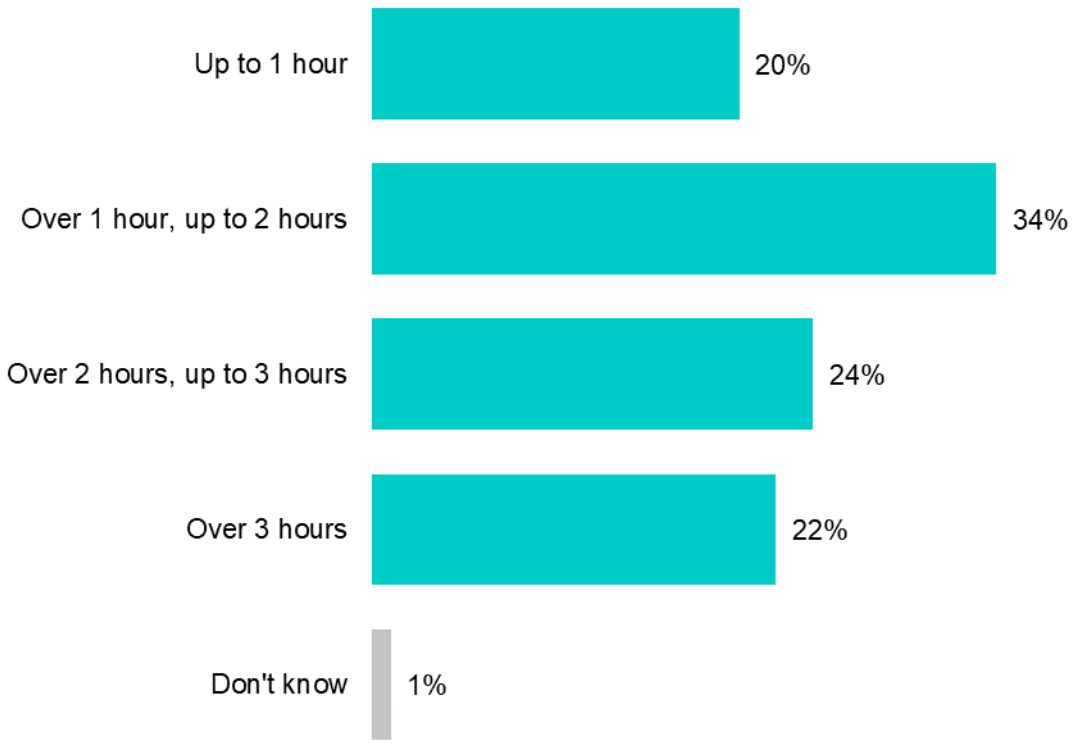
Dimensions:

- Access, experience, and proximity
- Behaviour

Length of visits

Of those who had visited the marine environment in the last 12 months, the most common length of time spent there at their last visit was over 1 hour, up to 2 hours (34%) (Figure 31).

Figure 31: Length of visit (weighted %)



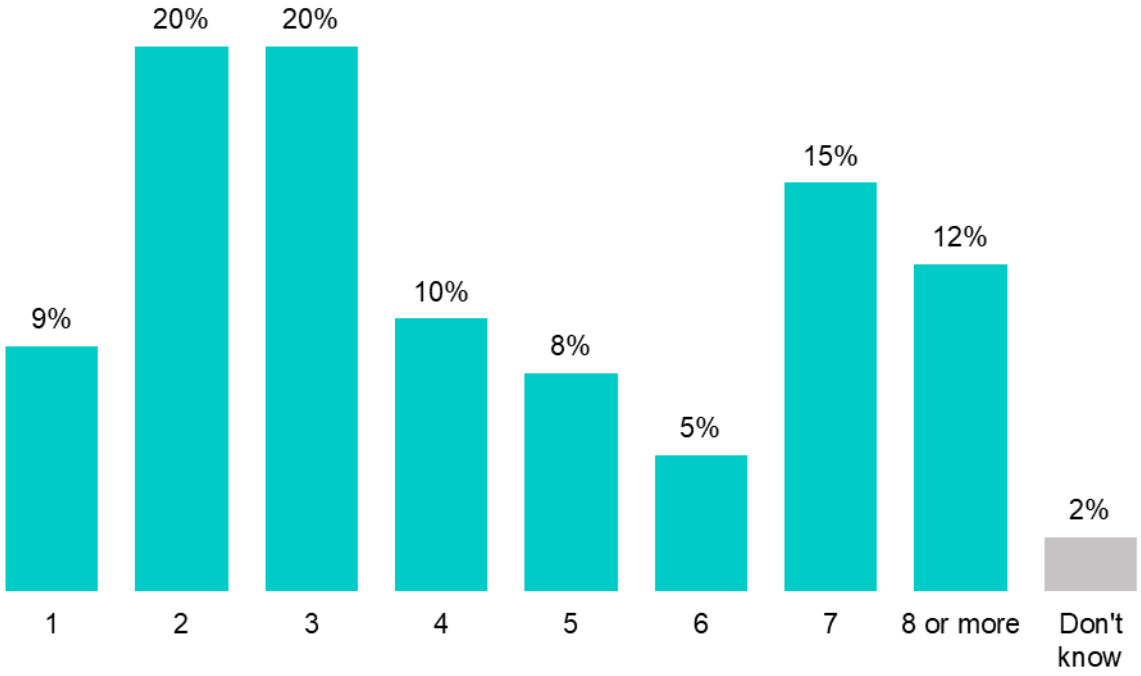
Q28: Thinking about your most recent visit to the marine environment over the last 12 months, how long did you spend there?
Unweighted base: where visited in last 12 months: 1,755

Dimensions:

- Access, experience, and proximity
- Behaviour

Four out of ten of the respondents who stayed over 3 hours also stayed overnight (41%) with the most popular length for an overnight stay being 2 nights (20%) or 3 nights (20%) (Figure 32).

Figure 32: Number of nights stayed (weighted %)



Q30: How many nights did you stay away from your home during this trip?
Unweighted base: where stayed overnight: 150

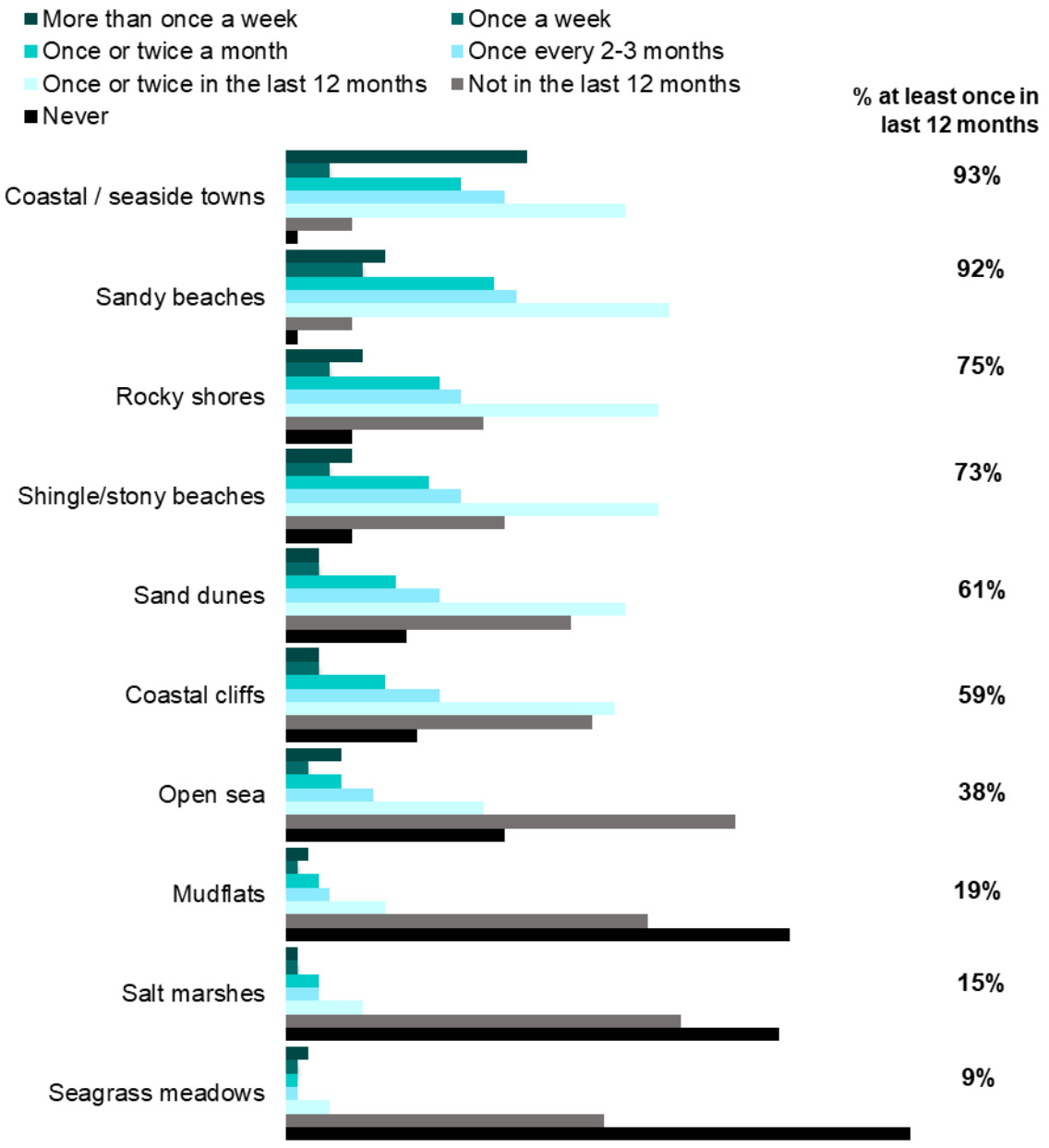
Dimensions:

- Access, experience, and proximity
- Behaviour

Marine destinations

Of those respondents who had visited the marine environment in the past 12 months, the places most visited for leisure were coastal/seaside towns (93%) and sandy beaches (92%). Seagrass meadows (9%) and salt marshes (15%) were the least visited (Figure 33).

Figure 33: Frequency of visits by marine environment type (weighted %)



Q26. Thinking about the last 12 months, how often on average, if at all, have you spent your leisure time in the following marine environments.
Unweighted base: where visited in last 12 months: 1,755

Table 8: Frequency of visits by marine environment type (weighted %)

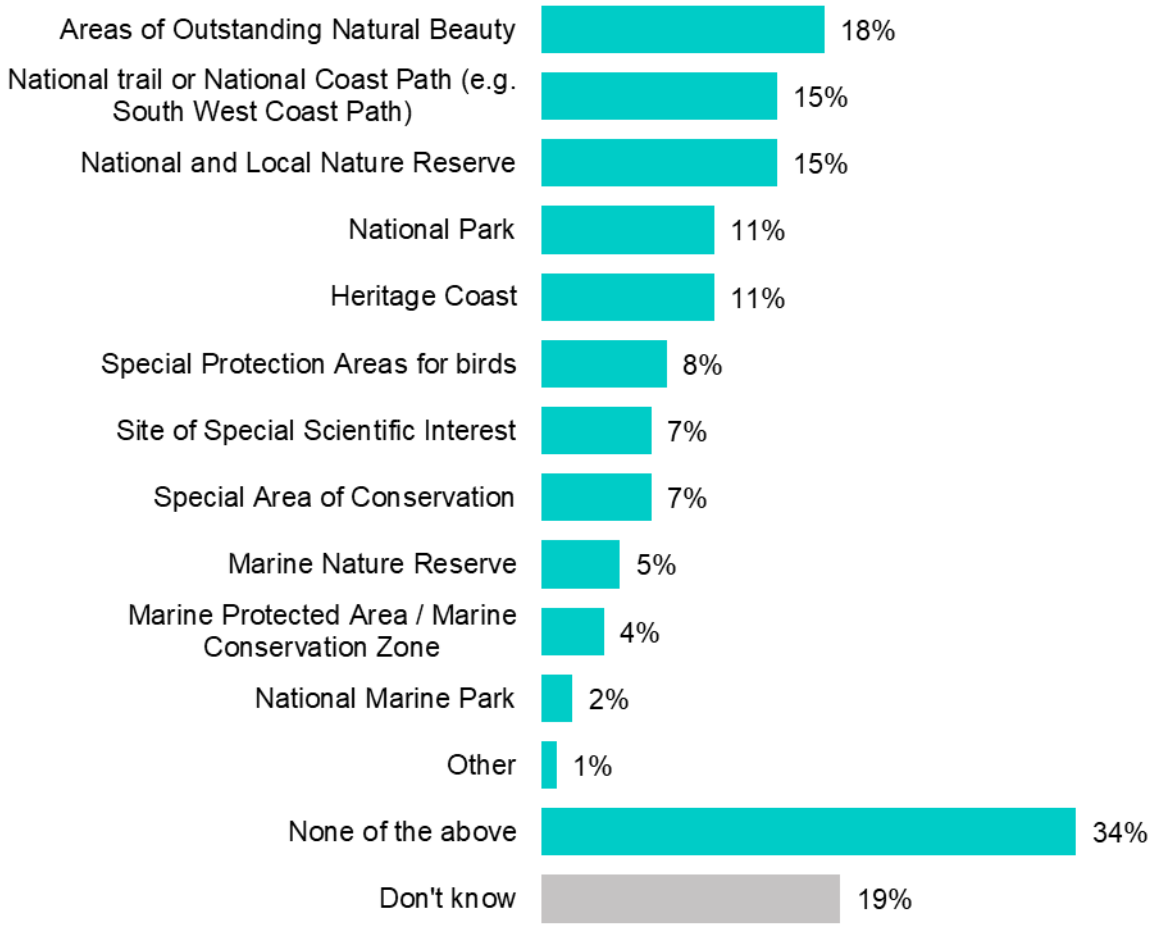
Type	More than once a week	Once a week	Once or twice a month	Once every 2-3 months	Once or twice in the last 12 months	Not in the last 12 months	Never	% at least once in last 12 months
Coastal / seaside towns	22%	4%	16%	20%	31%	6%	1%	93%
Sandy beaches	9%	7%	19%	21%	35%	6%	1%	92%
Rocky shores	7%	4%	14%	16%	34%	18%	6%	75%
Shingle/stony beaches	6%	4%	13%	16%	34%	20%	6%	73%
Sand dunes	3%	3%	10%	14%	31%	26%	11%	61%
Coastal cliffs	3%	3%	9%	14%	30%	28%	12%	59%
Open sea	5%	2%	5%	8%	18%	41%	20%	38%
Mudflats	2%	1%	3%	4%	9%	33%	46%	19%
Salt marshes	1%	1%	3%	3%	7%	36%	45%	15%
Seagrass meadows	2%	1%	1%	1%	4%	29%	57%	9%

Dimensions:

- Access, experience, and proximity
- Behaviour
- Knowledge
- Awareness

Whilst 34% said they hadn't visited any designated or specific types of sites in the last 12 months, 18% said they recalled visiting Areas of Outstanding Natural Beauty, followed by National trail or National Coastal Path (15%) and National and Local Nature Reserves (15%) (Figure 34).

Figure 34: Designated/specific types of sites visited on most recent visit (weighted %)



Q35. Thinking about the last 12 months, do you recall any visits to marine environments being to the following?
Unweighted base: where visited in last 12 months: 1,755

Dimensions:

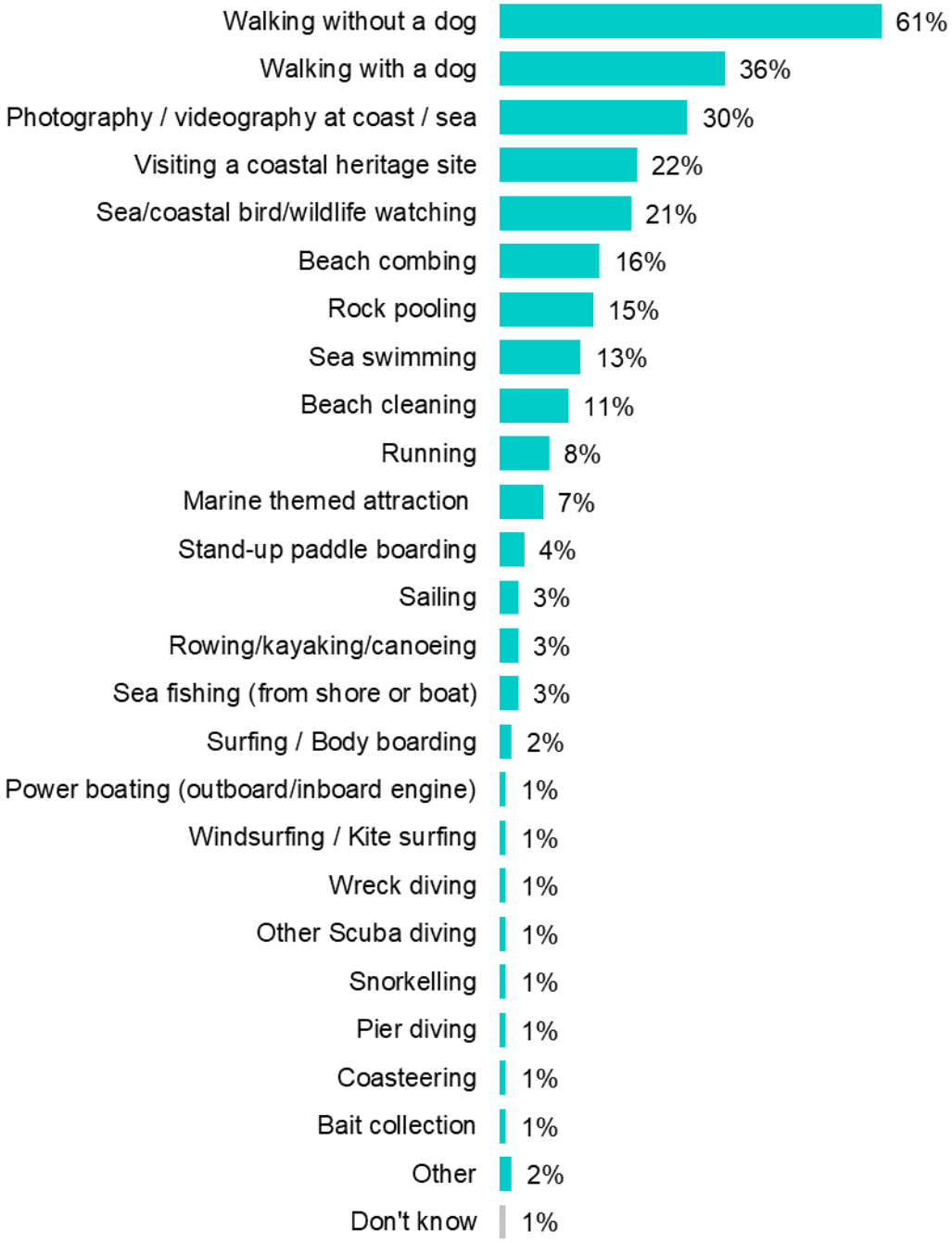
- Access, experience, and proximity
- Behaviour
- Knowledge
- Awareness

Recreational activities

Walking, both without (61%) and with a dog (36%) were popular activities undertaken during visits to the marine environment in the last 12 months (Figure 35).

Photography and videography were also commonly undertaken activities (30%) as were visiting a heritage site (22%) and wildlife watching (21%).

Figure 35: Activities undertaken during visit(s) to the marine environment in last 12 months (weighted %)



Q34. What recreational activities did you undertake during your visit(s) to the marine environment in the last 12 months?
Unweighted base: where visited in last 12 months: 1,755

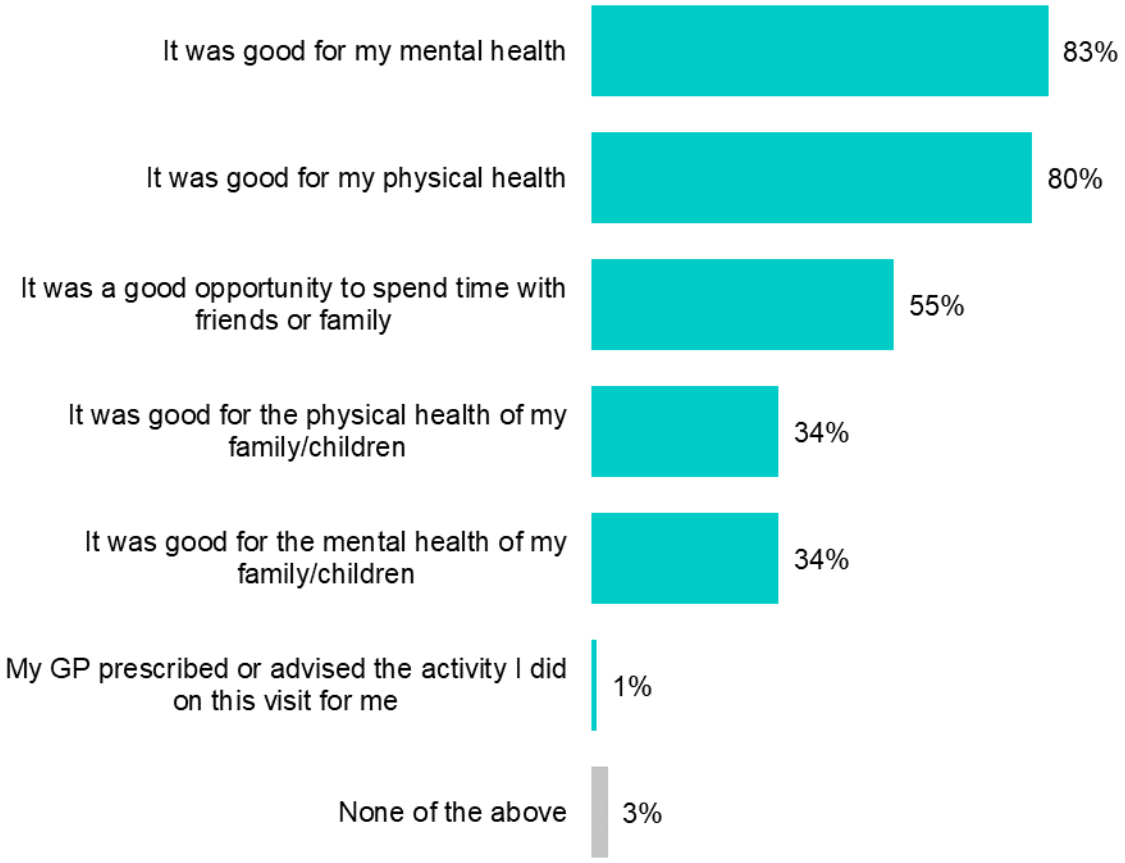
Dimensions:

- Access, experience, and proximity
- Activism
- Behaviour

Outcomes and motivations of visits

Good mental health (83%) and physical health (80%) were the most frequently reported outcomes from spending time in a marine environment. Only 1% were prescribed or advised by their GP to undertake their activity (Figure 36).

Figure 36: Outcomes associated with most recent visit to marine environment (weighted %)



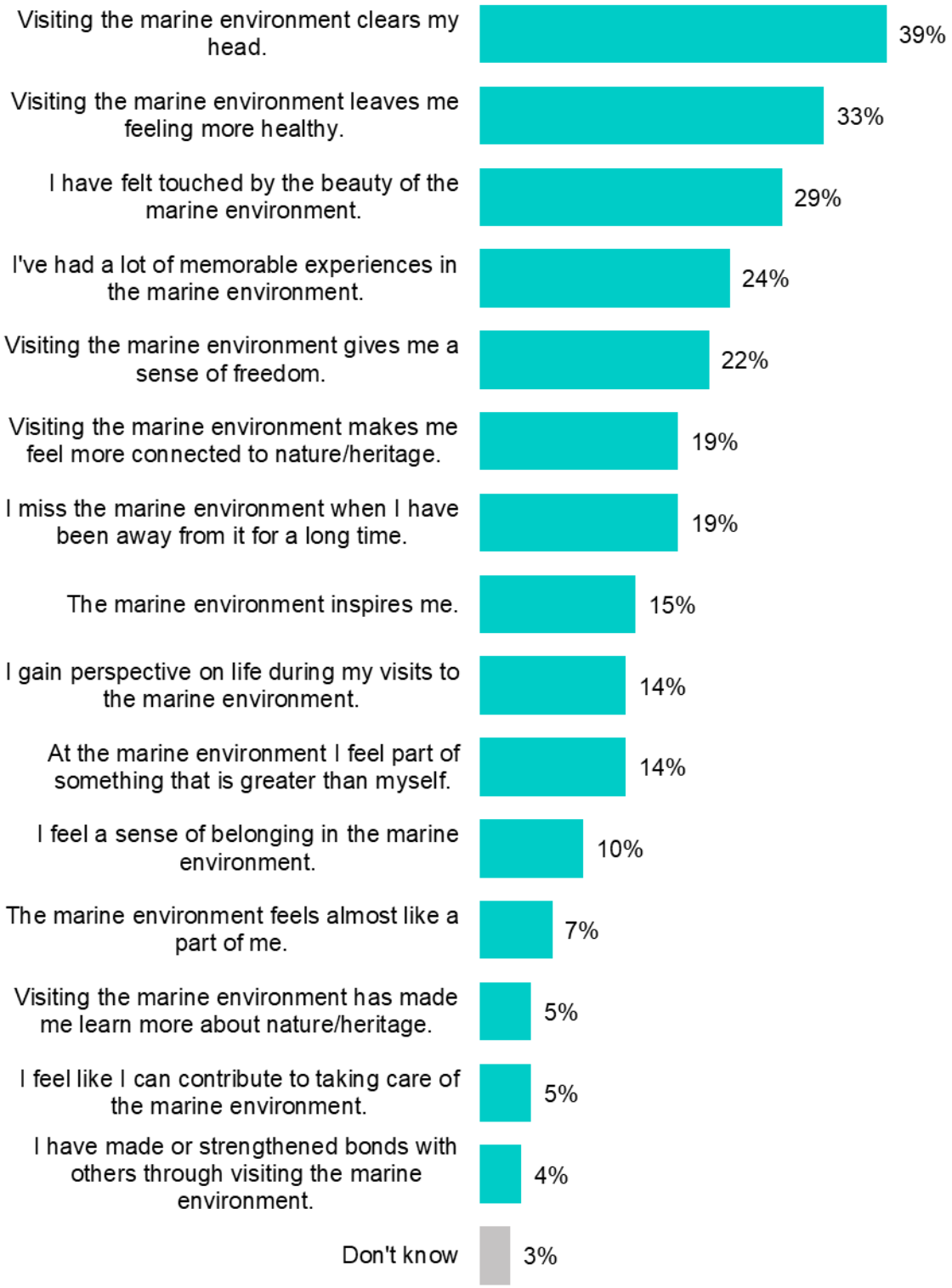
Q33. Which of the following statements about this time spent at a marine environment are true?
Unweighted base: where visited in last 12 months: 1,755

Dimensions:

- Access, experience, and proximity
- Personal or emotional connection
- Activism
- Behaviour
- Communication
- Attitudes
- Knowledge
- Awareness

When asked about general motivations for visiting marine environments, the most commonly reported reasons were clearing one's head (39%) and feeling healthier (33%) (Figure 37).

Figure 37: General motivations for visiting the marine environment (weighted %)



Q36. Thinking more generally about the marine environment, which three statements best describe your motivation to visit?
Unweighted base: where visited in last 12 months: 1,755

Dimensions:

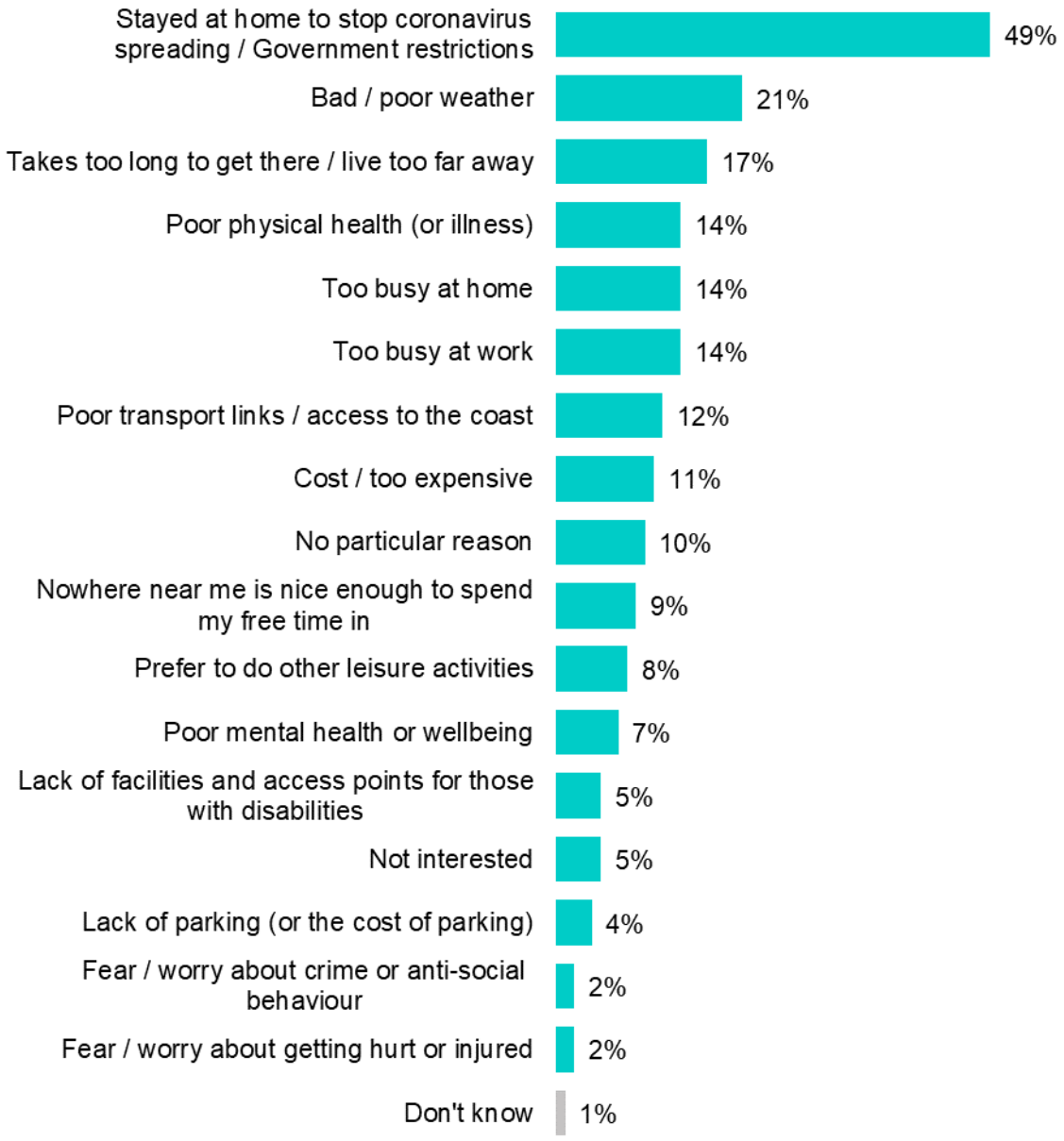
- Access, experience, and proximity
- Personal or emotional connection
- Activism
- Behaviour
- Communication
- Attitudes
- Knowledge
- Awareness

Barriers to visits

The main reason for not visiting a marine environment in the last 12 months was staying home due to COVID-19 (49%) (Figure 38).

Bad or poor weather was the second biggest reason (21%) and distance/time taken to get to a marine environment was third (17%). Distance may also have interacted with COVID-19 barriers, where 'Stay Local' restrictions were also in place.

Figure 38: Reasons for not visiting the marine environment in the last 12 months (weighted %)



Q27. What was the main reason/s for not visiting a marine environment in the last 12 months?
Unweighted base: where visited in last 12 months: 1,249

Dimensions:

- Access, experience, and proximity
- Personal or emotional connection
- Behaviour
- Attitudes

Annex 1: Note on Methodology

The research used an online panel method. Invitations were sent to members of online panels using BMG's 'panel blend' approach which uses simultaneous survey invitations across multiple panels to spread fieldwork. The method is designed to improve the quality of outputs by hedging against the risk of selecting a single panel provider. Quotas were set on age based on the latest Office for National Statistics mid-year estimates as well as whether the area was classified as coastal or non-coastal (based on participant settlement) to ensure the interviews completed were representative of the population on this basis. These were monitored closely and any groups that were under-represented were sent further invitations and reminders in order that we achieved as close as possible to the original quotas set. In addition to this all respondents had to have been a permanent resident in Scotland for at least the last 5 years. Additional variables were also monitored during fieldwork to ensure a spread of responses were received:

- Region
- Gender
- Ethnicity
- SIMD quintiles
- ONS Coastal Communities sub-groups
- Urban/rural

Further details on the methodology are available in the Technical Report.

How to access background or source data

The data collected for this social research publication:

☐ may be made available on request, subject to consideration of legal and ethical factors. Please contact Marine Analytical Unit for more information MarineAnalyticalUnit@gov.scot

social research

The views expressed in this report are those of the researcher and do not necessarily represent those of the Scottish Government or Scottish Ministers.

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