

Ocean Literacy in Wales: Headline Findings Report

Report No: 652

Author Name: Atkinson, Mark., Coleman, Lys., Hands, Dawn., Hughes, Kathryn.

Author Affiliation: BMG Research

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Crynodeb gweithredol

Mae'r adroddiad hwn yn cyflwyno'r prif ganfyddiadau ar gyfer y sampl Cymreig o'r *Arolwg ar Lythrennedd Morol yn y DU*, ac mae'n dilyn ymchwil a wnaed yn 2021. Comisiynwyd yr arolwg fel rhan o brosiect *Deall Llythrennedd Morol a Newid Ymddygiad Morol Cysylltiedig â'r Hinsawdd yn y DU*, a gomisiynwyd gan Defra mewn cydweithrediad â Chyfoeth Naturiol Cymru, Scottish Government ac Ymddiriedolaeth Cadwraeth y Môr¹. Prif ffocws yr arolwg hwn yw deall yn well beth yw cwmpas a lefelau presennol Llythrennedd Morol ymysg y cyhoedd yng Nghymru, Lloegr a'r Alban.

Mae'n dod yn gynyddol glir y bydd gwella Llythrennedd Morol ar draws cymdeithas yn hanfodol er mwyn gwireddu'r newid mewn ymddygiad y mae ei angen i fynd i'r afael â'r heriau sy'n wynebu ein harfordiroedd a'n moroedd ac i'w rheoli mewn ffordd gynaliadwy. Caiff hyn ei gydnabod mewn amrywiaeth o offerynnau polisi, yn genedlaethol ac yn rhyngwladol (er enghraifft, [Datganiad Ardal Morol Cymru](#) a [Nodau Datblygu Cynaliadwy y Cenhedloedd Unedig](#)). Fodd bynnag, mae yna brinder data ar Lythrennedd Morol ar lefel y DU a'r cenhedloedd. Mae casglu'r data hwn yn hanfodol er mwyn defnyddio Llythrennedd Morol yn effeithiol fel tystiolaeth i ddylanwadu ar ddatblygiad polisi. Datblygwyd yr arolwg hwn i ddechrau llenwi'r bwloch hwn o ran gwybodaeth a thystiolaeth.

Mae'r arolwg yn defnyddio diffiniad IOC-UNESCO o 'Lythrennedd Morol', sef 'dealltwriaeth o ddylanwad y môr ar berson ac o ddylanwad y person ar y môr'. Gan ddefnyddio'r diffiniad hwn, mae'r arolwg yn archwilio amrywiaeth o ddimensiynau i Lythrennedd Morol, gan adlewyrchu'r ddealltwriaeth gynyddol o beth mae'r cysyniad hwn yn ei olygu. Yn y gorffennol, roedd Llythrennedd Morol yn canolbwyntio ar wybodaeth yn unig, ond bellach mae'n ymgorffori amrywiaeth ehangach o ddimensiynau:

- Ymwybyddiaeth
- Agweddau
- Gweithredu
- Ymddygiad
- Cyfathrebu
- Cysylltiad emosiynol, a
- Mynediad, profiad, ac agosrwydd at yr amgylchedd morol.

Mae'r arolwg yn rhoi gwybodaeth gadarn am y graddau y mae'r cyhoedd yn deall ac yn ymwybodol o'r buddion a ddaw iddynt gan yr amgylchedd morol. Mae hefyd yn

¹ Ar adeg ysgrifennu mae Adran Amaethyddiaeth, Amgylchedd a Materion Gwledig Gogledd Iwerddon hefyd yn cymryd rhan yn yr arolwg am y tro cyntaf yn 2022 a bydd prif adroddiad Gogledd Iwerddon yn cael ei gyhoeddi'n ddiweddarach.

nodi mathau o ymddygiad amgylcheddol ymysg y cyhoedd mewn perthynas â'r amgylchedd morol, er enghraifft, defnyddio ynni o ffynonellau adnewyddadwy o'r môr, prynu mwy o gynhyrchion bwyd môr wedi'u cynhyrchu'n lleol, a defnyddio mwy ar drafnidiaeth gyhoeddus. Mae cwestiynau'r arolwg yn mynd ati i fesur cwmpas agweddau'r cyhoedd at warchod yr amgylchedd morol, gan gynnwys eu bwriad i newid. Caiff gwybodaeth ei chasglu hefyd ynghylch y math o ymwneud â'r amgylchedd morol a lefel yr ymwneud hwnnw, gan gynnwys ymweliadau a gweithgareddau a wnaed yn y 12 mis diwethaf, ac mae'n nodi'r rhwystrau a'r ysgogiadau sy'n dylanwadu ar fynediad a chyfranogiad. Yn olaf, mae'n rhoi gwybodaeth am effaith ymweliadau â'r amgylchedd morol ar lesiant ymysg y boblogaeth. Yn ogystal, roedd yr arolwg ar gyfer 2022 yn cynnwys cwestiynau sy'n ymdrin ag ymwybyddiaeth o gynefinoedd carbon glas a buddion canfyddedig y cynefinoedd morol hyn.

Mae prif ganfyddiadau'r arolwg fel a ganlyn:

- Mae'r ymatebwyr o Gymru yn rhoi gwerth ar yr amgylchedd morol, ac yn gwerthfawrogi'n arbennig y buddion o ran iechyd corfforol ac iechyd meddwl a ddaw yn ei sgil (mae 84% yn adrodd bod ymweld â'r amgylchedd morol yn dda i'w hiechyd meddwl, ac mae 78% yn adrodd ei fod yn dda i'w iechyd corfforol).
- Y prif ymateb emosiynol i'r amgylchedd morol yw pryder (48%) ac yna rhyfeddod (41%). Roedd y rhan fwyaf (83%) yn teimlo ei bod yn bwysig gwarchod yr amgylchedd morol.
- Mae canfyddiad mai sbwriel môr / llygredd plastig yw'r pwysau sy'n peri'r bygythiad mwyaf i'r amgylchedd morol yng Nghymru (mae 70% yn teimlo mai dyma'r bygythiad mwyaf y mae'r amgylchedd morol yn ei wynebu).
- Mae cyfran fawr o'r ymatebwyr o Gymru yn dangos parodrwydd i wneud newidiadau i'w ffordd o fyw (mae 79% wedi, neu'n bwriadu, gwneud newidiadau i'w ffordd o fyw), ac ymddengys mai'r gweithredoedd unigol hyn yw'r brif ffordd y mae pobl yn gweithredu i warchod yr amgylchedd morol. Nid yw'n ymddangos bod pobl yn ymgymryd cymaint â gweithredoedd eraill, fel cysylltu â chynrychiolwyr etholedig a gwirfoddoli. O'r rhai nad ydynt wedi newid eu ffordd o fyw o fewn y 12 mis diwethaf, y prif reswm a roddwyd oedd eu bod eisoes yn teimlo eu bod yn gwneud cymaint ag y gallant (38%).
- Mae bylchau gwybodaeth i'w cael mewn perthynas â nifer o dermau morol. Er enghraifft, nid oes dealltwriaeth dda o'r termau canlynol: ewtroffeiddio, Degawd Gwyddorau'r Môr y Cenhedloedd Unedig, carbon glas, cyfalaf naturiol, atafaelu carbon, Llythrennedd Morol, dinasyddiaeth forol, asidiad y môr, gwasanaethau ecosystem, a datrysiadau seiliedig ar natur. (Mae llai na 50% o'r ymatebwyr yn deall y termau hyn).
- Ar y cyfan mae pobl yn cael eu gwybodaeth am y môr o'r teledu neu'r radio a'r newyddion (adroddodd 43% eu bod yn cael eu gwybodaeth am yr amgylchedd morol o'r ffynonellau hyn).

- Trefi'r arfordir yw'r cyrchfannau mwyaf poblogaidd gan ymwelwyr (mae 95% o'r ymatebwyr yn adrodd eu bod wedi ymweld â'r gyrchfan hon yn y 12 mis diwethaf) ac yna traethau tywodlyd (94% o'r ymatebwyr yn adrodd eu bod wedi ymweld â'r gyrchfan hon yn y 12 mis diwethaf).
- Cerdded yw'r gweithgaredd mwyaf poblogaidd a wneir ar yr arfordir (mae 61% o'r ymatebwyr yn mwynhau cerdded heb gi, a 38% gyda chi).
- Mae Ffigur 1 drosodd yn crynhoi prif ganfyddiadau'r arolwg.

Ffigur1: Crynodeb o'r prif ganfyddiadau (% wedi'i phwysoli)

Ymwybyddiaeth	<ul style="list-style-type: none"> • 10% yn credu bod iechyd yr amgylchedd morol byd-eang yn dda neu'n dda iawn • 23% yn credu bod iechyd yr amgylchedd morol o amgylch Cymru yn dda neu'n dda iawn • 25% ag ymwybyddiaeth dda neu dda iawn o'r heriau byd-eang y mae'r amgylchedd morol yn eu hwynebu
Gwybodaeth	<ul style="list-style-type: none"> • Termau morol â'r ddealltwriaeth uchaf: <ul style="list-style-type: none"> • 92% newid hinsawdd • 81% pysgota cynaliadwy • 66% datblygu cynaliadwy • 66% bioamrywiaeth • 66% Ardaloedd Morol Gwarchodedig
Agweddau	<ul style="list-style-type: none"> • 3 prif fudd yr amgylchedd morol: <ul style="list-style-type: none"> • 50% cynefinoedd amrywiol o blanhigion ac anifeiliaid • 31% ynni adnewyddadwy • 29% bwyd • 3 prif fudd morfeydd heli a dolydd morwellt: <ul style="list-style-type: none"> • Cynefinoedd amrywiol ar gyfer bywyd gwylt (53% yn achos y ddau) • Amddiffynfeydd arfordirol naturiol (43% a 38%) • Rheoli llygredd a phuro dŵr (36% a 39%) • Y cynefin pwysicaf o ran dal carbon oedd coedwigoedd glaw trofannol (63%) • 3 prif fygythiad i'r amgylchedd morol: <ul style="list-style-type: none"> • 70% sbwriel môr a llygredd plastig • 54% llygredd cemegol • 47% newid hinsawdd • 83% gwarchod yr amgylchedd morol yn bwysig neu'n bwysig iawn • 48% gweithgarwch pobl yn cyfrannu at newid hinsawdd • 83% yn cefnogi creu Ardaloedd Morol Gwarchodedig
Cyfathrebu	<ul style="list-style-type: none"> • Ffynonellau gwybodaeth am yr amgylchedd morol: <ul style="list-style-type: none"> • 43% teledu/radio • 43% newyddion • 34% rhaglenni dogfen • 28% cyfryngau cymdeithasol
Ymddygiad	<ul style="list-style-type: none"> • 3 prif ymddygiad dros yr hinsawdd: <ul style="list-style-type: none"> • 82% ailgylchu • 73% defnyddio llai o blastig untro • 66% aildefnyddio plastig • 79% wedi neu'n bwriadu gwneud newidiadau i'w ffordd o fyw • Rhesymau dros newid: <ul style="list-style-type: none"> • 67% pryder am yr hinsawdd • 64% eisiau bod yn wyrddach • 48% yn credu bod ffordd o fyw yn cael effaith
Gweithredu	<ul style="list-style-type: none"> • Prif gamau gweithredu dros y môr: <ul style="list-style-type: none"> • 35% newidiadau i ffordd o fyw

	<ul style="list-style-type: none"> • 23% deisebau
Cysylltiad personol neu emosiynol	Prif dermau emosiynol <ul style="list-style-type: none"> • 48% pryder • 41% rhyfeddod • 29% chwilfrydedd • 27% llonyddwch
Mynediad, profiad ac agosrwydd	<ul style="list-style-type: none"> • 8% erioed wedi ymweld â'r amgylchedd morol • Prif weithgareddau: <ul style="list-style-type: none"> • 61% cerdded • 38% mynd â'r ci am dro • 28% ffotograffiaeth/fideograffiaeth wrth yr arfordir/y môr • Canlyniadau ymweliadau: <ul style="list-style-type: none"> • 84% iechyd meddwl • 78% iechyd corfforol • 57% amser gydag eraill

Executive summary

This report presents the headline findings for the Welsh sample from the survey entitled: *Survey on Ocean Literacy in the UK* and follows up on research undertaken in 2021. 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 Natural Resources Wales, Scottish Government and the Ocean Conservation Trust². 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 [Wales' Marine Area Statement](#) and 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 evidence to influence 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 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.

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.

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 influence access and participation. Finally, it provides information on the impact of visits to the marine environment on wellbeing within the population. 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:

- Welsh respondents value the marine environment, particularly appreciating the physical and mental health benefits it gives them (84% report that visits to the marine environment are good for their mental health and 78% report that visits are good for their physical health).
- The overriding emotional response to the marine environment is concern (48%) followed by awe/wonder (41%). Most (83%) 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 the Wales' marine environment (70% feel it to be the biggest threat facing the marine environment).
- A large proportion of Welsh respondents indicate a willingness to make lifestyle changes (79% have, or intend to make lifestyle changes), and these individual actions appear 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, carbon sequestration, Ocean Literacy, marine citizenship, ocean acidification, ecosystem services and nature-based solutions are not well understood. (Less than 50% of respondents understand each of these terms).
- People mostly get their information about the ocean from television or radio and the news (43% report getting their information about the marine environment from these sources).
- The most popular destinations for visitors are coastal towns (95% of respondents report visiting this destination over the last 12 months) and sandy beaches (94% 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 38% with a dog).

Figure 1 overleaf summarises the key findings from the survey.

Figure 1: Summary of key findings (weighted %)

Awareness	<p>10% believe health of the global marine environment is very good/good 23% believe health of the marine environment around Wales is very good/good 25% with very good/good awareness of global challenges facing the marine environment</p>
Knowledge	<p>Marine terms with highest understanding: 92% climate change 81% sustainable fishing 66% sustainable development 66% biodiversity 66% Marine Protected Areas</p>
Attitudes	<p>Top 3 benefits from marine environment: <ul style="list-style-type: none"> • 50% diverse plant and animal habitats • 31% renewable energy • 29% food Top 3 benefits of salt marshes and seagrass meadows: <ul style="list-style-type: none"> • Diverse habitats for wildlife (both 53%) • Natural forms of coastal protection (43% and 38%) • Pollution control and water purification (36% and 39%) Most important habitat for carbon capture was tropical rainforest (63%) 3 highest threats to the marine environment: <ul style="list-style-type: none"> • 70% marine litter and plastic pollution • 54% chemical pollution • 47% climate change 83% protecting marine environment very important/ important 48% human activity contributes to climate change 83% supported the creation of Marine Protected Areas</p>
Communication	<p>Sources of knowledge about the marine environment: <ul style="list-style-type: none"> • 43% television/radio • 43% news • 34% documentaries • 28% social media </p>
Behaviour	<p>Top 3 pro-climate behaviours: <ul style="list-style-type: none"> • 82% recycling • 73% reduced use of single use plastic • 66% reuse plastic 79% have or plan on making lifestyle changes Reasons for change: <ul style="list-style-type: none"> • 67% concern about climate • 64% desire to be greener 48% believed lifestyle has impact</p>
Activism	<p>Top pro-marine acts: <ul style="list-style-type: none"> • 35% lifestyle changes • 23% petitions </p>

<p>Personal or emotional connection</p>	<p>Top emotional terms:</p> <ul style="list-style-type: none"> • 48% concern • 41% awe/wonder • 29% curiosity • 27% calm/relaxed
<p>Access, experience & proximity</p>	<p>8% never visited the marine environment</p> <p>Top activities:</p> <ul style="list-style-type: none"> • 61% walking • 38% dog walking • 28% photography/videography at coast/sea <p>Outcomes of visits:</p> <ul style="list-style-type: none"> • 84% mental health • 78% physical health • 57% time with others

Introduction

The headline report

This report presents the headline findings for the Survey on Ocean Literacy in Wales. This survey was commissioned as part of the project *Understanding Ocean Literacy and Ocean Climate-related Behaviour Change in the UK*³ by Defra in collaboration with the Ocean Conservation Trust, Natural Resources Wales and Scottish government.

Across Wales, 2,051 people over the age of 16 participated in the 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 Appendix 1 and the Technical Report which accompanies this report for more details on sampling.

Background

The main aim of this survey is to better understand the extent and 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 and enhancing 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:

- 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.

³ 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 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 (age, region and coastal classification). This is applied to the overall unweighted base of 2,051 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 $\pm 1\%$ up or down from the percentages when summed to zero decimal places.

Where available, comparisons have been made with the 2021 Survey on Ocean Literacy in Wales, and statistically significant movements over time have been noted at the 95% confidence level.

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:

- A [technical report](#) containing details of the survey methodology
- Data tables in excel providing more detailed survey results
- [‘Understanding Ocean Literacy and ocean climate-related behaviour change in the UK – An Evidence Synthesis’](#). Report produced for Ocean Conservation Trust and Defra
- [Ocean Literacy in England: Headline Findings Report 2022](#) (Defra)
- [Ocean Literacy in Scotland: Headline Findings Report 2022](#) (Scottish Government)
- Ocean Literacy in Wales: Headline Findings Report 2021 (NRW)

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 Ocean Literacy dimensions examined 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

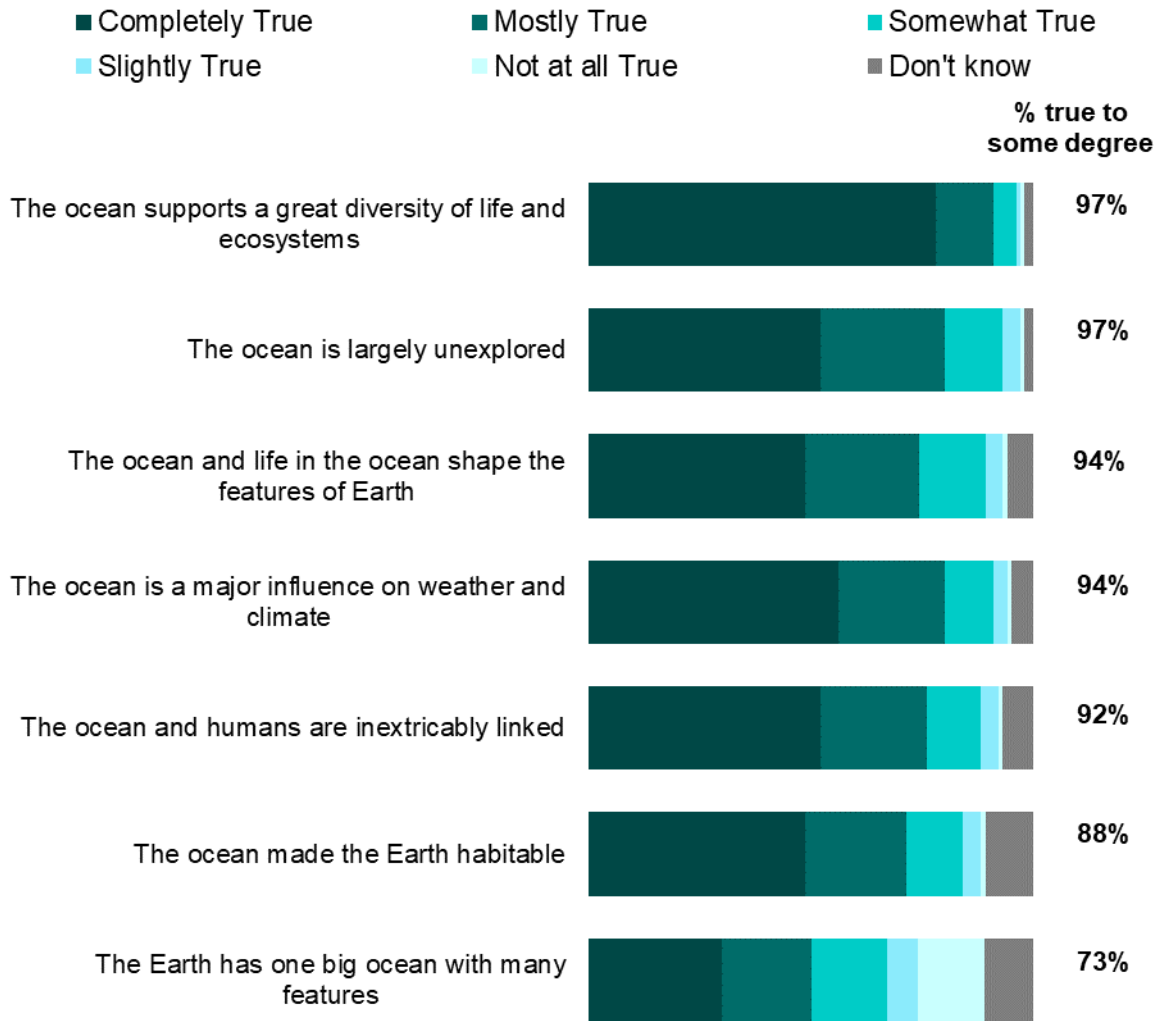
Although there are questions regarding an agreed definition of Ocean Literacy, seven principles related to people's understanding of the impact on the ocean and the ocean's impact on them have underpinned Ocean Literacy initiatives in recent years. Survey respondents were asked to indicate the extent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

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

There have been uplifts since 2021 in the proportion who believe the following are completely or mostly true: "The ocean supports a great diversity of life and ecosystems" (from 81% to 91%) and "The ocean is largely unexplored" (from 76% to 80%).

There have been declines in the proportion who believed "The ocean is a major influence on weather and climate" (from 93% to 80%), "The ocean and humans are inextricably linked" (from 81% to 76%) and "The ocean made the Earth habitable" (from 78% to 72%) are completely or mostly true.

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: 2,051

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

Principle	Completely True	Mostly True	Some what 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	78%	13%	5%	1%	1%	2%	97%
The ocean is largely unexplored	52%	28%	13%	4%	1%	2%	97%
The ocean and life in the ocean shape the features of Earth	49%	26%	15%	4%	1%	6%	94%
The ocean is a major influence on weather and climate	56%	24%	11%	3%	1%	5%	94%
The ocean made the Earth habitable	52%	24%	12%	4%	1%	7%	92%
The ocean and humans are inextricably linked	49%	23%	13%	4%	1%	11%	88%
The Earth has one big ocean with many features	30%	20%	17%	7%	15%	11%	73%

Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

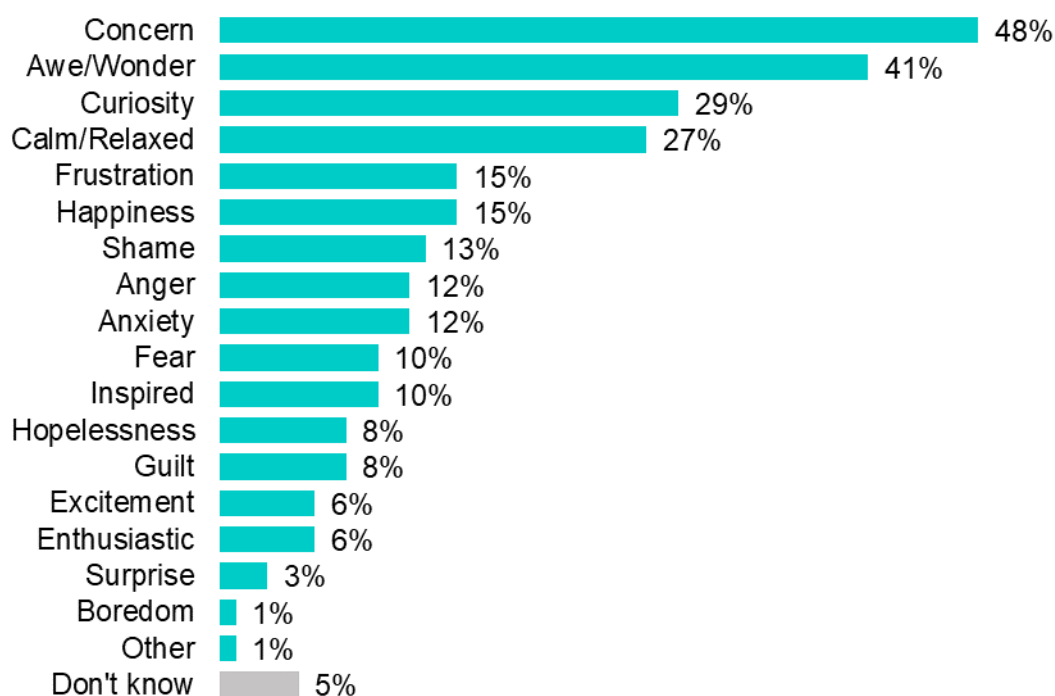
Emotional responses to the marine environment

Concern (48%) was the most commonly reported feeling when asked to think about the marine environment, closely followed by awe/wonder (41%). Curiosity (29%) and calm/relaxed (27%) were also frequently reported feelings (Figure 3).

Few respondents associated marine environments with boredom (1%) or surprise (3%).

The pattern of response was very similar to that found in 2021.

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: 2,051

Dimensions:

- Personal or emotional connection

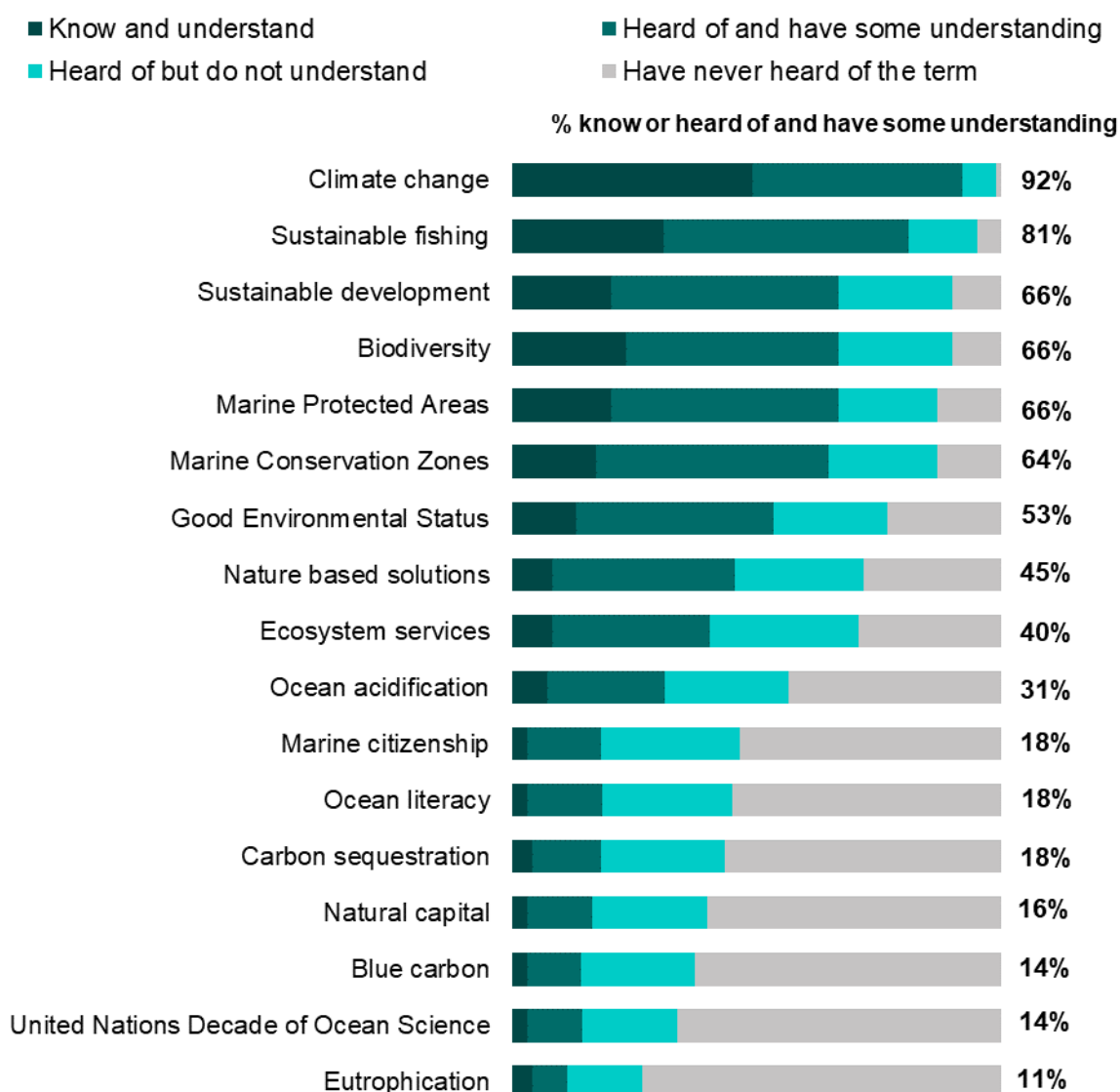
Knowledge of marine terms

As was the case in 2021, climate change (92%) and sustainable fishing (81%) were the terms most commonly known and understood (Figure 4).

Other familiar terms were sustainable development (66%), biodiversity (66%), Marine Protected Areas (66%) and Marine Conservation Zones (64%).

In contrast almost three quarters said they had never heard of eutrophication (72%). Other terms which the majority had never heard of were the United Nations Decade of Ocean Science (65%), blue carbon (62%), natural capital (59%), carbon sequestration (56%), Ocean Literacy (54%) and marine citizenship (53%).

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



Q7. Please indicate how familiar you are with each of the following terms.
Unweighted base: 2,051

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	49%	43%	7%	1%	92%
Sustainable fishing	31%	50%	14%	5%	81%
Sustainable development	20%	46%	23%	10%	66%
Biodiversity	23%	43%	23%	10%	66%
Marine Protected Areas	20%	46%	20%	13%	66%
Marine Conservation Zones	17%	47%	22%	13%	64%
Good Environmental Status	13%	40%	23%	23%	53%
Nature based solutions	8%	37%	26%	28%	45%
Ecosystem services	8%	32%	30%	29%	40%
Ocean acidification	7%	24%	25%	43%	31%
Marine citizenship	3%	15%	28%	53%	18%
Ocean literacy	3%	15%	26%	54%	18%
Carbon sequestration	4%	14%	25%	56%	18%
Natural capital	3%	13%	23%	59%	16%
Blue carbon	3%	11%	23%	62%	14%
United Nations Decade of Ocean Science	3%	11%	19%	65%	14%
Eutrophication	4%	7%	15%	72%	11%

Dimensions:

- Knowledge
- Awareness

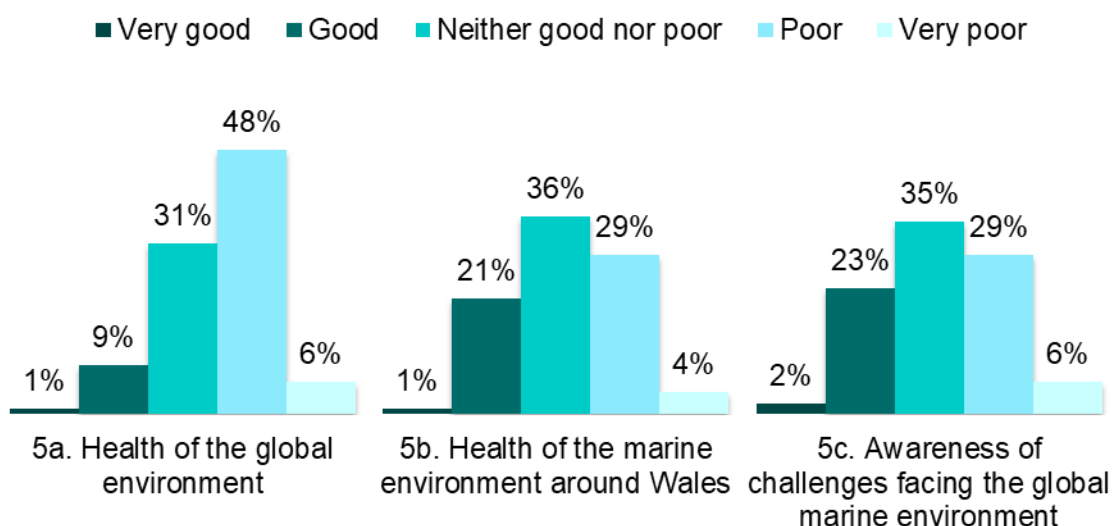
Perceptions of marine health and challenges

Fifty-four percent rated the health of the global marine environment as poor or very poor, while 10% rated it as good or very good (Figure 5a)

A lower proportion rated the health of the marine environment around Wales as poor or very poor (33%) compared to the global marine environment, and 23% rated it as good or very good (Figure 5b), which represents a decline on the 27% who did so in 2021. Although this is primarily due to a higher proportion stating neither good nor poor or don't know that a higher proportion stating poor or very poor (also 33% in 2021).

While 35% considered their awareness of the challenges facing the global marine environment to be poor or very poor (30% in 2021), 25% rated their awareness as good or very good (Figure 5c), which again represents a decline on the 32% who did so in 2021.

Figure 5: Perceptions of 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 Wales?

Q6. How would you rate your awareness of challenges facing the global marine environment?

Unweighted base: 2,051

Dimensions:

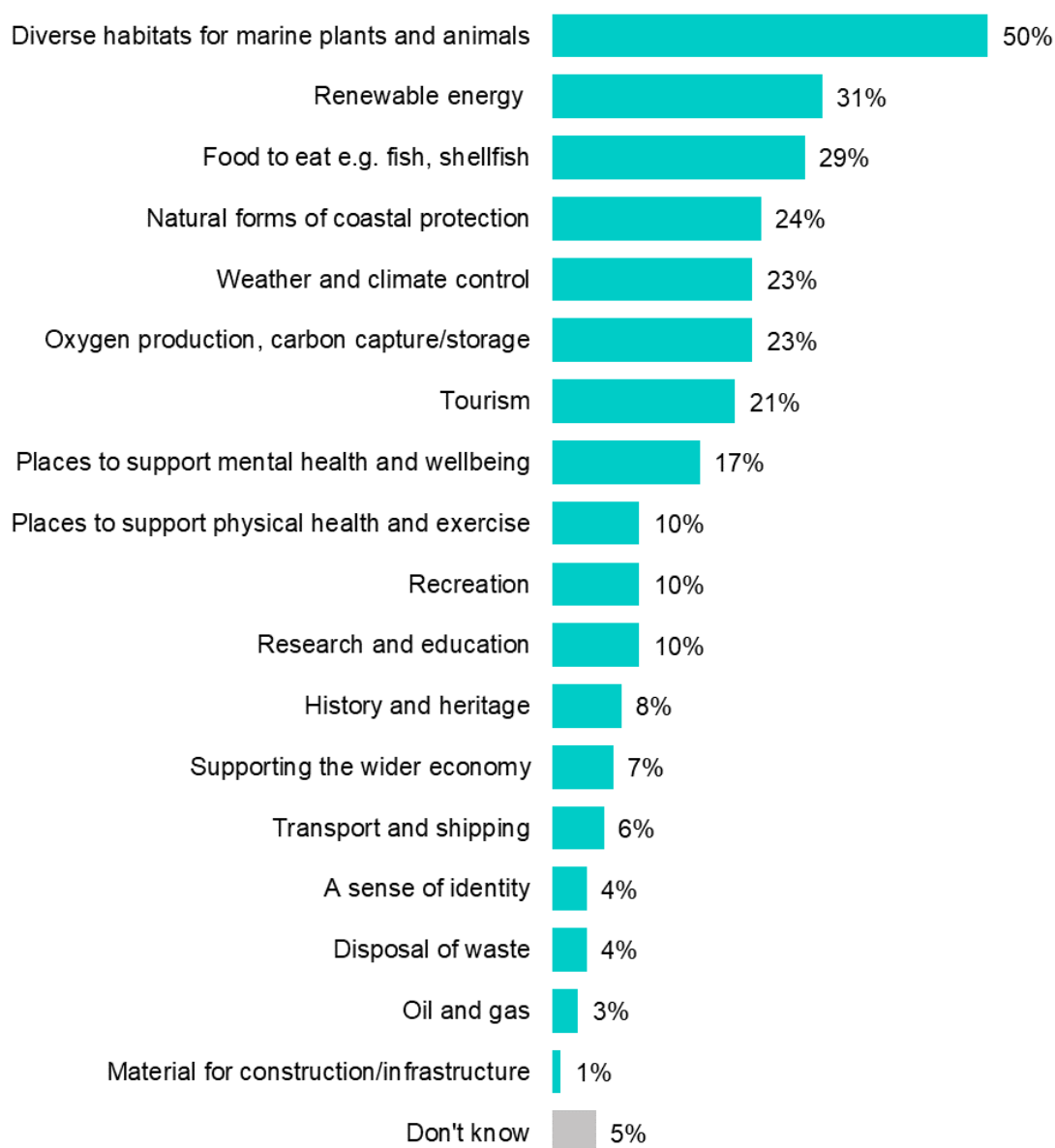
- Knowledge
- Awareness

Benefits of the marine environment

When asked what they thought the three most important benefits are of the marine environment in Wales (Figure 6), the top response was diverse habitats for marine plants and animals (50%) followed by renewable energy (31%) and food to eat (29%). In contrast, very few people felt that providing material for construction and infrastructure (1%), oil and gas (3%), disposal of waste (4%) and a sense of identity (4%) were important benefits.

These results are very much in line with those observed in 2021, although there has been an increase in the proportion who mentioned oxygen production/ carbon capture/storage (from 16% to 23%). Although it should be noted that this code was updated in the 2022 survey from carbon sequestration to carbon capture and storage, which may have impacted responses.

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 Wales?
Unweighted base: 2,051

Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

Salt marshes and seagrass meadows

Potential benefits of salt marshes and seagrass meadows

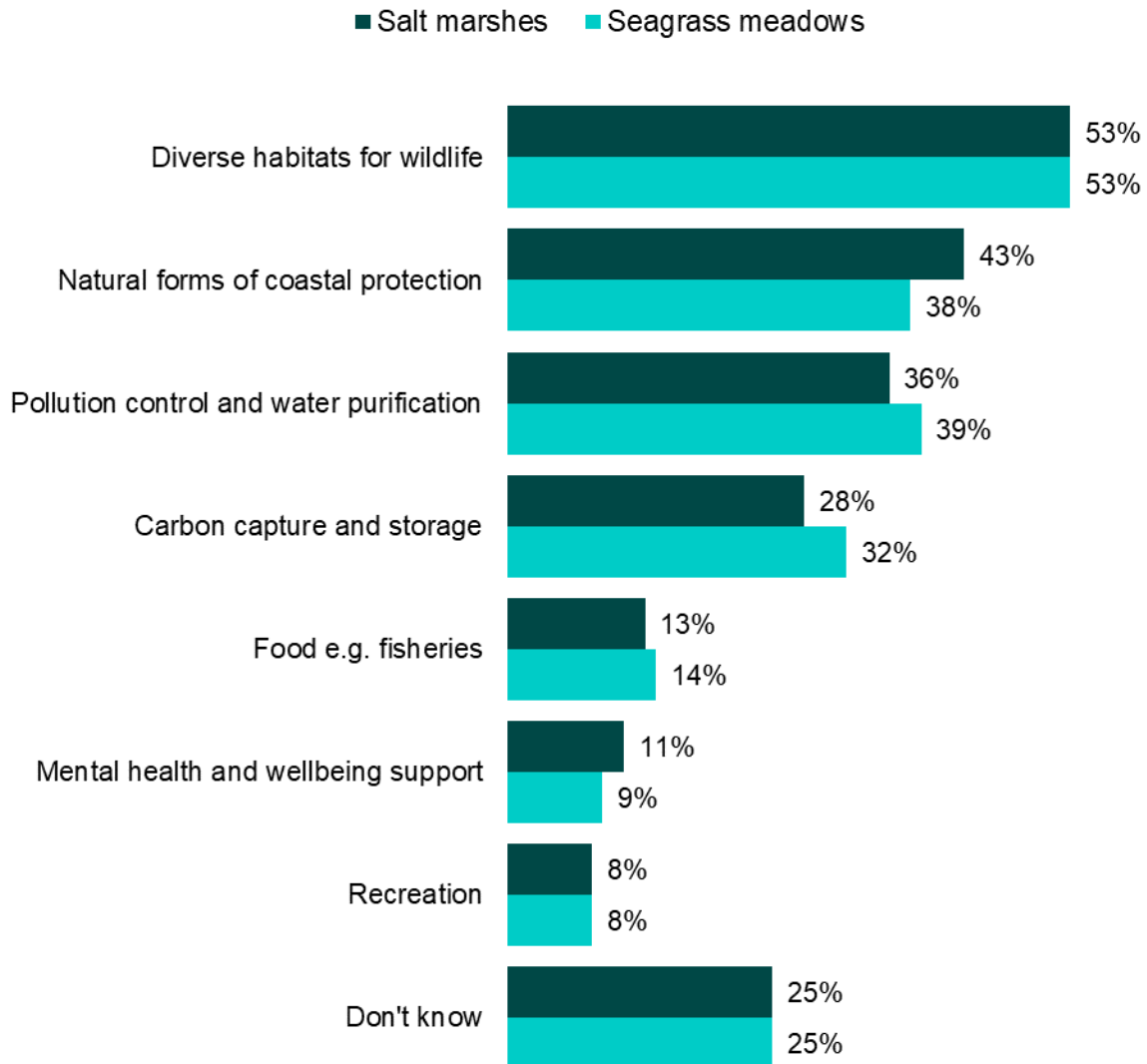
There was a new section added to the survey for 2022 which focused in greater detail on a selection of marine habitats and the potential benefits they can provide.

The pattern of response was very similar for both salt marshes and seagrass meadows, with over half (53% in both cases) feeling the diversity of habitats for wildlife is the most important benefit, followed by natural forms of coastal protection (43% for salt marshes and 38% for seagrass meadows), pollution control and water purification (36% for salt marshes and 39% for seagrass meadows) and carbon capture and storage (28% for salt marshes and 32% for seagrass meadows).

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

In both instances, a quarter (25%) indicated that they did not know what the benefits from these ecosystems are (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: 2,051

Dimensions:

- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

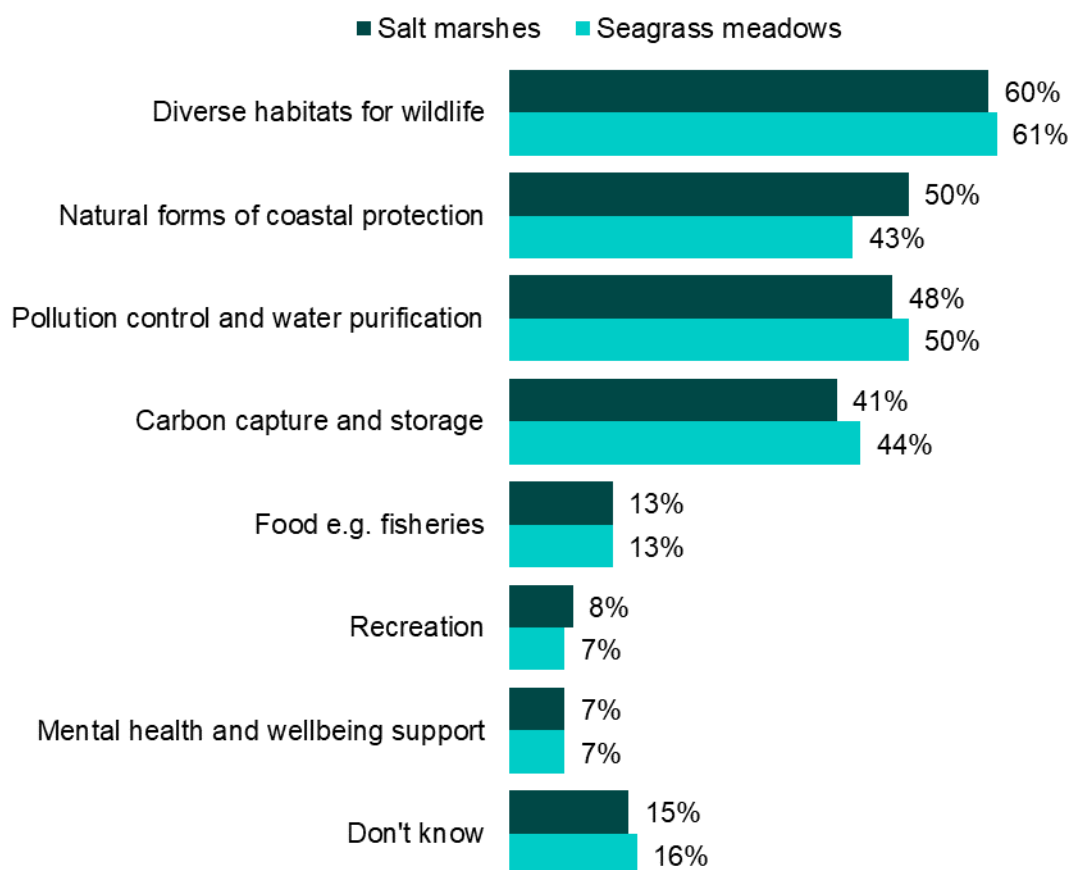
Restoring salt marshes and seagrass meadows

Seventeen percent of respondents said they were aware of efforts to restore salt marshes, and 16% 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 (60% for salt marshes and 61% for seagrass meadows), followed by natural forms of coastal protection (50% for salt marshes and 43% for seagrass meadows), pollution control and water purification (48% for salt marshes and 50% for seagrass meadows) and carbon capture and storage (41% for salt marshes and 44% 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: 2,051

Dimensions:

- Attitudes
- Knowledge
- Awareness

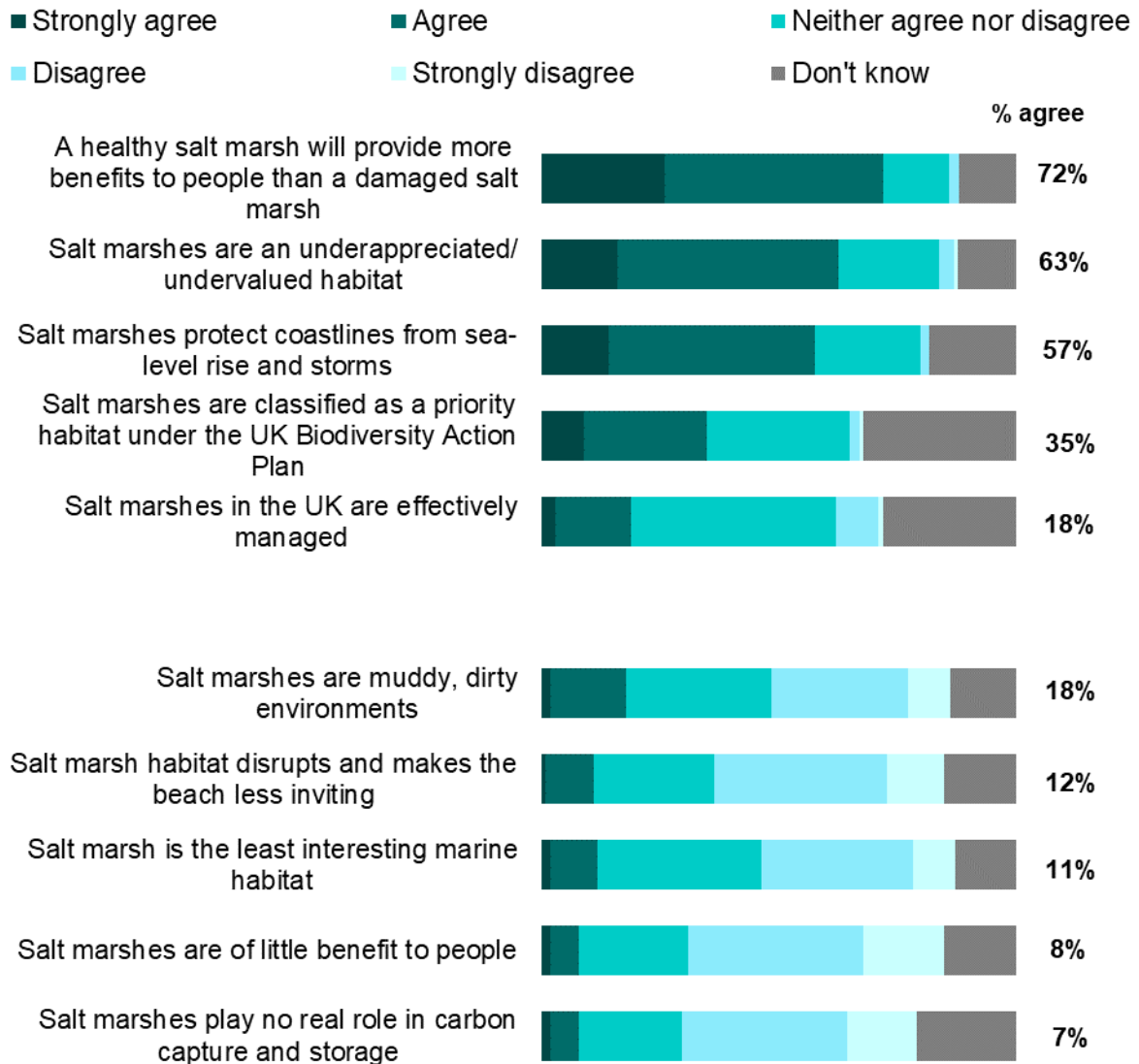
Views on salt marshes

Respondents were asked to rate their level of agreement with a range of statements relating to salt marshes which was a new question for the 2022 survey (Figure 9).

Agreement was strongest that a healthy salt marsh will provide more benefits to people than a damaged salt marsh (72%), followed by agreement that salt marshes are an underappreciated habitat (63%) and that salt marshes protect coastlines from sea-level rise and storms (57%).

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 (32%) and salt marshes in the UK being effectively managed (28%).

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: 2,051

Table 3: Views on salt marshes (weighted %)

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Summary: Agree
A healthy salt marsh will provide more benefits to people than a damaged salt marsh	26%	46%	14%	2%	<0.5%	12%	72%
Salt marshes are an underappreciated/ undervalued habitat	16%	46%	21%	3%	1%	12%	63%
Salt marshes protect coastlines from sea-level rise and storms	14%	43%	22%	2%	<0.5%	18%	57%
Salt marshes are classified as a priority habitat under the UK Biodiversity Action Plan	9%	26%	30%	2%	1%	32%	35%
Salt marshes in the UK are effectively managed	3%	16%	43%	9%	1%	28%	18%
Salt marshes are muddy, dirty environments	2%	16%	31%	29%	9%	14%	18%
Salt marsh habitat disrupts and makes the beach less inviting	1%	10%	25%	36%	12%	15%	12%
Salt marsh is the least interesting marine habitat	2%	10%	35%	32%	9%	13%	11%
Salt marshes are of little benefit to people	2%	6%	23%	37%	17%	15%	8%
Salt marshes play no real role in carbon capture and storage	2%	6%	22%	35%	15%	21%	7%

Dimensions:

- Attitudes
- Knowledge
- Awareness

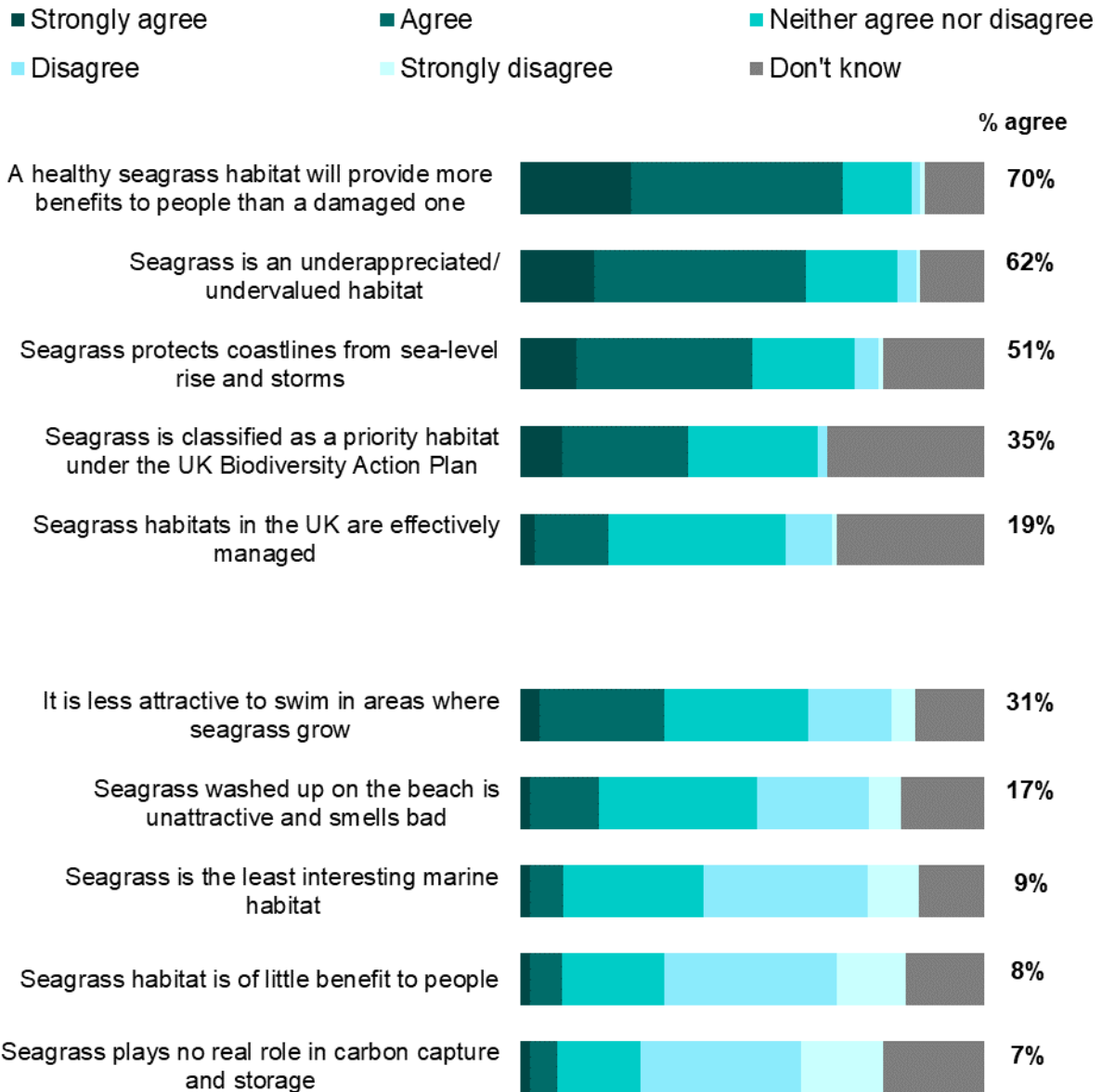
Views on seagrass meadows

Respondents were asked to rate their level of agreement with a range of statements relating to seagrass meadows (Figure 10). Again, this was a new question for the 2022 survey.

As with salt marshes, agreement was strongest that a healthy seagrass habitat will provide more benefits to people than a damaged seagrass meadow (70%), followed by agreement that seagrass meadows are an underappreciated habitat (62%) and that seagrass meadows protect coastlines from sea-level rise and storms (51%).

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 (34%) and seagrass meadows in the UK being effectively managed (32%). 31% agreed that it is less attractive to swim in seagrass habitats.

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: 2,051

Table 4: Views on seagrass meadows (weighted %)

Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Summary: Agree
A healthy seagrass habitat will provide more benefits to people than a damaged seagrass habitat	24%	46%	15%	2%	1%	13%	70%
Seagrass is an underappreciated/ undervalued habitat	16%	46%	20%	4%	1%	14%	62%
Seagrass protects coastlines from sea-level rise and storms	12%	38%	22%	5%	1%	22%	51%
Seagrass is classified as a priority habitat under the UK Biodiversity Action Plan	9%	27%	28%	2%	<0.5%	34%	35%
Seagrass habitats in the UK are effectively managed	3%	16%	38%	10%	1%	32%	19%
It is less attractive to swim in areas where seagrass grow	4%	27%	31%	18%	5%	15%	31%
Seagrass washed up on the beach is unattractive and smells bad	2%	15%	34%	24%	7%	18%	17%
Seagrass is the least interesting marine habitat	2%	7%	30%	35%	11%	14%	9%
Seagrass habitat is of little benefit to people	2%	7%	22%	37%	15%	17%	8%
Seagrass plays no real role in carbon capture and storage	2%	6%	18%	35%	18%	22%	7%

Dimensions:

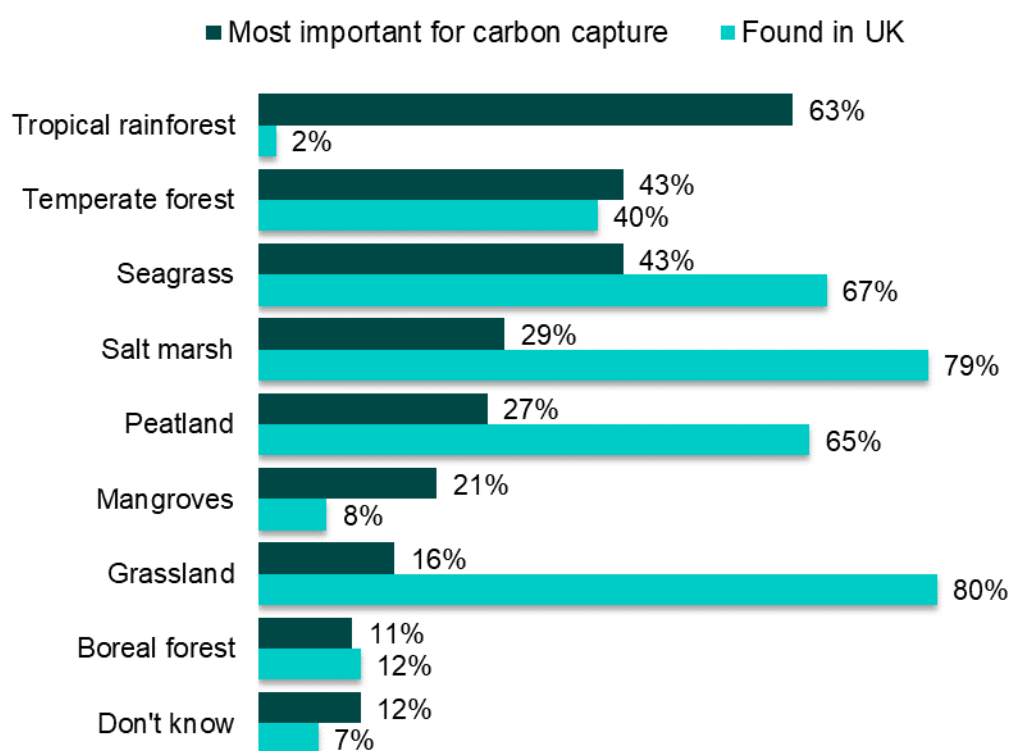
- Attitudes
- Knowledge
- Awareness

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 indicate which three they thought to be the most important in relation to carbon capture (Figure 11). Tropical rainforest was regarded as the most important (63%), followed by temperate forests and seagrass (both 43%).

They were also asked which habitats they believe are found in the UK (Figure 11), and the most commonly mentioned were grassland (80%), salt marsh (79%), seagrass (67%) and peatland (65%).

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 U.K.?

Unweighted base: 2,051

Dimensions:

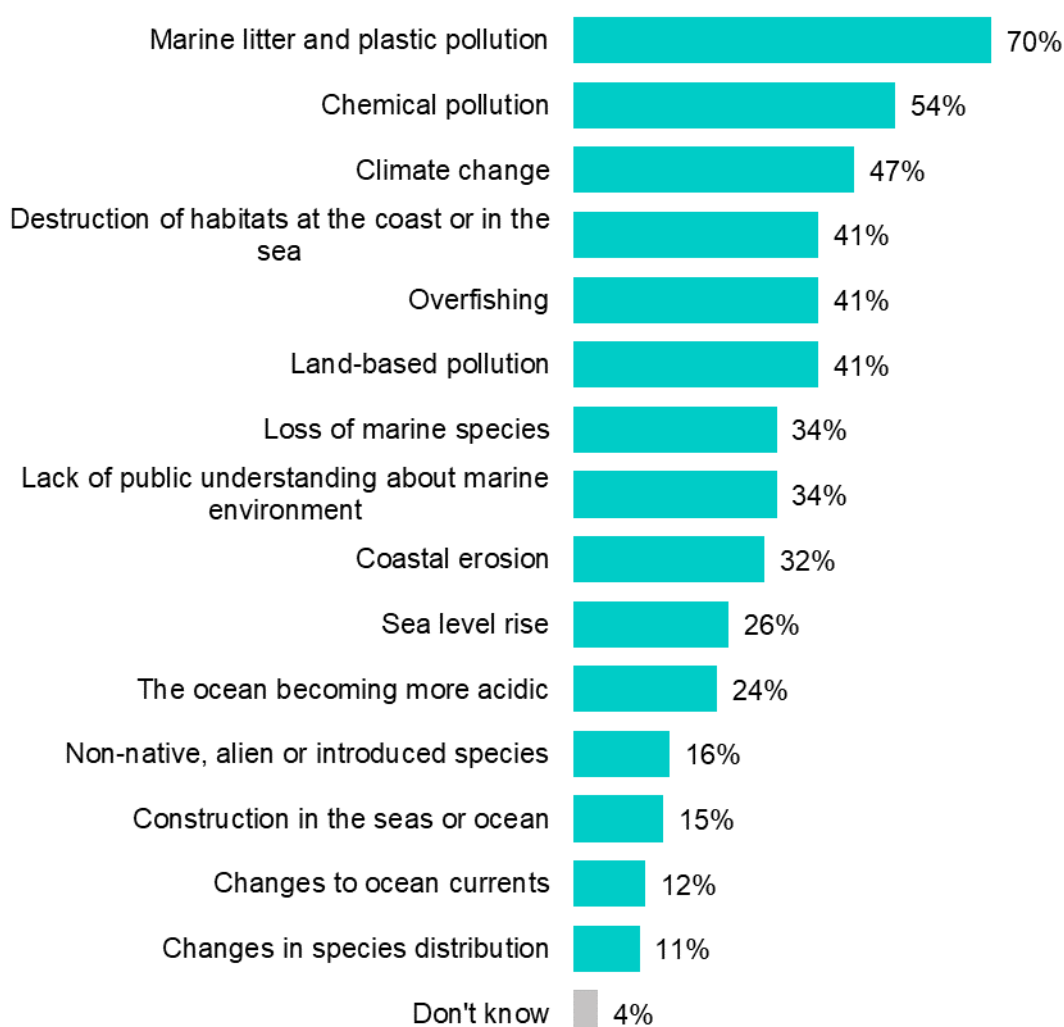
- Personal or emotional connection
- Attitudes
- Knowledge
- Awareness

Threats to the marine environment

Respondents were asked what they thought posed the most threat to the marine environment in Wales (Figure 12). Marine litter and plastic pollution was the pressure most commonly chosen (70%), although to a lesser extent than was the case in 2021 (76%), whilst chemical pollution (54%) and climate change (47%) also ranked highly.

As was the case in 2021, pressures which were least likely to be selected as posing a threat to the marine environment were changes in species distribution (11%), changes to ocean currents (12%), construction in the seas or ocean (15%) and non-native, alien or introduced species (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 Wales?
Unweighted base: 2,051

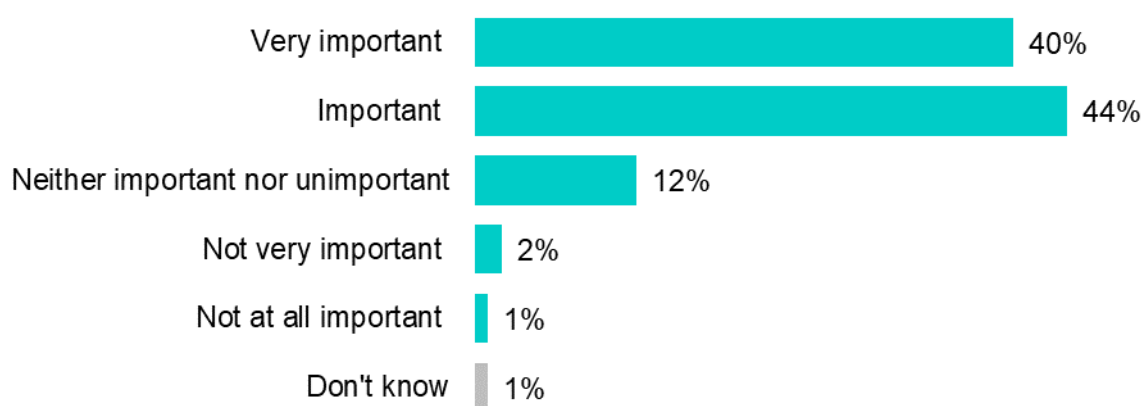
Dimensions:

- Attitudes
- Knowledge
- Awareness

Responding to threats to the marine environment

Eighty-three percent said that protecting the marine environment is very important or important to them personally, a decline on the 87% who did so in 2021. Only 3% said that is 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 you personally?
Unweighted base: 2,051

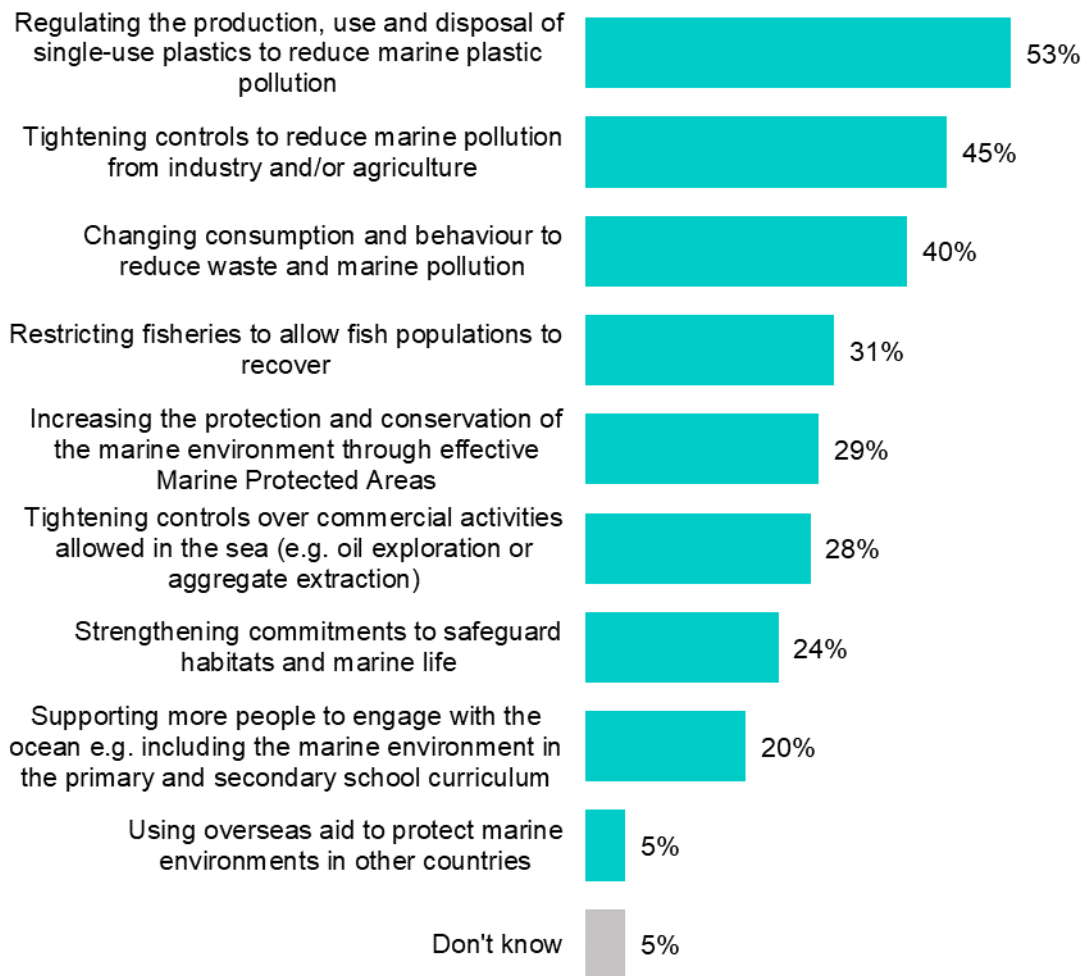
Dimensions:

- Attitudes
- Knowledge
- Awareness

A range of activities addressing other issues affecting the marine environment (i.e. non ocean climate issues) in Wales 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 (45%) 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%). These results largely reflect those in 2021.

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



Q13. The following activities all address other issues affecting the marine environment in Wales. In your opinion, which three do you think are the most important?

Unweighted base: 2,051

Dimensions:

- Attitudes
- Knowledge
- Awareness

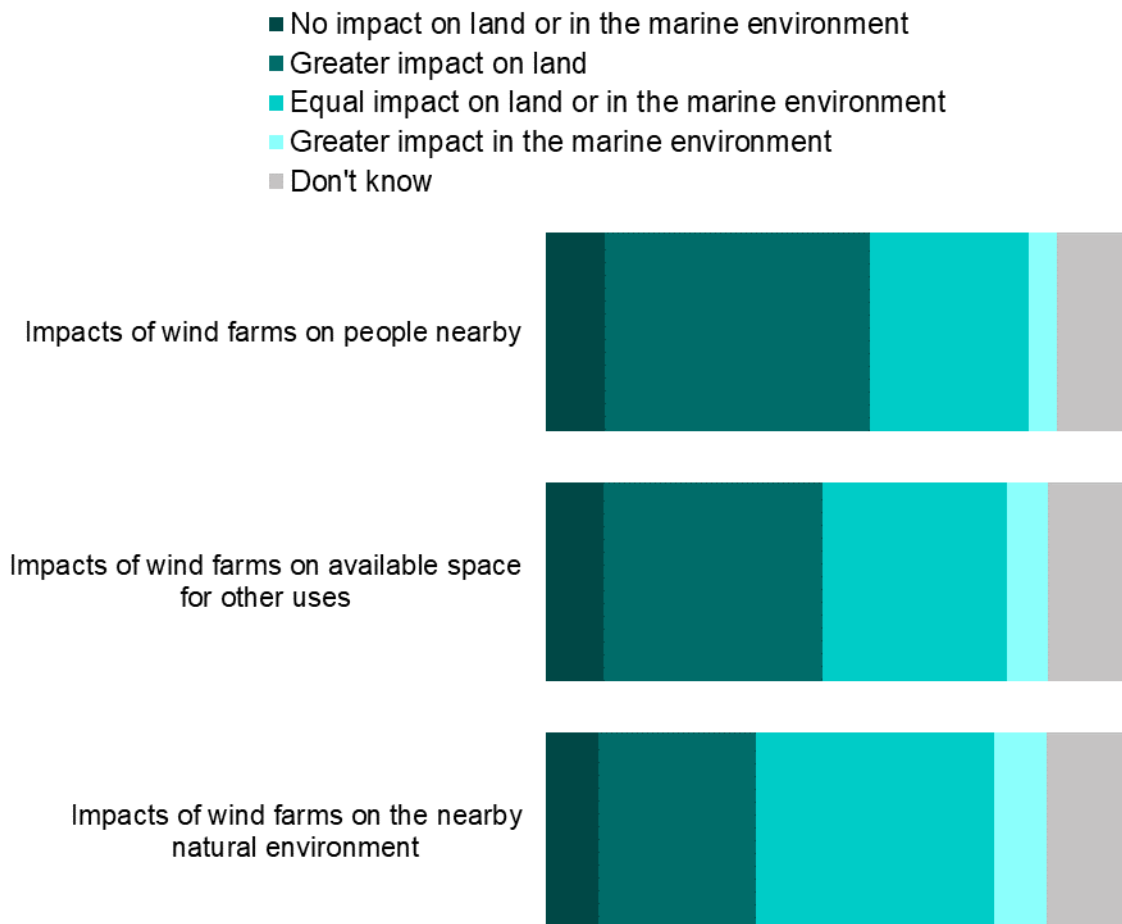
Views on wind farms

One in ten believed that wind farms have no impact on the land or in the marine environment in terms of people nearby (10%), the available space for other use (10%) and the nearby natural environment (9%) (Figure 15). This was based on a new question added to the 2022 survey.

Forty-five percent felt there is a greater impact on land in terms of people nearby, 38% in terms of space available for other uses, and 27% 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 (5%), 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: 2,051

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	10%	45%	27%	5%	12%
Impacts of wind farms on available space for other uses	10%	38%	32%	7%	14%
Impacts of wind farms on the nearby natural environment	9%	27%	41%	9%	14%

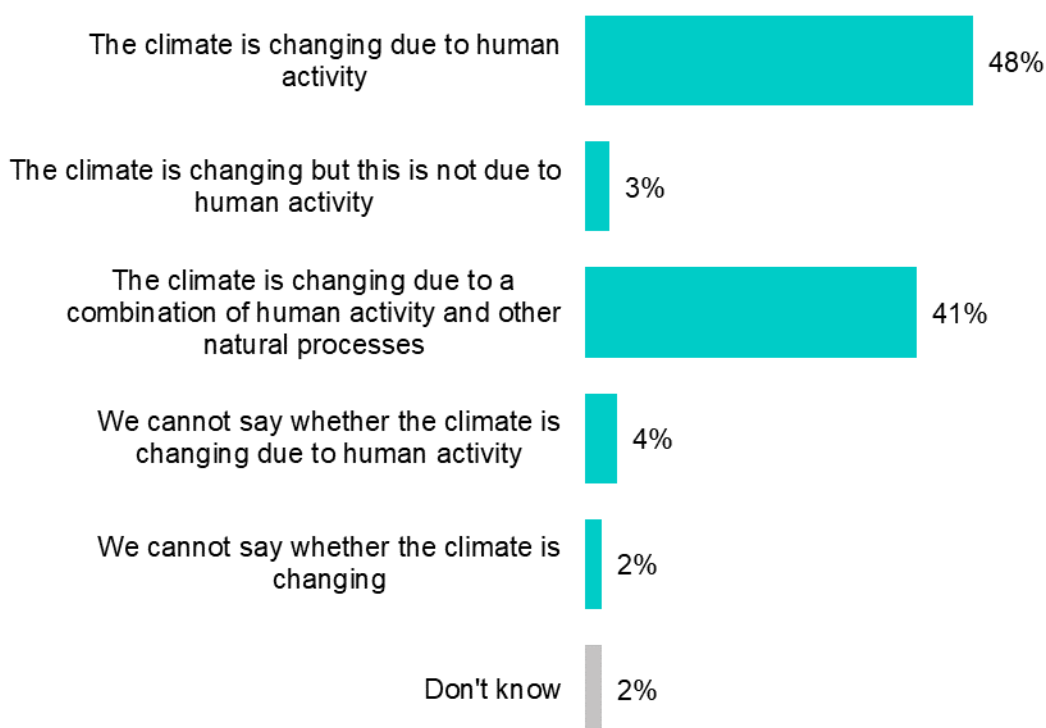
Dimensions:

- Attitudes
- Knowledge
- Awareness

Attitudes to climate change and marine habitats

When asked about their views on climate change, the vast majority said the climate is changing (92%). However, views were split on causes of climate change with 48% saying this is due to human activity, 41% it is due to both 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). There has been no change in views since 2021.

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 comes closest to your view?

Unweighted base: 2,051

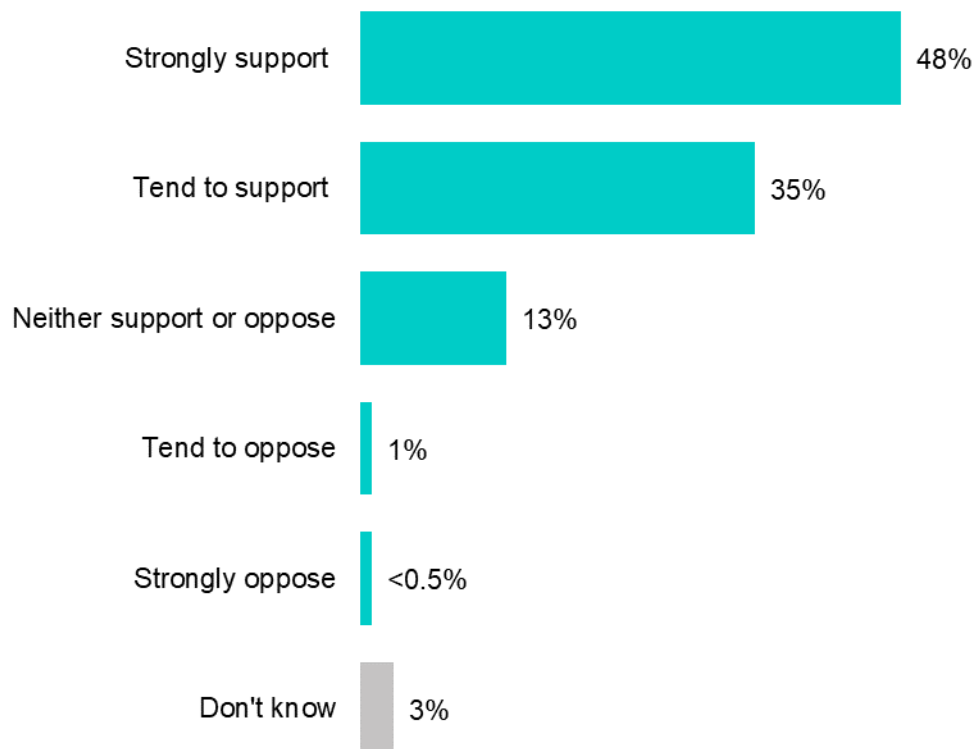
Dimensions:

- 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 Wales (Figure 17). This was a new question added to the survey for 2022.

Eighty-three percent supported the creation of Marine Protected Areas in Wales, including 48% 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 Wales?

Unweighted base: 2,051

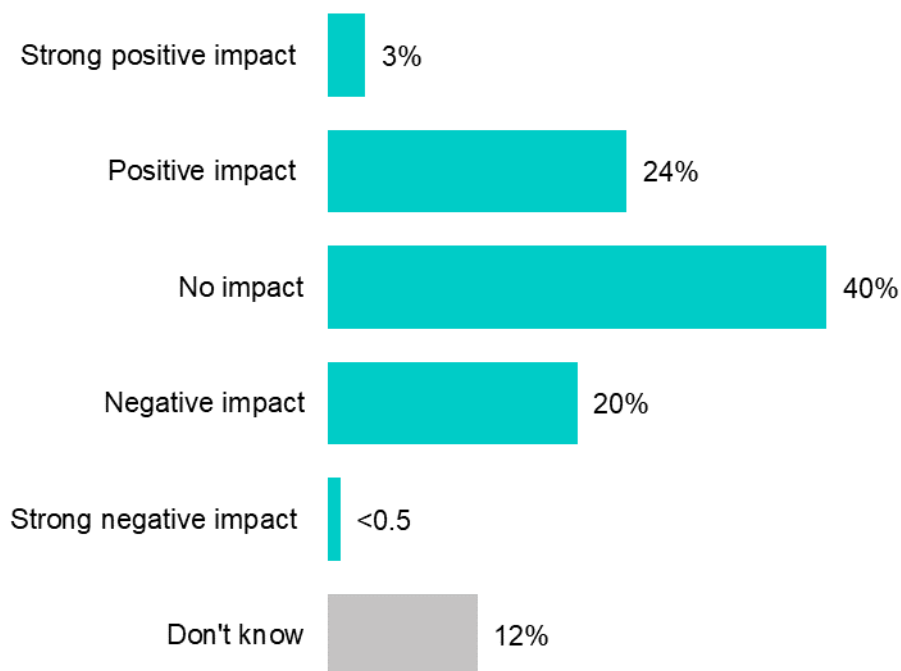
Dimensions:

- Attitudes
- Knowledge

Lifestyle impacts & changes

Overall, 48% thought their lifestyle has an impact on the marine environment. Slightly more thought that their lifestyle had a positive impact (27%) than that it had a negative impact (21%) (Figure 18), although this does represent a decline on the 30% who felt their lifestyle had a positive impact in 2021. 40% thought their lifestyle had no impact on the marine environment which is similar to the level seen in 2021 (39%).

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 Wales?

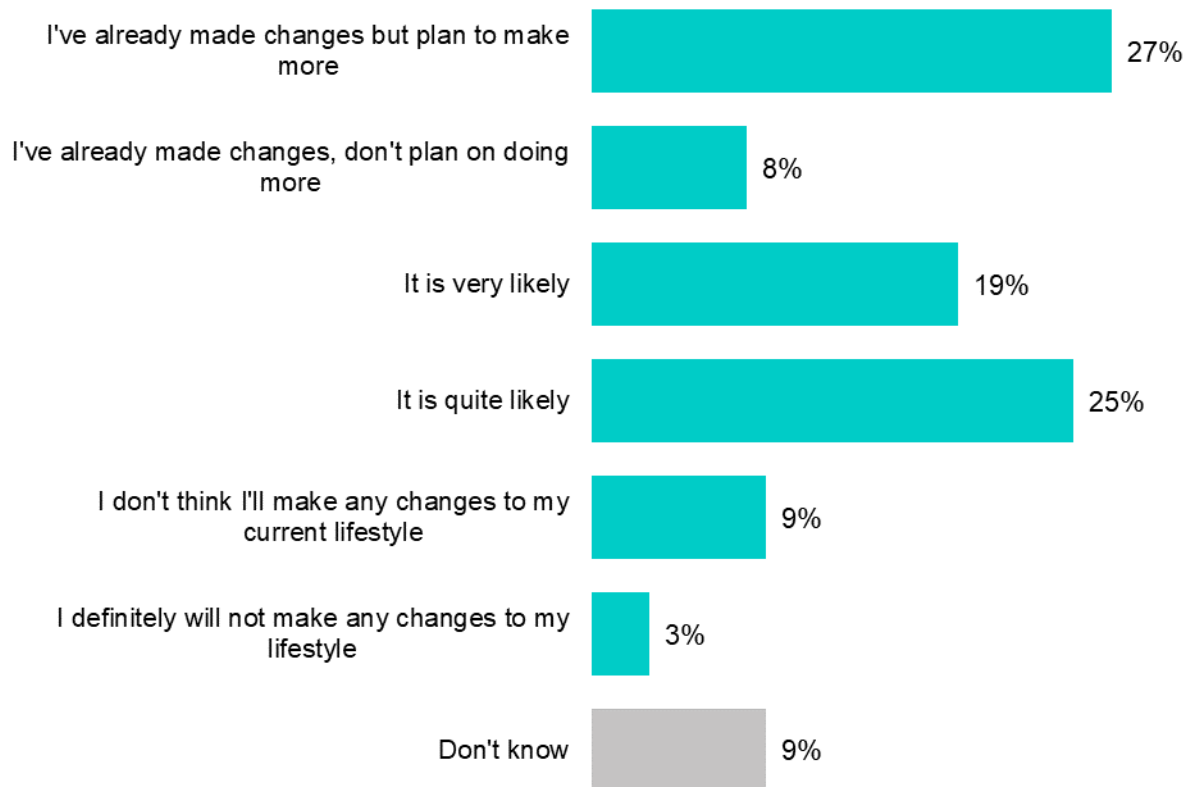
Unweighted base: 2,051

Dimensions:

- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

Twenty-seven percent said they've already made changes but plan on doing more, whilst 44% said it is quite or very likely they will make changes. 8% said they've already made changes but don't plan on doing any more. Only 12% said they will not or do not think they will make changes to their current lifestyle within the next 12 months in order to protect the marine environment in Wales (Figure 19). The pattern of results is very similar to 2021.

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



Q22. Within the next 12 months, do you plan on making changes to your lifestyle to protect the marine environment in Wales?
Unweighted base: 2,051

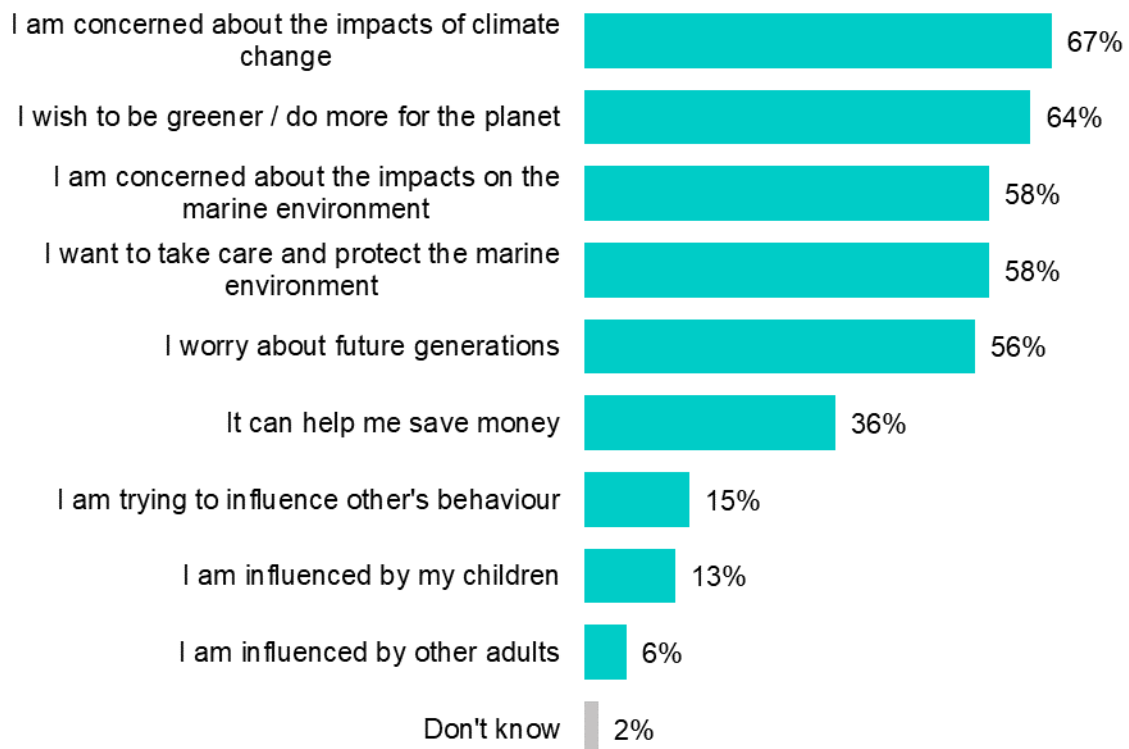
Dimensions:

- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

The top reasons for making or planning lifestyle changes (Figure 20) were concern over climate change (67%), a desire to be greener (64%), concerns about impacts on the marine environment (58%), a desire to care and protect (58%) and worry about future generations (56%).

There have been declines since 2021 in the proportion who want to take care of the marine environment (from 64% to 58%). In contrast there has been an increase in the proportion who feel it can help them save money (from 31% to 36%).

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



Q24. Is this because...?

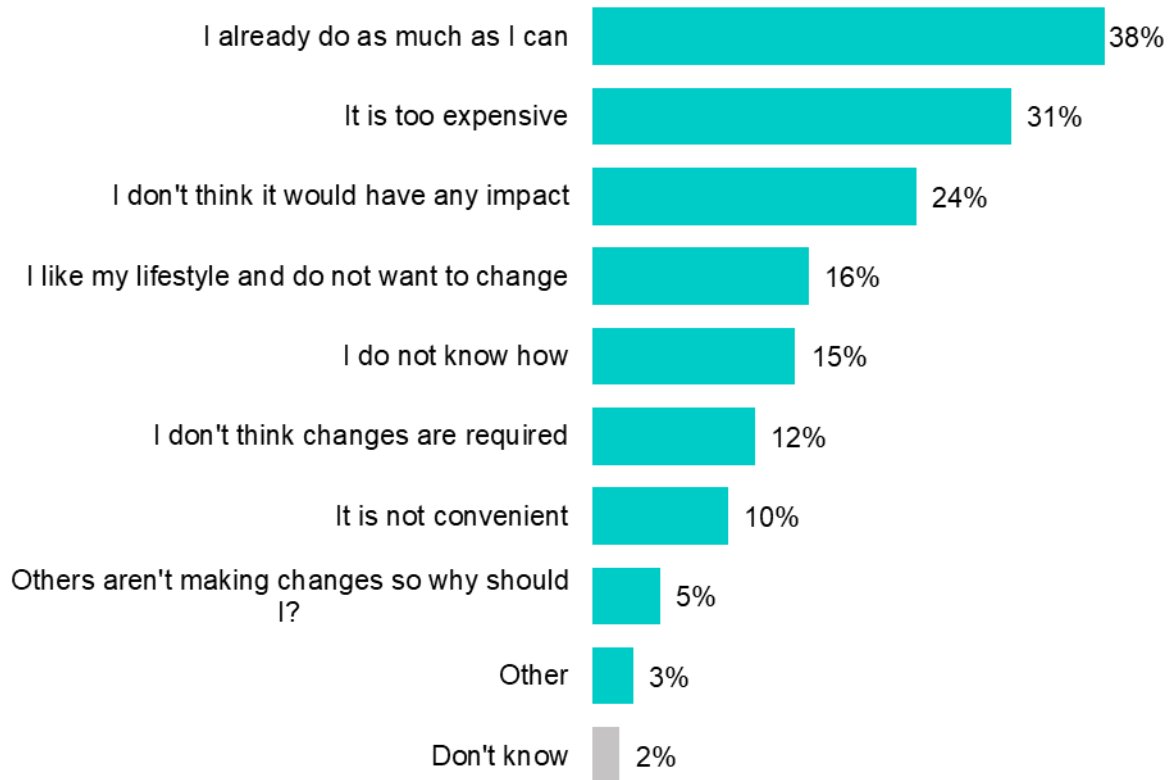
Unweighted base: where have made or plan to make changes: 1,640

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 (31%) and thinking it would not have an impact (24%).

Figure 21: Reasons for not making or planning to make changes to lifestyle (weighted %)



Q23. Is this because...?

Unweighted base: where do not plan to make changes: 238

Dimensions:

- Activism
- Behaviour
- Attitudes
- Knowledge
- Awareness

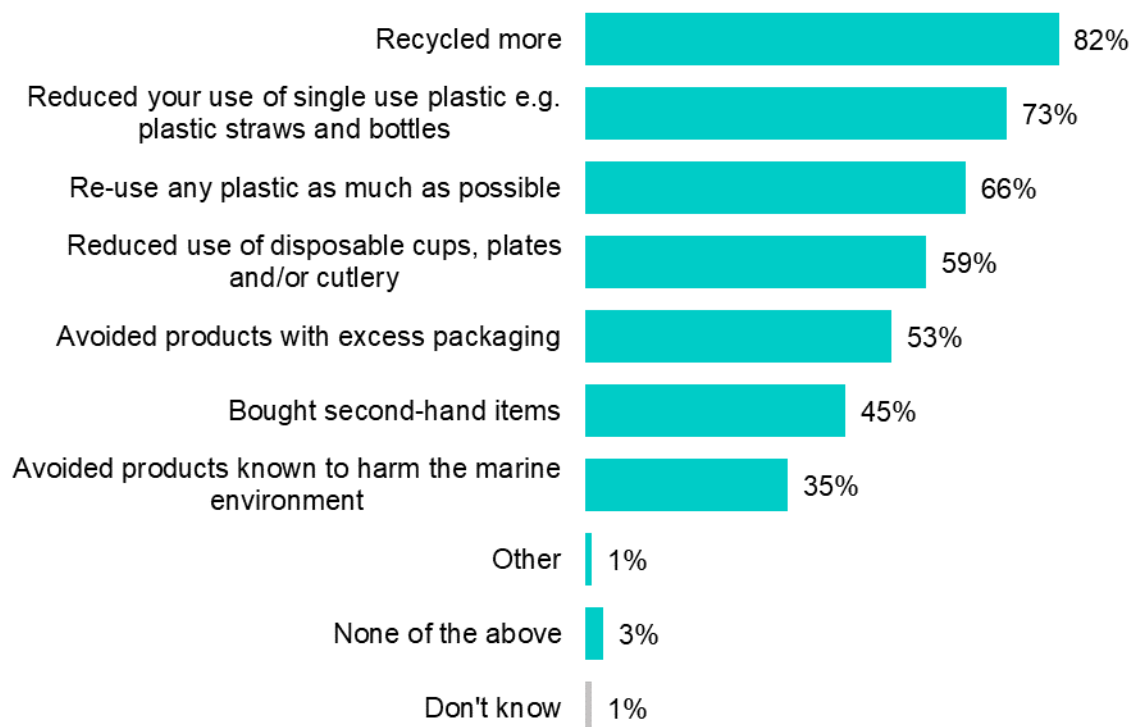
Purchasing and packaging actions

The most common activity undertaken in relation to purchases and packaging in the last 12 months was recycling more (82%) (Figure 22). A high proportion also said they had reduced single use plastics (73%) and had re-used plastic as much as possible (66%).

The least common activities were avoiding products known to harm the marine environment (35%) and buying second-hand items (45%) although these were still undertaken by more than a third of respondents.

There has been a decline in the proportion who reported recycling more (from 85% to 82%), and in the proportion who reported re-using any plastic as much as possible (from 70% to 66%), and an increase in the proportion who report buying second-hand items (from 40% to 45%).

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: 2,051

Dimensions:

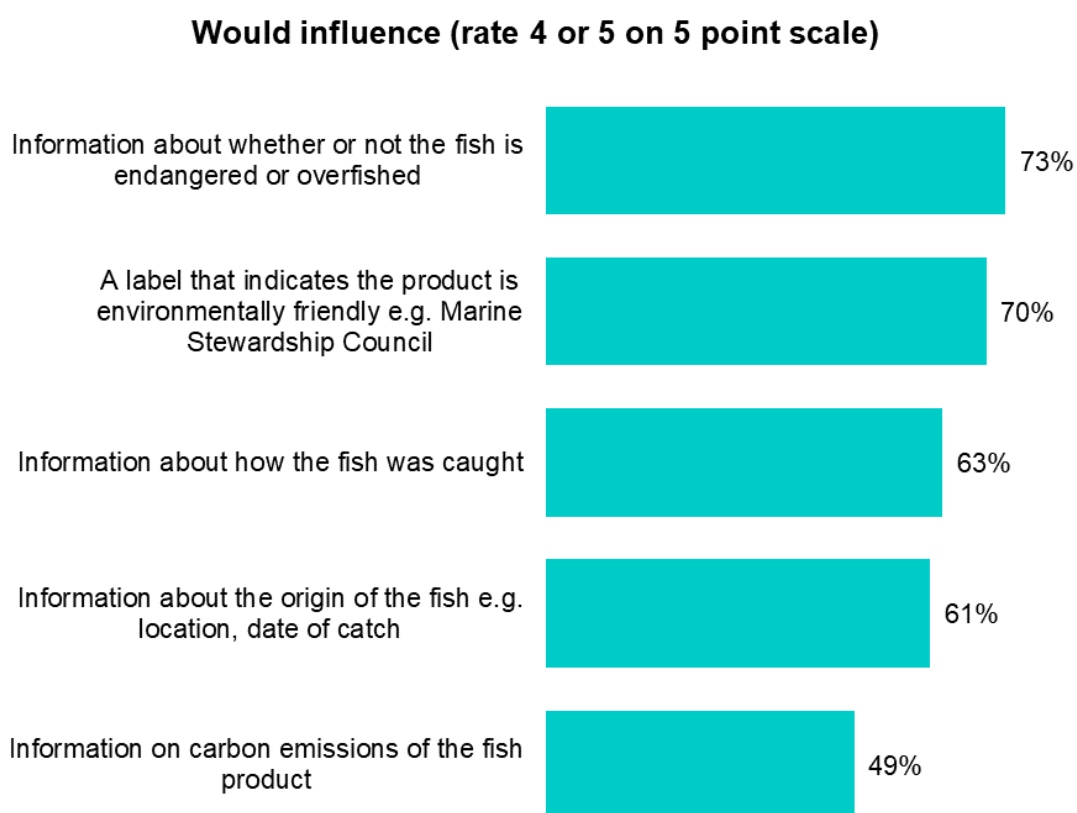
- Behaviour

Seafood purchasing actions

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

Of these, 73% 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 70% of people who bought seafood. Less significant, but still influencing the majority of people was information about how the fish was caught (63%) and the origin of the fish (61%). Information on carbon emissions of the fish product, which was a new statement in the 2022 survey, had the lowest influence at 49%.

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: 1,431

Dimensions:

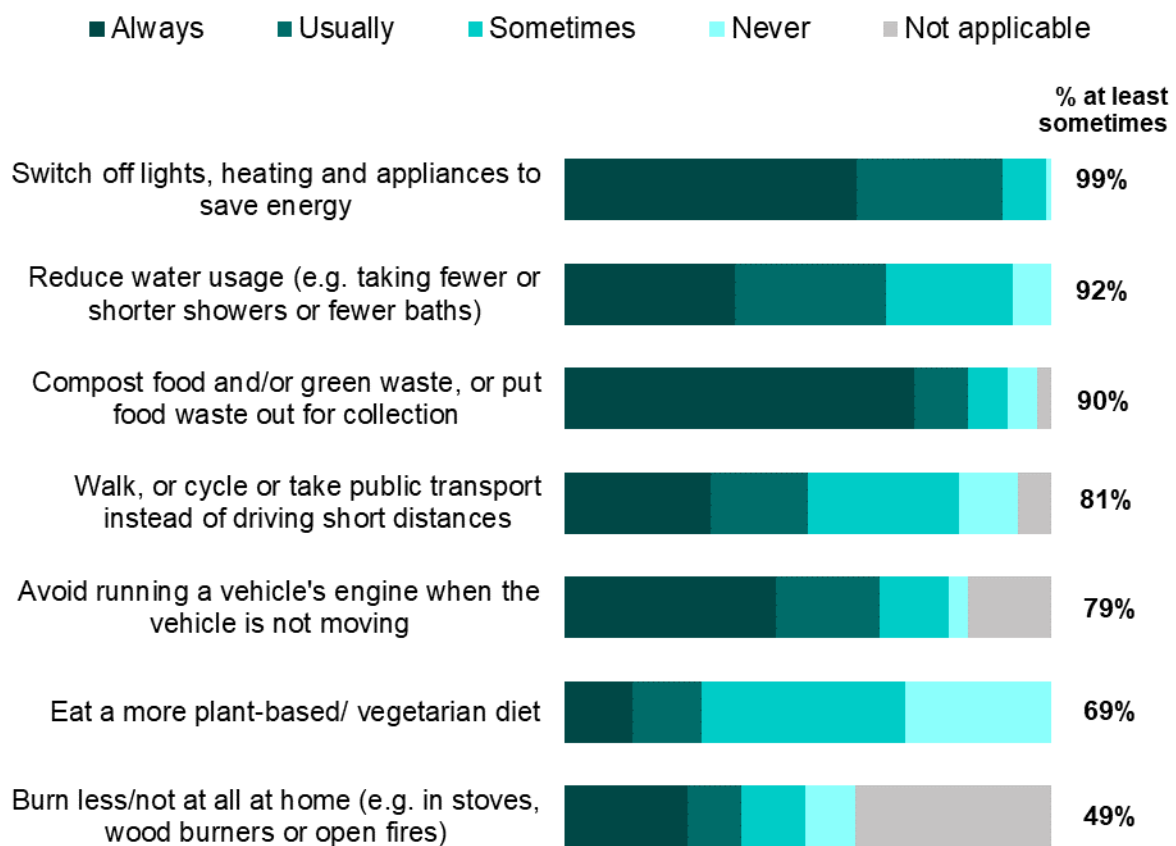
- Behaviour
- Communication
- Knowledge
- Awareness

Food, energy and transport actions

Ninety-nine percent switch off lights, heating and appliances to save energy, 92% reduce water usage and 90% compost food and/or green waste or put food waste out for collection (Figure 24). The latter represents an uplift on the 80% who reported composting in 2021.

There has been a decline in the proportion who reported avoiding driving short distances, from 90% in 2021, to 81% in the latest survey, and in the proportion who reported avoiding running an engine unnecessarily (from 83% to 79%).

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: 2,051

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

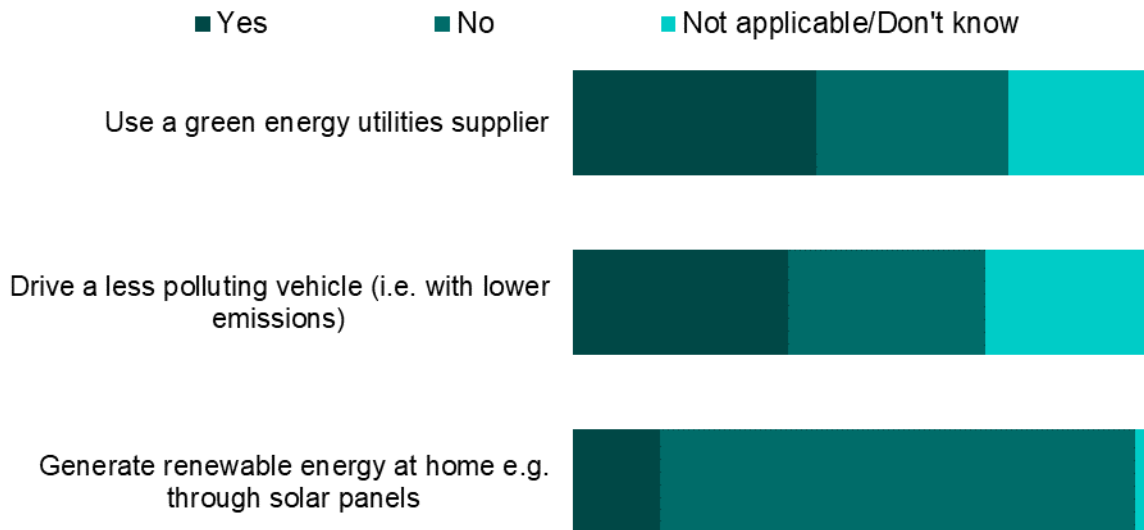
Action	Always	Usually	Sometimes	Never	Not applicable	Summary: At least sometimes
Switch off lights, heating and appliances to save energy	60%	30%	9%	1%	0%	99%
Reduce water usage (e.g. taking fewer or shorter showers or fewer baths)	35%	31%	26%	8%	0%	92%
Compost food and/or green waste, or put food waste out for collection	71%	11%	8%	6%	3%	90%
Walk, or cycle or take public transport instead of driving short distances	30%	20%	31%	12%	7%	81%
Avoid running a vehicle's engine when the vehicle is not moving	43%	21%	14%	4%	17%	79%
Eat a more plant-based/vegetarian diet	14%	14%	42%	30%	0%	69%
Burn less/not at all at home (e.g. in stoves, wood burners or open fires)	25%	11%	13%	10%	40%	49%

Dimensions:

- Behaviour
- Communication
- Knowledge
- Awareness

While 42% of people use green energy utilities suppliers and 37% drive less polluting vehicles, only 15% generate renewable energy at home (Figure 25). In 2021, 48% reported they use a green energy supplier.

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: 2,051

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

Action	Yes	No	Not applicable/Don't know
Use a green energy utilities supplier	42%	33%	25%
Drive a less polluting vehicle (i.e. with lower emissions)	37%	34%	29%
Generate renewable energy at home e.g. through solar panels	15%	82%	3%

Dimensions:

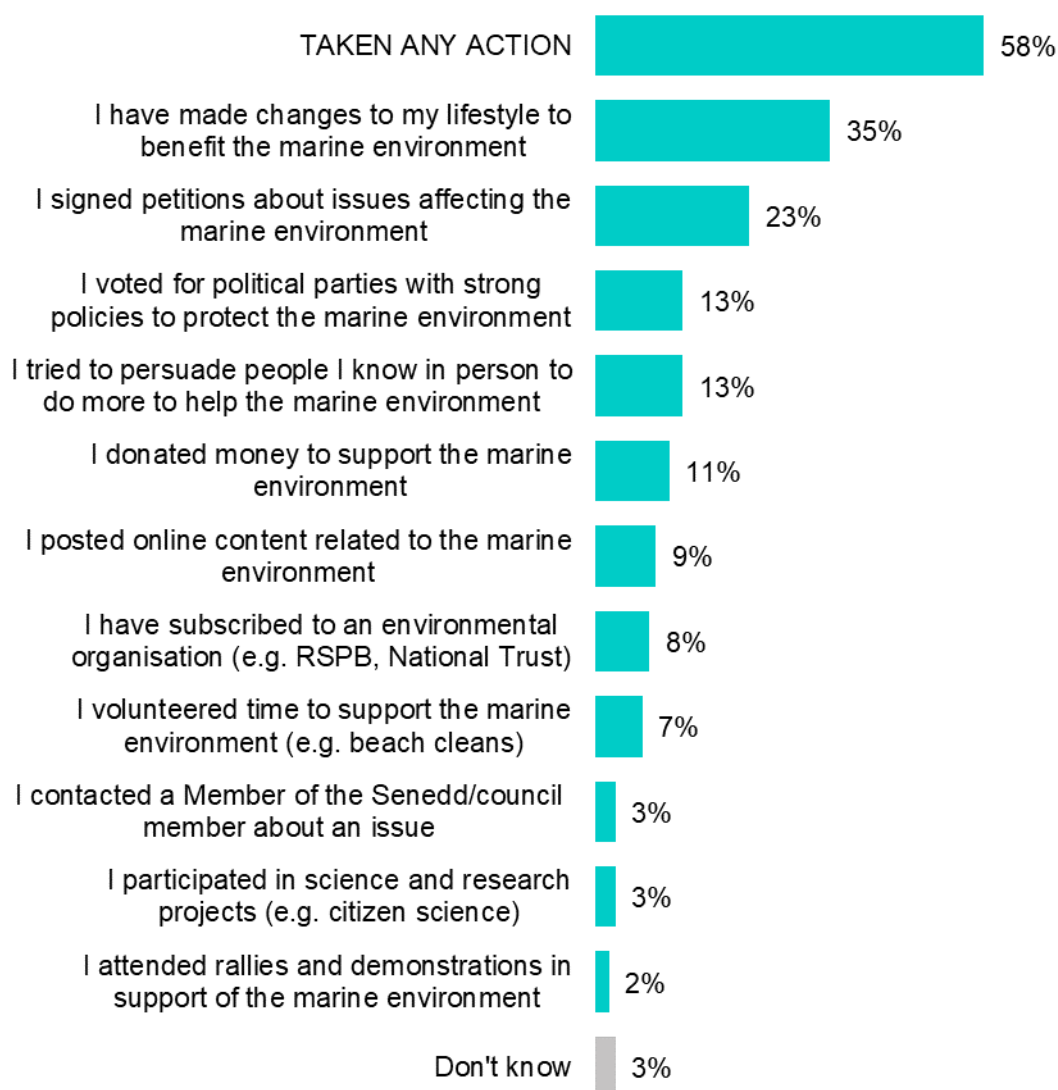
- Behaviour
- Communication
- Knowledge
- Awareness

Marine activism

Fifty-eight percent had taken at least one of the listed actions to protect the marine environment (Figure 26), a decline on the 63% who did so in 2021. The most common action people had undertaken was making lifestyle changes (35%) followed by signing petitions (23%).

Direct action in rallies or demonstrations (2%), involvement in citizen science (3%) or contacting elected representatives (3%) were the least undertaken actions.

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 Wales?

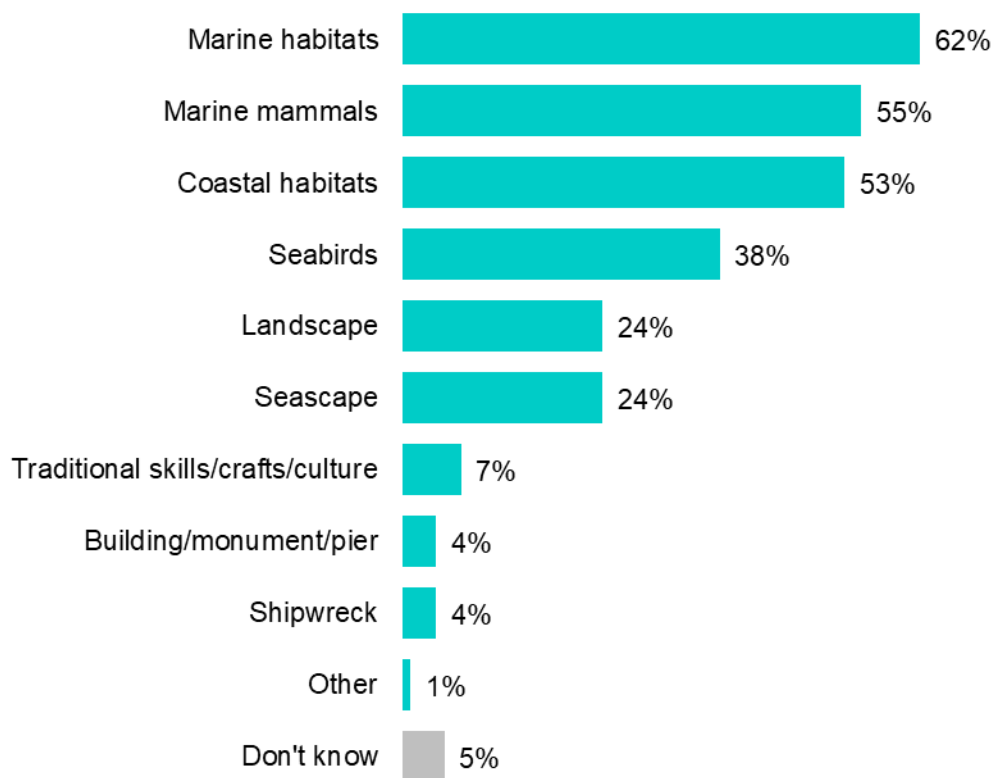
Unweighted base: 2,051

Dimensions:

- Activism
- Behaviour
- Attitudes

Where they had taken action to protect the marine environment, this was most commonly in relation to marine habitats (62%), followed by marine mammals (55%) and coastal habitats (53%) (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: 1,214

Dimensions:

- Activism
- Behaviour
- Attitudes

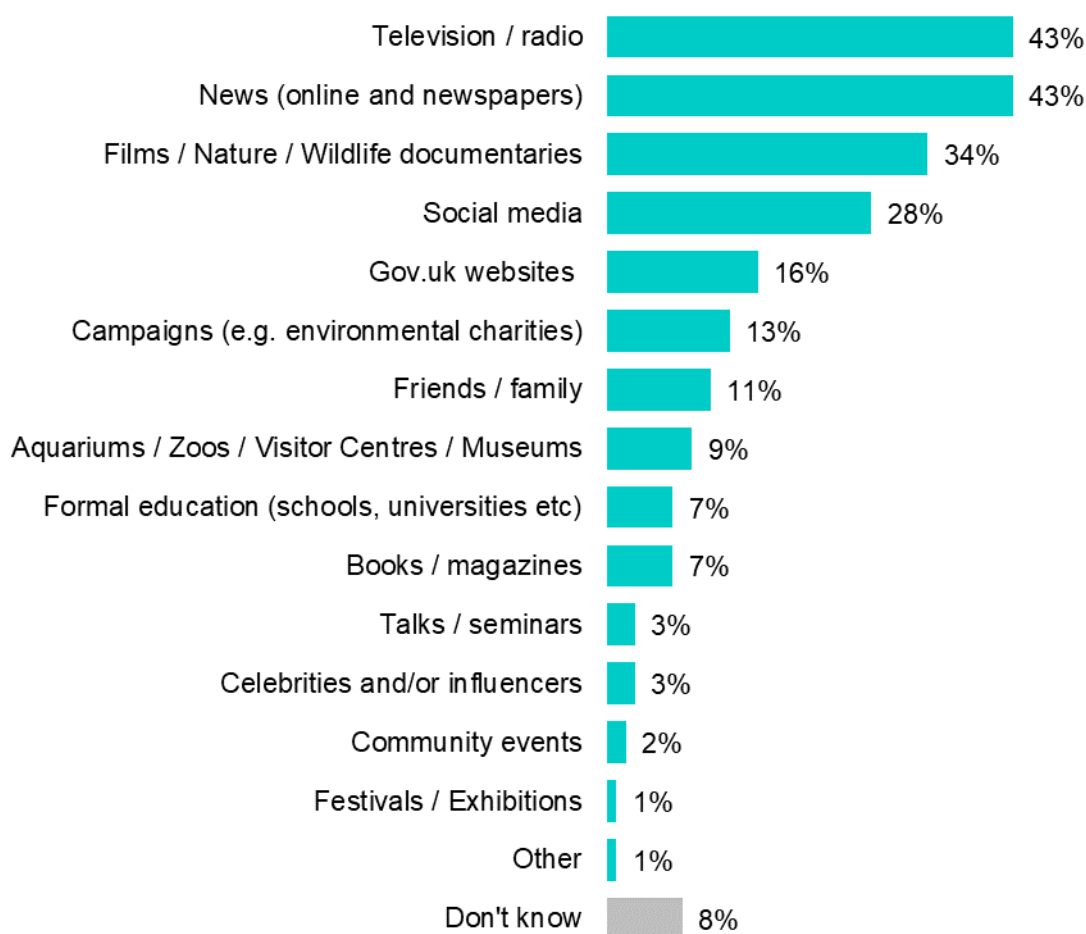
Communicating about the marine environment

The most common sources of knowledge/information about the marine environment in the last 12 months were TV and radio (43%), news (43%), films, nature and wildlife documentaries (34%) and social media (28%) (Figure 28).

Television/radio were mentioned at lower levels than was the case in 2021 (43% compared to 47%), as were films/documentaries (34% compared to 45%).

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

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



Q14. Thinking about the last 12 months, where has your knowledge/information about the marine environment in Wales mostly come from?
Unweighted base: 2,051

Dimensions:

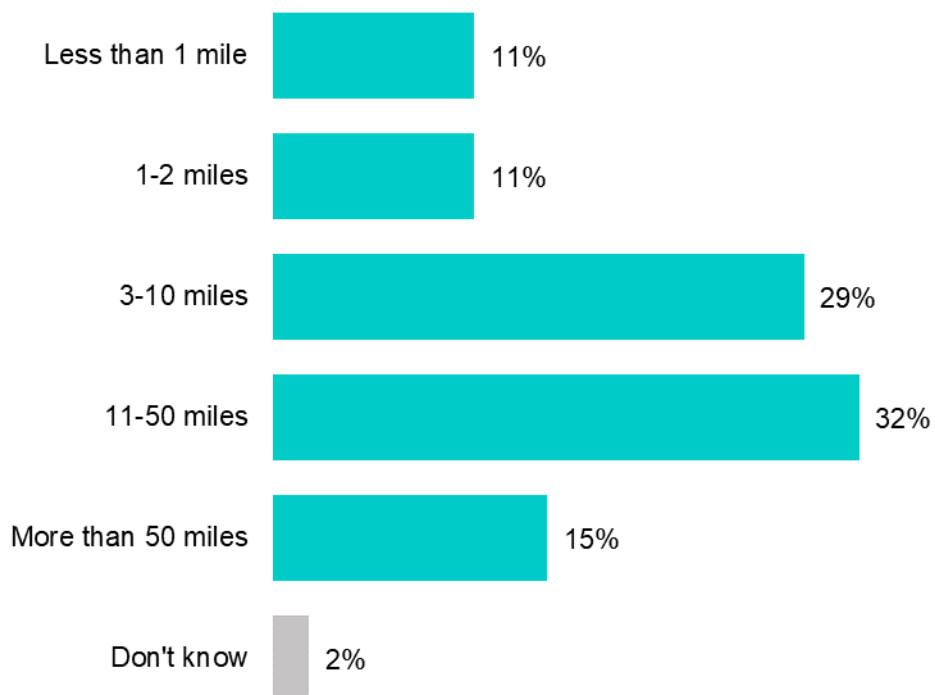
- Communication
- Knowledge
- Awareness

Visiting the marine environment

In the last 12 months, 60% had visited the marine environment, a marked increase on the 48% who reported doing so in 2021. 30% had not visited in the last 12 months and 8% had never visited.

Just under a quarter (22%) of respondents travelled up to 2 miles, with 29% travelling between 3 and 10 miles, and a third (32%) travelling between 11 and 50 miles. Just 15% travelled more than 50 miles (Figure 29).

Figure 29: Distance travelled for visit (weighted %)



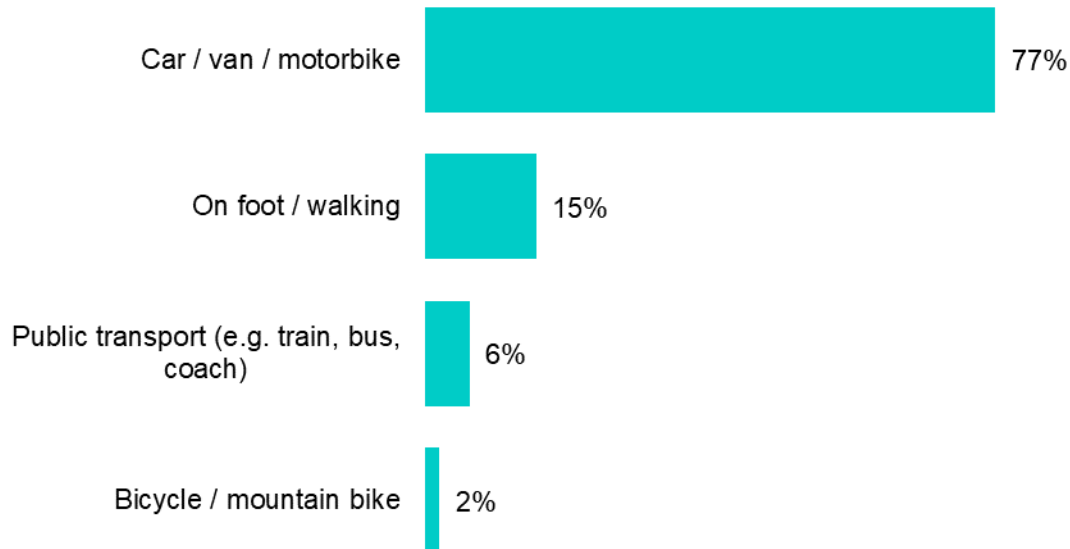
Q31. Approximately how far in miles did you travel to get there?
Unweighted base: where visited in last 12 months: 1,258

Dimensions:

- Access, experience & proximity
- Behaviour

By far the most common form of transport used to travel to marine environments was car / van or motorbike (77%) (Figure 30), an increase on the 71% who did so in 2021. Fewer reported walking than was the case in 2021 (15% compared to 23%).

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: 1,258

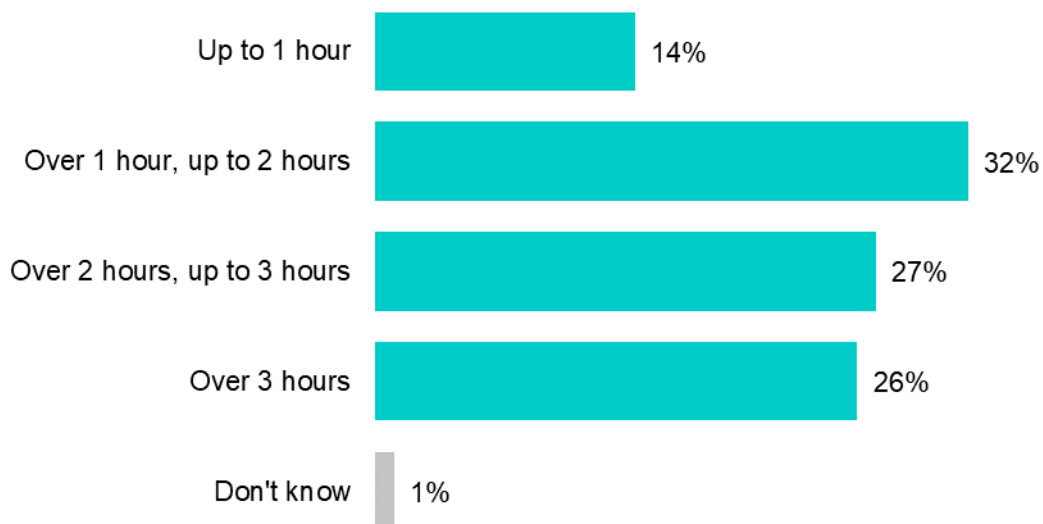
Dimensions:

- Access, experience & 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 between one and two hours (32%) (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?

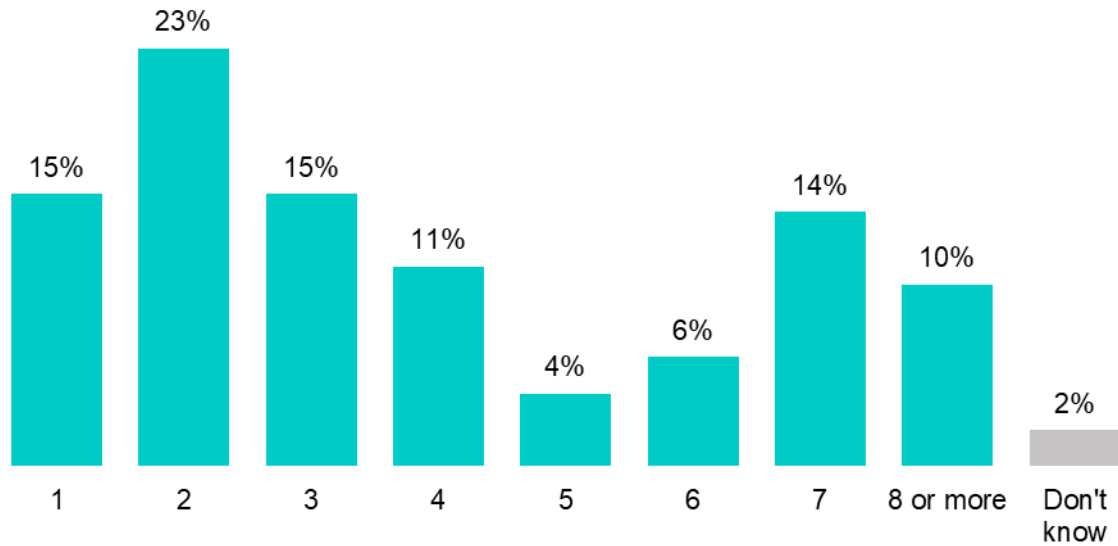
Unweighted base: where visited in last 12 months: 1,258

Dimensions:

- Access, experience & proximity
- Behaviour

Thirty-eight percent of respondents who stayed over three hours stayed away from home overnight, and among this group the most popular length for an overnight stay was two nights (23%) (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: 122

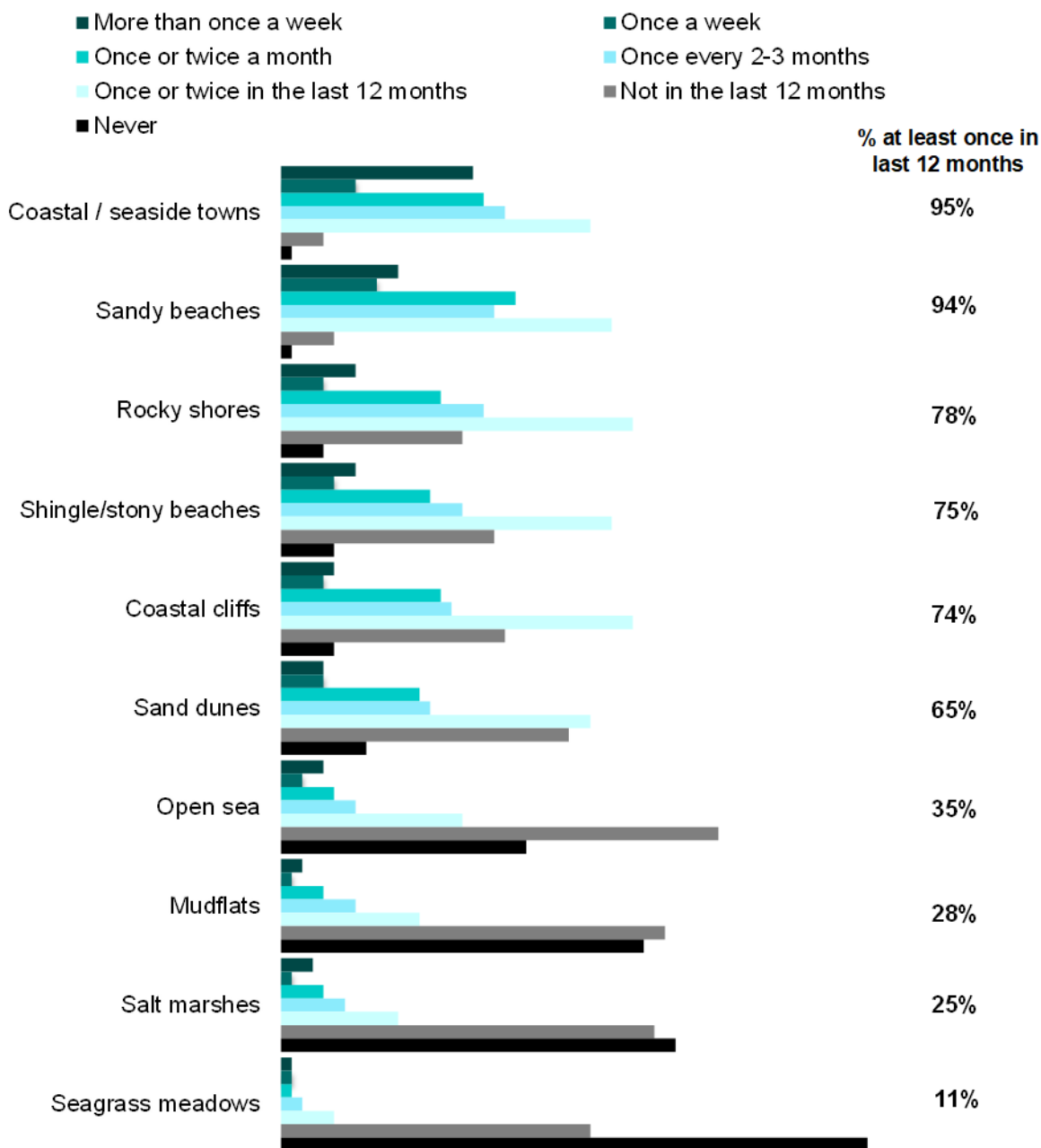
Dimensions:

- Access, experience & 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 (95%), sandy beaches (94%), rocky shores (78%), shingle/stony beaches (75%) and coastal cliffs (74%). Seagrass meadows (11%), salt marshes (25%) and mudflats (28%) 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: 1,258

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	18%	7%	19%	21%	29%	4%	1%	95%
Sandy beaches	11%	9%	22%	20%	31%	5%	1%	94%
Rocky shores	7%	4%	15%	19%	33%	17%	4%	78%
Shingle/stony beaches	7%	5%	14%	17%	31%	20%	5%	75%
Coastal cliffs	5%	4%	15%	16%	33%	21%	5%	74%
Sand dunes	4%	4%	13%	14%	29%	27%	8%	65%
Open sea	4%	2%	5%	7%	17%	41%	23%	35%
Mudflats	2%	1%	4%	7%	13%	36%	34%	28%
Salt marshes	3%	1%	4%	6%	11%	35%	37%	25%
Seagrass meadows	1%	1%	1%	2%	5%	29%	55%	11%

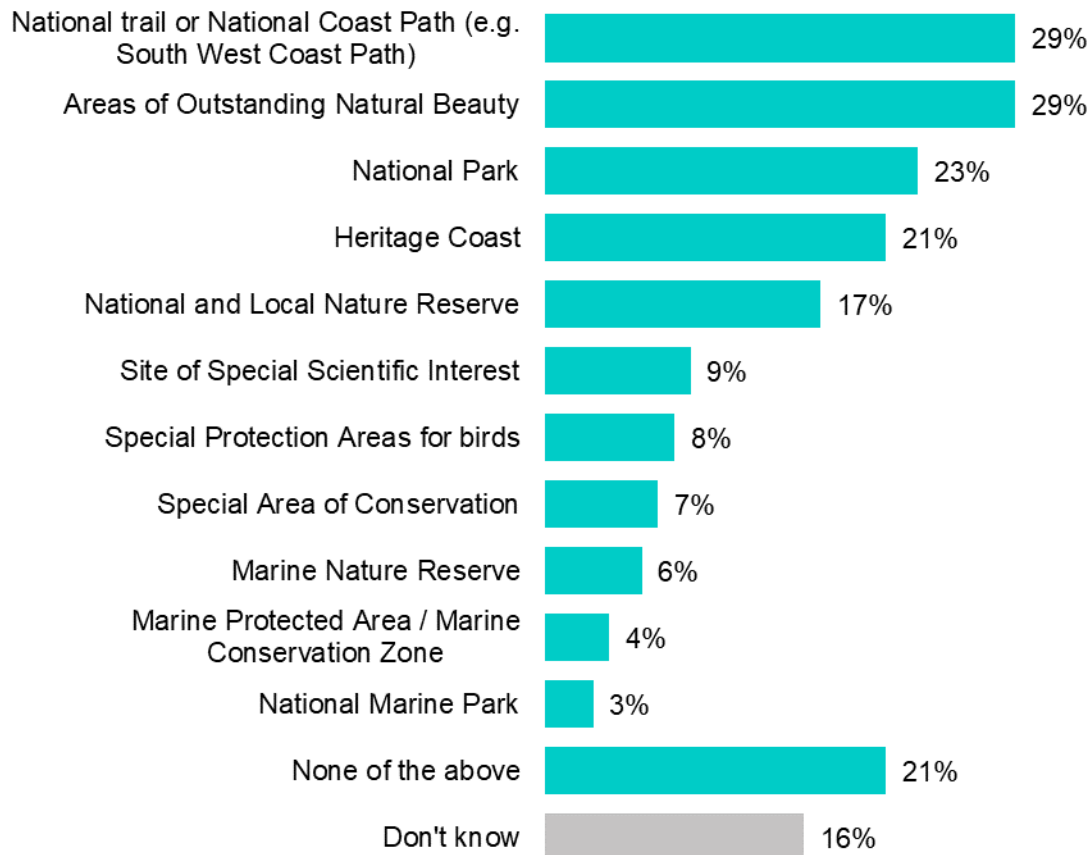
Dimensions:

- Access, experience & proximity
- Behaviour

Whilst 21% said they had not visited any designated or specific types of sites in the last 12 months, 29% said they had visited a National trail or National coast path, and the same proportion said they had visited an AONB.

Twenty-three percent said they recalled visiting a National Park, 21% the Heritage Coast and 17% a National and Local Nature Reserves (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: 1,258

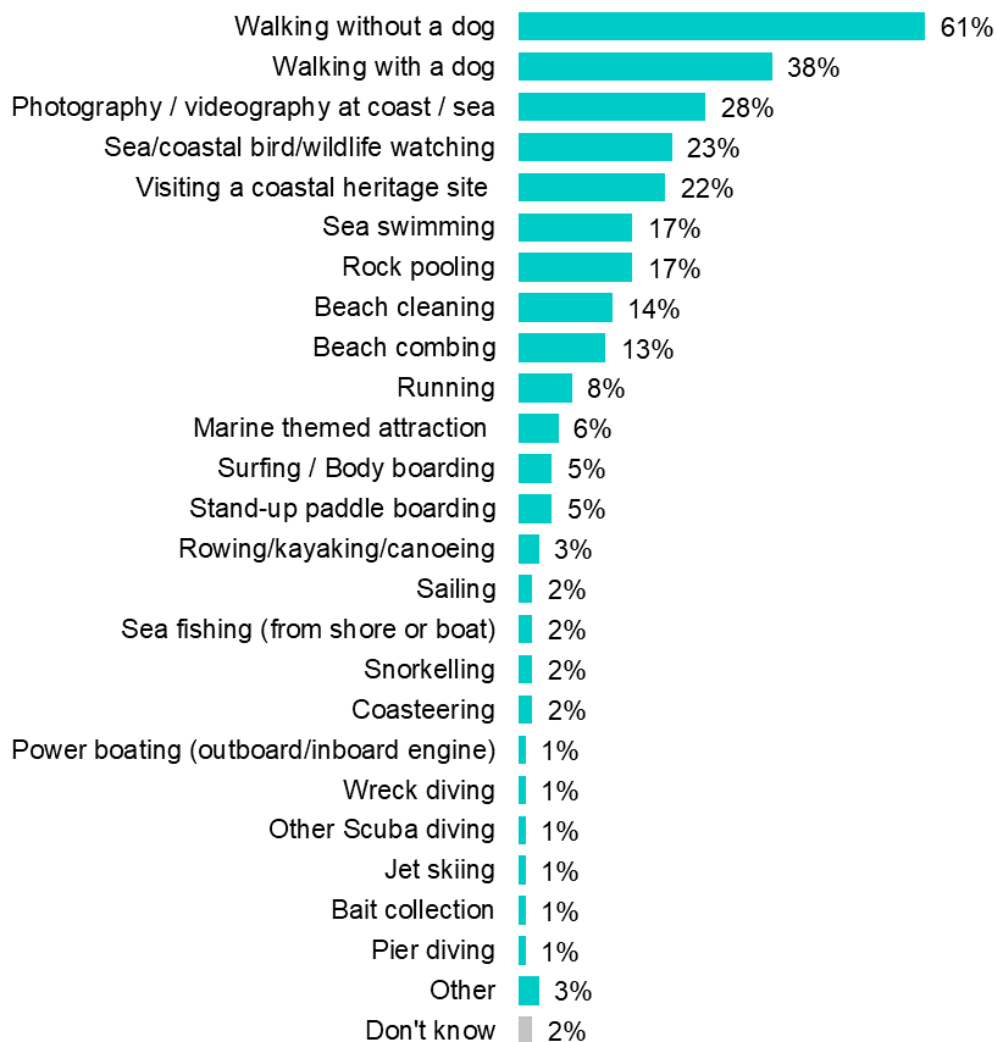
Dimensions:

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

Recreational activities

Walking, both without (61%) and with a dog (38%) were popular activities undertaken during visits to the marine environment in the last 12 months. Using them for photography and videography (28%) was also a common undertaken activity (Figure 35).

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: 1,258

Dimensions:

- Access, experience & proximity
- Activism
- Behaviour

Outcomes and motivations of visits

Good mental health (84%) and physical health (78%) 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).

Respondents were less likely to mention physical health benefits than was the case in 2021 (78% compared to 83%), and more likely to mention spending time with family and friends (57% compared to 49%).

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?

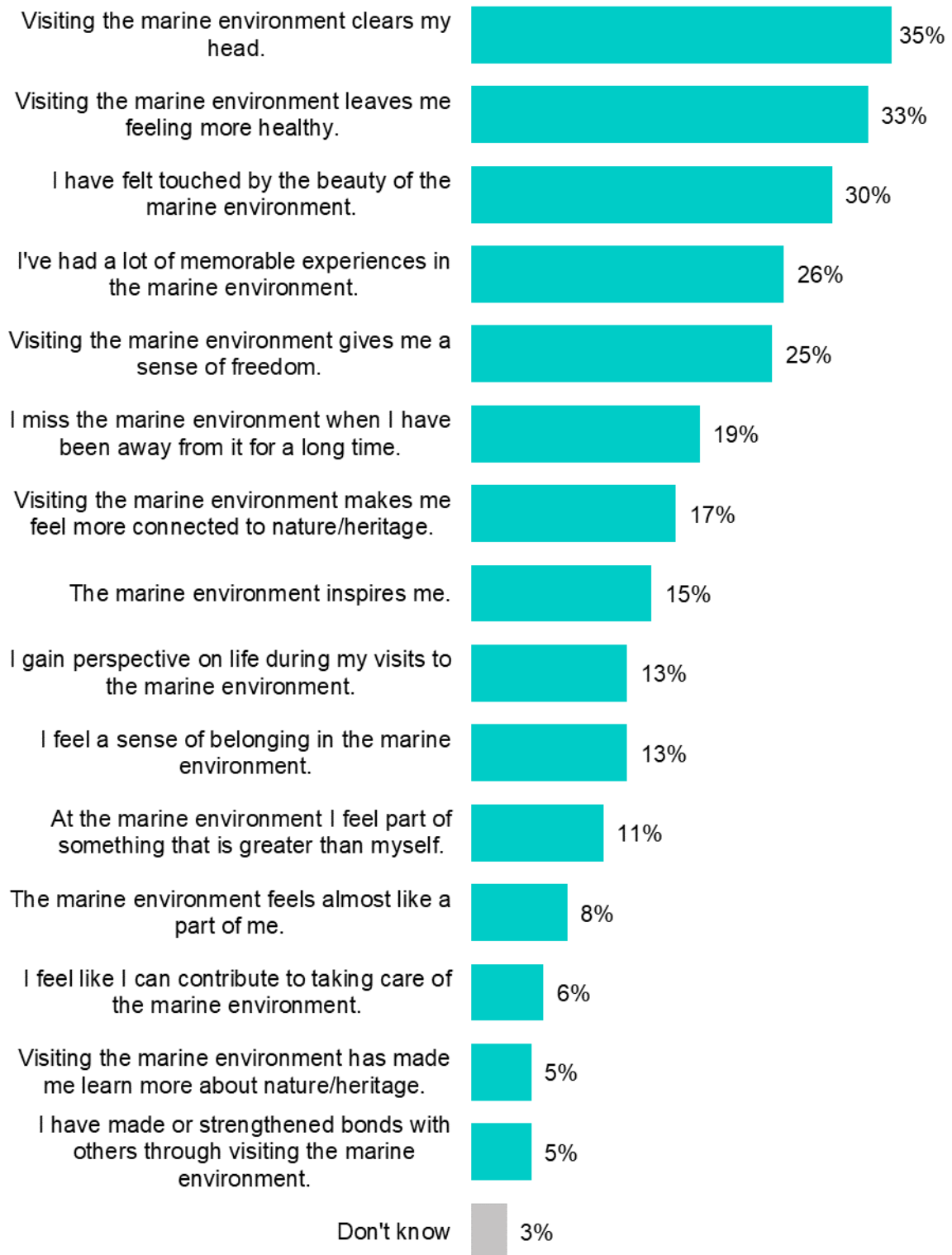
Unweighted base: where visited in last 12 months: 1,258

Dimensions:

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

Asked about general motivations for visiting marine environments, the most commonly reported reasons were clearing one's head (35%) 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: 1,258

Dimensions:

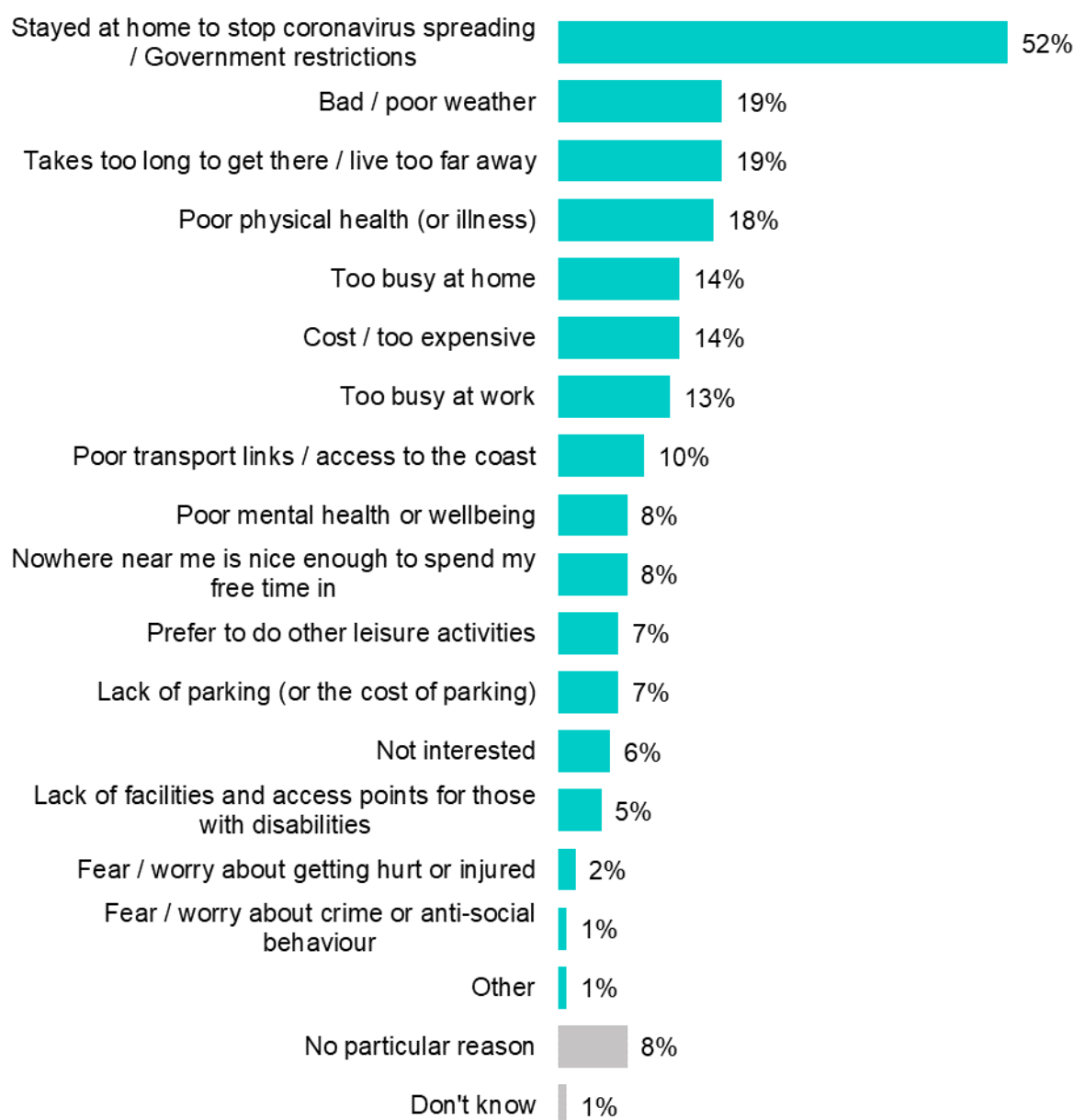
- Access, experience, and proximity
- Personal or emotional connection
- Activism
- Behaviour
- Communication
- Attitudes
- Knowledge
- Awareness

Barriers to visits

The main reason for not visiting a marine environment in the last 12 months was staying home due to COVID-19 (52%) (Figure 38), but this has, as expected, seen a marked decline since 2021 (80%), reflecting the loosening and lifting of lockdown rules.

Poor weather (19%), distance/time taken to get to a marine environment (19%) and poor physical health (18%) were the next most common barriers to visiting.

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 not visited in last 12 months: 752

Dimensions:

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

Discussion

The aim of the survey was to better understand the extent and current levels of Ocean Literacy in England, Scotland, and Wales. This report presented the results of the respondents in Wales only.

The Welsh marine environment is highly diverse, unique, and very special (MCS, 2019). Our seas provide a wealth of natural resources that we all benefit from – sand for construction, fish for food, a range of wildlife, space for recreation and enjoyment, climate regulation, clean energy to support our lifestyles and a means of global trade and transport (Welsh Government 2015). Most major towns and cities in Wales are by the sea, with over 60% of our population living along the coast (Welsh Government 2015). Welsh seas, and activities associated with the sea, play a significant role in peoples' wellbeing by providing jobs, opportunities for recreational activities, and by supporting cultural diversity and a sense of heritage (Welsh Government 2015).

However, the seas around Wales face multiple challenges. These include adapting to a changing climate, invasive species and habitat and biodiversity loss, amongst many others. To address these challenges, it is increasingly recognised how important a holistic and integrated approach to management is. Having a better understanding of how people value and perceive the marine and coastal environment could support a more cohesive approach by empowering people to make lifestyle choices that positively influence the marine and coastal environments of Wales. Increased levels of ocean literacy, defined as understanding your influence on the ocean and it's influence on you (NOAA, 2013), could also increase opportunities for more well-being benefits from the seas for communities across Wales.

Over 80% of respondents felt that spending time at the marine environment was good for their mental health. Previous evidence shows that spending time around the coast and sea can have multiple benefits for physical and mental wellbeing (Sea Change, 2019). People who live nearer the sea rate their health as being better, with more positive effects of living nearer the sea coming from those living in economically deprived communities, indicating proximity and easy access to the sea may go some way to reduce health inequalities (Sea Change 2019). The results of this survey highlighted that people in Wales value the marine environment and understand the physical and mental-health benefits they derive from spending time there. In fact, over 40% of people feel in awe of the marine environment in Wales. Feelings of awe have several benefits to health and well-being including decreasing stress levels in the short and long term, decreasing negative internal criticism, increasing generosity, kindness, and cooperation, and making you feel happier and more satisfied with your life (Keltner & Haidt, 2003). Practices such as mindfulness can support feelings of awe in the every-day which can increase wellness. There are groups in the UK that support mindfulness in a policy context even, such as The Mindfulness Initiative who support British Politicians through the [All Party Parliamentary Group on Mindfulness](#) and research centres, academics, mindfulness

scientists and practitioners from the UK and around the world. Better links between ocean literacy and mindfulness (as one example) could provide new opportunities for Wales and the UK to align the ocean and human health agendas for example and create a better platform for joined up working for an interdisciplinary approach including the natural and social sciences. This method could support movements like social prescribing for coastal surgeries, advocating community or social groups for things like cold water swimming, or local authority interest in equitable access provision.

The survey found that almost half of the respondents felt concern for the marine environment (48%), with marine litter / plastic pollution thought to be the biggest threat to Wales's marine environment (70% of respondents thought this was the biggest threat). However, whilst plastic pollution is a recognised issue in marine environments, it is not the only issue impacting on the overall health and resilience of seas (Stafford & Jones 2019), and reducing consumption of single use plastics is not the only way people can support the overall health and resilience of Welsh seas. The State of Natural Resources Report ([SoNaRR](#)), produced by Natural Resources Wales under the Environment (Wales) Act, brings together the best available evidence on the sustainable management of natural resources across Wales. The most recent SoNaRR highlights climate change and associated effects such as sea level rise and coastal squeeze as some of the most critical pressures affecting the resilience of Welsh coasts and seas. Climate change will have significant impacts on some coastal communities who, in many cases, may be unaware of, and unprepared for, some of the changes. SoNaRR also highlights the need to raise awareness of the benefits of planning for a changing shoreline including opportunities to deliver nature-based solutions at the coast. This is also reflected in Marine Area Statement which includes a priority for action around "Nature-based Solutions and adaptation at the coast". The results of the survey suggest that improvements could be made to peoples understanding of the most critical pressures affecting their local marine environment to enable individuals to engage more proactively to address them.

In general, people thought the Welsh marine environment was in better health than the global ocean. Despite this, more people in Wales think the Welsh marine environment is in poor health (29%), rather than in good health (21%). It is unknown what the public of Wales feel a healthy marine and coastal environment would look like, and how that increased health could impact on their lives. There are programmes of work currently underway to try and develop a shared vision for nature in the future, which could include the marine and coast e.g. [Natur a Ni](#). This could form a useful basis for further collaborative action to improve ocean literacy and engagement with marine and coastal environments.

The new curriculum for Wales encourages outdoor learning, and this could include opportunities for spending time at the coast in Wales. This could help nurture ocean advocates of the future and promote ethical citizens of Wales. Promoting ocean literacy in Youth Parliament and other youth groups could benefit younger generations and their priorities for future generations. It is also worth identifying further hooks that already exist in policy and governance that can support ocean literacy in Wales, to maximise existing opportunities.

According to this survey, people mostly garner their information on the marine environment from television/radio (43%) and the news (43%) as well as documentaries (34%), highlighting the importance of adopting multiple methods of communicating ocean topics to different audiences. One approach will not suit all. Media-based intervention has been used to encourage pro-environmental behaviour particularly in areas where there is a high disconnect with the natural world, e.g., urban areas (Thomas Walters *et al.* 2019), with documentaries and wildlife programmes being an avenue for wide-spread change in behaviour through an ability to communicate complex information in a simple way (Karlín & Johnson, 2011; Janpol & Dilts 2016). Given this, and the clear role of media platforms as a source of ocean knowledge for many in Wales, it may be helpful to consider how key messages and communication are relayed to the public, and for new opportunities to be identified. This could include more local radio and some Welsh-specific television programmes.

The survey results suggest that activism through lifestyle change is one of the most common ways people feel they contribute to protecting the marine environment. Activism such as volunteering and contacting local representatives around green/blue issues is something less well taken up than lifestyle changes (for example reducing consumption of single use plastics), and it would be useful to understand why this is the case and what could be done to promote a wider range of actions. It is also true that almost half of the respondents from this survey believe their lifestyle has no impact on the marine and coast (40%) with over 10% of people not knowing if they have an impact or not (12%). Given that 60% of the population in Wales live along the coast, and many of the major towns and cities in Wales are coastal, there is a critical need for a better understanding of the connectivity between lifestyle and the state and resilience of our local natural places. Better communication around the wider benefits of certain choices like supporting sustainable local products such as local seafood, choosing greener travel methods, supporting low carbon energy options wherever possible, may help increase peoples understanding of how lifestyle can influence the systems that support everyday life. The most recent SoNaRR report highlights that it is the social sphere (civil society) where Wales can address the causes of environmental degradation at source. It says: “That means looking at the way people live so that a range of sectors can leverage social and cultural change and rapidly establish a better fit between humans and the environment”. Better ocean literacy in Wales could support this by championing a lifestyle that delivers more benefits for the wider environment.

This survey provides a positive and useful resource which is the first of its kind in scale. The results from the survey have implications for policy and practice in Wales and beyond, for the UK Europe and globally. Currently, an ocean literacy task and finish group is being set up under the Welsh Government Wales Coasts and Seas Partnership (W-CaSP). The results from this survey should feed directly into this group as it co-produces and collaboratively develops a strategy for supporting ocean literacy in Wales.

Recommendations for future Ocean Literacy work in Wales

The survey results provide information on the current levels of ocean literacy in Wales and provides a benchmark from which to assess ocean literacy in Wales going forward. The results are the second year of a 10-year study to coincide with the UN Decade for Ocean Science. It is important future iterations of this study continues for the coming years, to enable a more comprehensive understanding of public values and perceptions of Wales marine and coastal ecosystems and to detect trends over time.

It is important the results from this collaborative survey are shared widely in Wales, including at the policy level, to help future decisions enable a more ocean literate Wales. Evidence here could help raise ocean literacy on the agenda of relevant industries and organisations in Wales, bringing together a multidisciplinary and holistic approach to the sustainable management of the marine and coastal environments in Wales. There are specific opportunities for example, using media channels, especially television and radio, to convey key messages for better public understanding of important marine and coastal issues. This could be used at the local, regional, and national level.

We need to recognise that one size does not fit all, and further analysis would be beneficial to obtain a better understanding of, for example, a more regional view or the views of people we haven't heard from yet. There are also alternative ways to collect data other than questionnaires that could be explored for new insights into public perceptions. There should be more in-depth quantitative analysis to better understand why people have diverse values and attitudes, to explore complex cultural upbringings or identify simple linear relationships between perceptions, values, and behaviour.

Importantly, the evidence presented here can be used to inform the development of an Ocean Literacy Strategy and action plan for Wales, under the Wales Coasts and Seas Partnership (W-CaSP) ocean literacy Task and Finish group. This survey is essential to deliver this work, to provide a baseline understanding of ocean literacy in Wales, identifying trends over time, identifying opportunities for growing ocean literacy, and allowing comparisons to be made on a national level within the UK between nations. Having a UK level set of results would be useful, to work with the wider community in Europe and globally, particularly throughout the UN decade for ocean science.

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Appendices

Appendix 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
- IMD quintiles
- ONS Coastal Communities sub-groups
- Urban/rural

Further details on the methodology are available in the [Technical Report](#).

Data Archive Appendix

Data outputs associated with this project are archived in server-based storage at Natural Resources Wales with the metadata reference number 125375.

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