

An appraisal of public perception towards the Chichester Harbour AONB and its Management Plan



A Dissertation

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Abstract

It is widely recognised that ICZM principles are fundamental features of coastal management approaches. One principle, adaptive management, implements stakeholder engagement as a mechanism in successful coastal zone management solutions. There is an increasing need for engagement between stakeholders during all stages of the management process for protected coastal landscapes. This study critically evaluates the perception of coastal and marine users towards the Chichester Harbour AONB and its Management Plan. Research was conducted in the form of online questionnaires and interviews, against a range of assessment indicators. The study has identified that wider ICZM approaches towards coastal AONBs, like Chichester Harbour, are outdated and specific principles which encourage a participatory approach, like stakeholder engagement, would be beneficial in future AONB management strategies. Furthermore, all pressures, from environmental and anthropogenic sources, which can impact the special qualities of AONBs must be managed in an adaptive, anticipatory manner for sustainable use of coastal resources that Chichester Harbour can provide, which are enjoyed by many.

Keywords

Adaptive management

Area of Outstanding Natural Beauty
(AONB)

Environmental designations

Integrated Coastal Zone Management
(ICZM)

Pressures

Stakeholder engagement

1.0 Introduction

Coastal landscapes in the England are environments which possess high biodiversity levels, unique topography, and a rich cultural heritage. Coastal areas are highly regarded its users, providing a source of recreational activities with good accessibility, health benefits, education, employment and research opportunities. Approximately 10% of the UK’s population live in coastal settlements (House of Lords, 2019). However, coastal and marine ecosystems are sensitive to change; increased anthropogenic activity occurring within the marine environment exacerbates pressures on coastal landscapes. Increased anthropogenic activity in marine areas occurs to meet the demands of exponential population growth, thus further degrading coastal landscapes (Halpern et al., 2008). An environmental pressure is “the mechanism through which an activity has an effect on any part of the ecosystem” (JNCC, 2019, p. 1). Degradation of coastal landscapes is caused by pressures such as “climate change, marine pollution, habitat destruction, overfishing, tourism and nutrient over-enrichment”, amongst others, which impacts “human health, food security and economic development” (IUCN, 2020, p. 1).

To protect vulnerable coastal landscapes, several in England are designated under national legislation, each with different objectives to maintain and enhance the coastal environment (ESCP, 2020). One example is Areas of Outstanding Natural Beauty (AONBs), which are designated by non-governmental public bodies, such as Natural England, sponsored by the Department for Environment, Food and Rural Affairs (Defra) (HM Government, 2019). The passing of the National Parks and Access to the Countryside Act 1949 introduced AONBs and National Parks, over concerns regarding “the conservation of nature, public access to private land and preservation of landscape from mass suburbanisation and development” (Anderson, 1990, p. 1). Currently, they are designated under the Countryside and Rights of Way (CRoW) Act 2000, ordered by Natural England (from 2006), whose statutory purpose is to conserve and enhance the ‘natural beauty’ of the area (Defra, 2017). Thirty-three AONBs were confirmed for designation by 1976; there are currently 34 AONBs in England, covering approximately 15% of the country (HM Government, 2019). Figure 1 summarises the key strategic objectives of the National Association for AONBs (NAAONB), outlined in the Defra AONB Support Scheme.

- conserve and enhance the natural and cultural heritage of AONBs, ensuring they can meet the challenges of the future
- promote public understanding and enjoyment of the nature and culture of AONB and encourage people to take action for their conservation.
- support the economic and social well-being of local communities in ways which contribute to the conservation and enhancement of natural beauty
- value, sustain and promote the benefits that Areas of Outstanding Natural Beauty provide for society, including clean air and water, food, carbon storage and other services vital to the nation’s health and well-being.

**Figure 1 –
Strategic
objectives of
the NAAONB**

**Source:
Defra. (2017)**

Natural England assess landscapes through an evaluation framework to determine its suitability for an AONB designation, as shown in Figure 2. This assessment process implements a ‘natural beauty’ criterion: a list of factors that contribute to natural beauty, thus judgements are made in a transparent but thorough manner (Natural England, 2011). Associated indicators include landscape quality, scenic quality, relative wildness, relative tranquillity, natural heritage features and cultural heritage (MacFarlane et al., 2004; Natural England, 2011). Furthermore, landscapes must be deemed desirable to designate for the purpose of conserving and enhancing natural beauty (Natural England, 2011). Issues affecting the area’s special qualities, their understanding and enjoyment are dependent upon consensus – stakeholders are strong indicators as to whether special qualities should be recognised (Natural England, 2011). Mechanisms, powers and duties of statutory bodies must be considered to successfully deliver AONB objectives (Natural England, 2011). Management arrangements must be implemented to address current issues and deliver wider environmental benefits, for example climate change mitigation or adaptation and improved connectivity of wildlife habitats (Natural England, 2011). Present and future availability of funds must be evaluated to support the management of a potential AONB (Natural England, 2011). Regulation and development control and the incentives of statutory bodies to deliver AONB objectives must also be considered (Natural England, 2011). Once a detailed boundary of the AONB has been defined, the formal designation procedures can begin, outlined in Figure 2.

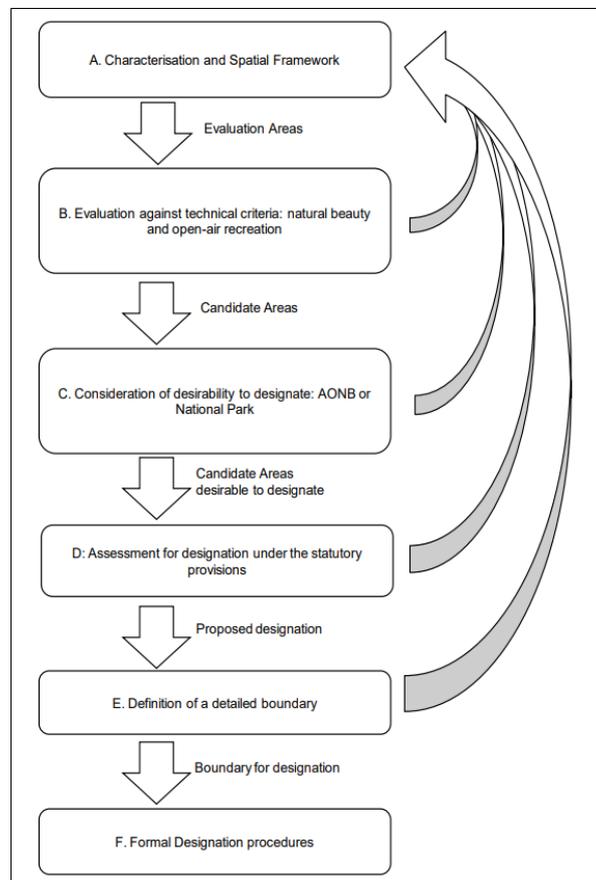


Figure 2 – Evaluation framework for assessing landscapes for AONB designation
 Source: Natural England. (2011)

AONBs situated in coastal or marine areas face several threats on varied timescales. Climate change, exacerbated by anthropogenic activity, is the most immediate threat to England's coastlines, causing higher frequency and magnitude of coastal hazards (Fletcher and Potts, 2005). Coastal hazards are defined as "any phenomena that threaten coastal defences, properties and the environment under extreme weather conditions", for example storms and associated storm surges, coastal erosion and flooding (Kaiser, 2006; Liu et al., 2014 p. 187). Sea-level rise occurring due to climate change contributes to the increasing frequency and magnitude of coastal hazards (Forino et al., 2018). Exponential population growth combined with preferences to live in coastal areas for their natural beauty and socioeconomic opportunities (leisure and employment), is the impetus for rising levels of coastal development (Cambers 2001; UN, 2017).

Coastal tourism has many forms and is an essential economic component for the UK, collectively valued at £8 billion to the English economy (NCTA, 2016). However, hotter and drier weather conditions have resulted in overtourism in coastal areas – popular beaches are often overcrowded which visitors are requested to avoid (Coldwell, 2018). This results in habitat degradation and disturbance of its species, increased demand for services, energy, water, and waste management and causes conflict between tourists and coastal communities (Coles, 2020).

Marine pollution from anthropogenic activity consists of runoff of waste (industrial, agricultural, and residential), oil spills, waste disposal and shipping vessels (NOAA, 2018). Its introduction to the marine environment results in deleterious effects, for example, posing health risks to humans, hindrance of marine activities, deterioration of water quality and reduction of amenities (United Nations, 1997). Furthermore, marine litter, defined as "any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment", contributes to the spoilage of AONBs situated in coastal areas (The Crown Estate, 2014, p. 6). Marine and coastal users highly regard the aesthetic value of protected coastal landscapes (The Crown Estate, 2014).

Nutrient enrichment, in moderation, can prove beneficial by improving fish production in coastal and marine systems (National Research Council, 2000). However, over-enrichment, often from agricultural runoff, can cause eutrophication, increasing oxygen consumption which can lead to hypoxic (low oxygen) or anoxic (oxygen-free) water bodies (National Research Council, 2000). Furthermore, harmful algal blooms also occur, depleting oxygen levels further which affects fish, shellfish and marine mammals and poses a direct public health threat to humans (National Research Council, 2000).

Overfishing has had a chronic effect on marine ecosystems and negatively affects several indicators of ocean health on an unprecedented scale, including biodiversity, food security and coastal economies and livelihoods (Halpern et al, 2015; Gattuso et al., 2018). Furthermore, direct impacts of overfishing can lessen fish biomass, affect the sustainability of fisheries, and contribute towards the degradation of marine ecosystems from destructive fishing gear (Sumaila and Tai, 2020). Fishing operations that are illegal, unreported, or unregulated are often conducted with highly impacting fishing apparatus which also disrupts benthic substrate (Sumaila and Tai, 2020).

Whilst it is critical to understand the impacts of pressures, implementing coastal management strategies which are sustainable and long-term is essential to meet the uncertainties of climate change (Creed et al., 2018). Thus, coastal management in England has experienced a rapid paradigm shift from “keeping flood water out, to one which makes space for water” (Defra, 2004; Creed et al., 2018, p. 1). Unpredictable changes to coastal and marine systems need to be considered in management strategies to provide continuous protection and economic sustainability of coastal communities (Environment Agency, 2014). Better knowledge of dynamic coastal environments and associated risks underpins the progression made towards integrative coastal management approaches over the past twenty years (Challies et al., 2016; Brown et al., 2017). The development of concepts such as Integrated Coastal Zone Management (ICZM) and the establishment of policy frameworks to provide coastal protection and sea defence has engendered more holistic and integrated approaches where revision of coastal management plans is iterative (Cincin-Sain and Knecht, 1998; Hines et al., 2012).

Another critical factor for implementing successful coastal management strategies is stakeholder engagement (Oen et al., 2016). Adaptive management, during a gradual process with continual feedback, is a fundamental key principle of ICZM, as shown in Figure 4, to identify measures and initiatives to ensure ‘bottom-up’ stakeholder participation (Chaniotis and Stead, 2007). Encouragement of participatory approaches promotes availability of existing knowledge, thus increasing community understanding of coastal systems and associated pressures whilst ensuring transparency in decision making (Carr et al., 2012). Figure 3 shows a diagram illustrating the relationship between different levels of coastal management, specific to the development of Statutory Management Plans for all AONBs. To achieve the objectives outlined by Carr et al., (2012), an effective stakeholders’ engagement strategy, specifically stakeholder analysis, feeds the ICZM process with information and data, resulting in the minimisation of stakeholder conflict (Niavis et al., 2019).

The CRoW Act 2000 requires local authorities and conservation boards to have statutory responsibility over the production and regular review of AONB Management Plans (The Countryside Agency, 2001). This article will appraise the public perception of Chichester Harbour and its Management Plan, designated as an AONB, using stakeholder analysis in the form of questionnaires and semi-structured interviews. The aims and objectives of this article are highlighted in Section 2.0.

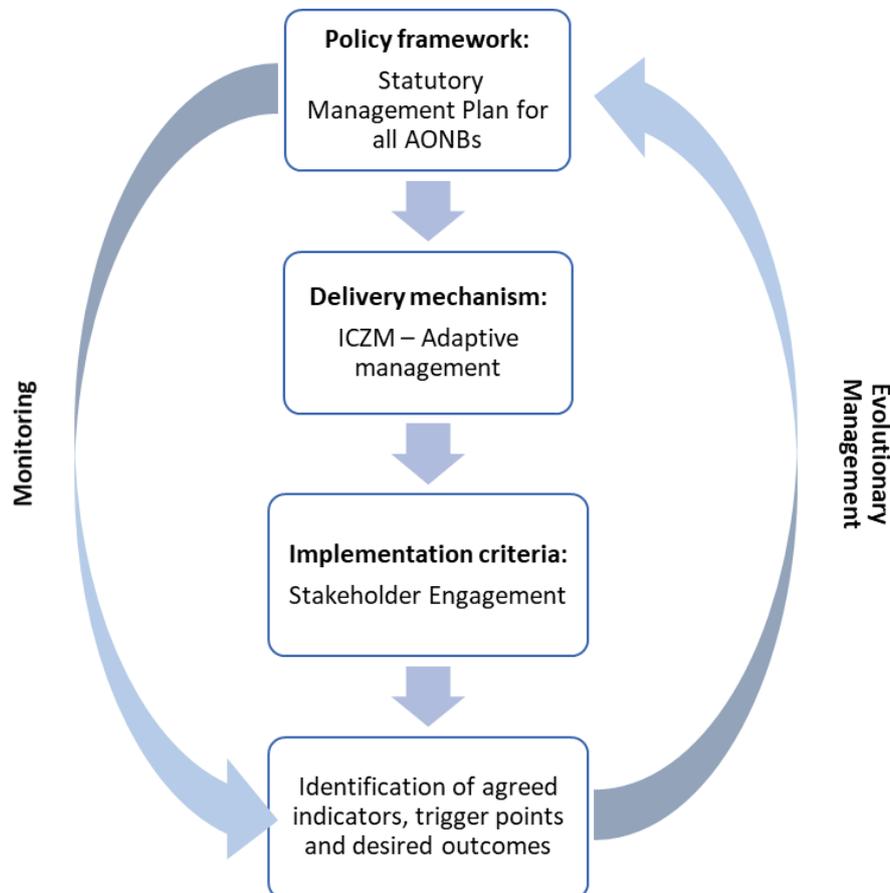


Figure 3 – Diagram of the relationship between levels of coastal development

Source: Barnes. (2020), adapted from Creed et al., (2018)

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- 1 a broad overall perspective (thematic and geographic)
 - 2 a long-term perspective which will take into account the precautionary principle
 - 3 adaptive management during a gradual process
 - 4 local specificity and the great diversity of European coastal zones
 - 5 working with natural processes and respecting the carrying capacity of ecosystems
 - 6 involving all the parties concerned in the management process
 - 7 support and involvement of relevant administrative bodies
 - 8 use of a combination of instruments designed to facilitate coherence
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Figure 4 – Eight key principles of ICZM

Source: Green. (2017)

2.0 Aims and Objectives

The aims of this study are:

- To critically evaluate the perception of coastal and marine users towards Chichester Harbour AONB and its Management Plan
- To establish recommendations to increased public awareness about the Management Plan and sustainable use of coastal resources and protection of special qualities within the Chichester Harbour AONB

The objectives of this study are:

- To describe the level of recreational activities carried out by marine and coastal users within Chichester Harbour
- To evaluate the awareness and understanding of marine and coastal users towards environmental designations based in Chichester Harbour
- To critique the awareness of marine and coastal users towards the special qualities of Chichester Harbour and their understanding of how pressures impact them
- To analyse the understanding of marine and coastal users towards the importance of AONBs to the British landscape and the key elements of their success
- To appraise the awareness and understanding of marine and coastal users towards the role and purpose of the Chichester Harbour AONB Management Plan
- To evaluate the awareness of marine and coastal users towards any changes occurring in Chichester Harbour and its Management Plan

3.0 Study Site

Gradual transitions in the character of the British landscape over the last 70 years reflect an integration of economic and cultural land uses, once dominated by drivers of agricultural production (Cantore et al., 2011). Furthermore, making designated landscapes more accessible to the public is deemed a legislative imperative for decision-makers (HM Government, 2000). Managers seek to protecting and enhancing natural beauty and the rural heritage of designated AONBs through commodification: accomplishing conservation objectives while generating local income (Shucksmith, 2012). However, the population of permanent residents residing in or near protected landscapes has increased (Natural England, 2013). It could be argued that socioeconomic development and the demand for recreation access have increased, thus being prioritised over conservation aims of AONBs (Bell and Stockdale, 2015).

Pressures and their impacts have been acknowledged and addressed by the British Government previously. The Sandford Principle, translated into law through the Environment Act 1995, aimed to manage stakeholder conflict by prioritising conservation interests (cultural and natural environment) over recreation access and public enjoyment (The Countryside Agency, 2001). Adoption of policy frameworks that aim to 'value nature' through promotion of benefits from environmental sources, such as increased wellbeing gained from visiting AONBs, underpins how devaluing these services would be detrimental to the economies of AONBs (Natural England, 2013; UK Research Councils, 2015). Thus, such approaches recognise the cultural value of AONBs, and that "people must inhabit, work in, or visit designated landscapes to support, provision and regulate services" (Horswill et al., 2020, p. 2). The 25 Year Environment Plan recommended a review of protected landscapes within England, known as the Glover Review (Defra, 2019). It suggested that AONBs be given increased funding, strengthened with government reform, given statutory consultee status in development and a policy of renewed designation, renamed as 'National Landscapes' under the National Landscape Service (NLS), which includes National Parks (Defra, 2019).

Ultimately, AONB Management Plans must balance the protection and enhancement of the landscape and preserve its historical and cultural heritage, whilst encouraging visitors and meeting the infrastructural demand for increasing populations (Natural England, 2013).

This research critically examines the public perception of the Chichester Harbour AONB and its Management Plan. Chichester Harbour is the smallest AONB in South East England, measuring approximately 74km² (CHC, 2019). Figures 5 and 6 show the location of Chichester Harbour AONB with defined boundaries, alongside a generalised view of England. Furthermore, 41% of the landscape is below Mean High-Water Springs (MHWS), close to being the High-Water Mark (HWM); considered as a 'cadastral' boundary which separates land and water (Whittal, 2011; CHC, 2019). The determination of the HWM is critical in coastal management and planning; used to categorise public and private land and as an indicator from which development is offset to minimise coastal hazard risk to properties (Liu et al., 2014).

Chichester Harbour AONB, West Sussex, England



Figure 5 – Map of Chichester Harbour AONB, with an overview map showing its location within England

Source: Barnes. (2020)

Chichester Harbour AONB, West Sussex, England

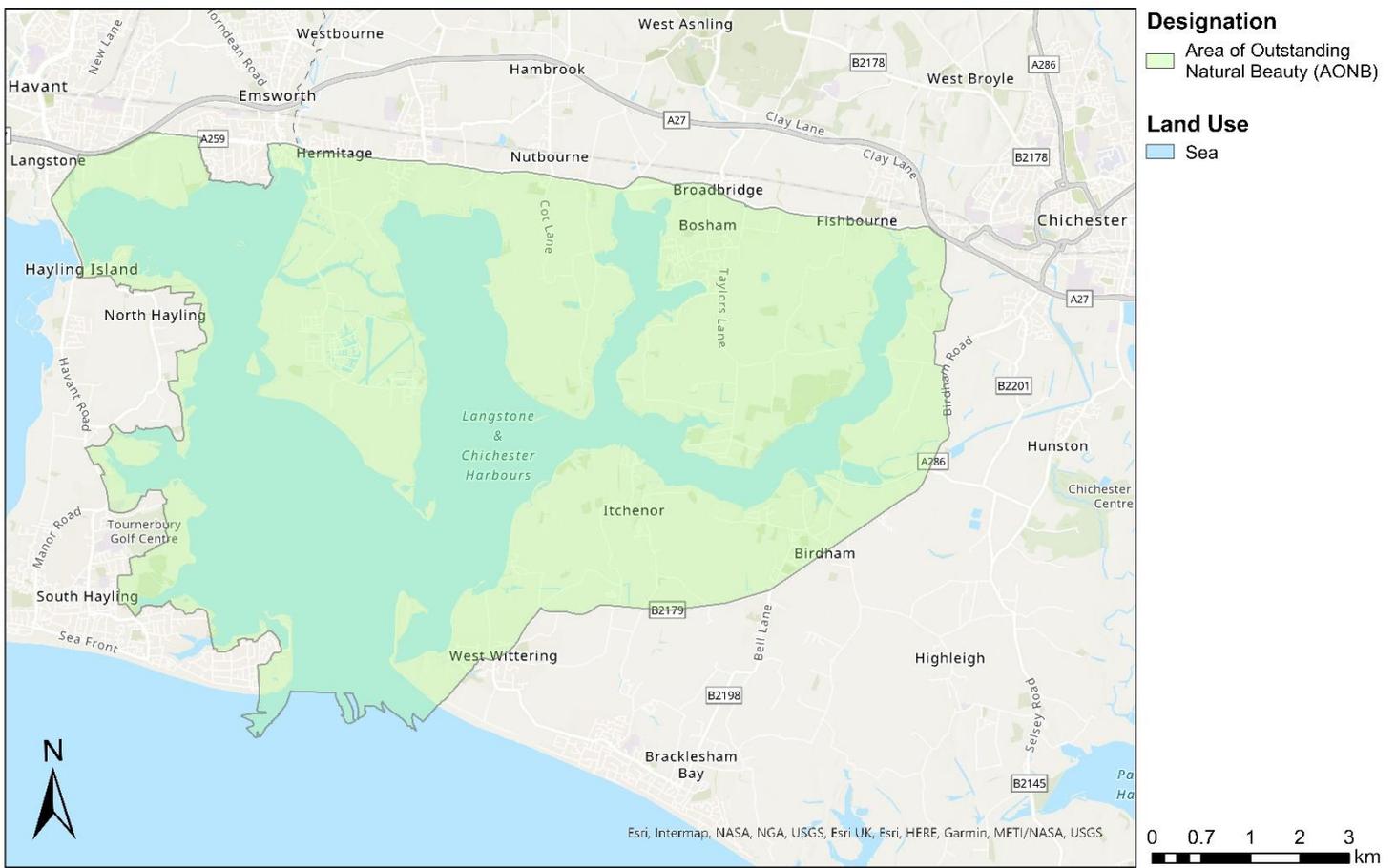


Figure 6 – Map of Chichester Harbour AONB, zoomed to show its boundaries within Hampshire

Source: Barnes. (2020)

Chichester Harbour is a tidal estuarine environment, characterised by intertidal mudflats in conjunction with Langstone Harbour, the largest in area along the south coast of England (Watkins, 2019). Moreover, the ecological characteristics of Chichester Harbour includes other significant habitats which contribute to its unique landscape character and high levels of biodiversity. These include open water, saltmarshes, shingle beaches, sand dunes, coastal grazing marsh, reedbeds, woodlands arable farmland, ponds, hedges and scrub (Watkins, 2019).

Chichester Harbour was designated as an AONB in 1964, meeting the aforementioned ‘natural beauty’ criterion due to the special qualities of the landscape (CHC, 2019). Furthermore, in 1970, 51% of Chichester Harbour was designated as a Site of Special Scientific Interest (SSSI), covering 39.65km², a nationally important designation as it contains rare species of flora and fauna and important geological and physiological features (CHC, 2019; Cottam, 2019). The site was also designated as a Ramsar site in 1967 for its significance as a habitat for waterfowl and coastal birds (CHC, 2019). Other notable designations based within Chichester Harbour AONB are shown in Figure 7.

Worldwide Designation	Ramsar Site	Wetlands are among the most diverse and productive ecosystems. Chichester and Langstone Harbours were recognised as a wetland of international importance when they were designated as a Ramsar Site in 1987, under the Ramsar Convention.
European Designations	Special Area of Conservation (SAC)	A Special Area of Conservation is a site designated under the Habitats Directive. These sites, together with Special Protection Areas, are called Natura sites and they are internationally important for threatened habitats and species. Solent Maritime SAC was designated in 1994.
	Special Protection Area (SPA)	A Special Protection Area is a site designated under the Birds Directive. Chichester and Langstone Harbours SPA was designated in 1979.
	Water Framework Directive	This aims for good water quality and covers groundwater, surface water (rivers, canals, lakes, reservoirs, estuaries, other brackish waters, and coastal waters) out to one nautical mile from shore as well as wetlands. The Directive, which came into effect in 2000, gives shellfish harvesting waters and bathing waters special protection.
Nationally Important Designations	Area of Outstanding Natural Beauty (AONB)	An Area of Outstanding Natural Beauty is a landscape which is considered so precious that it is protected for the nation. The criteria for designating an AONB include valuable wildlife, habitats, geology and heritage, as well as scenic views. Chichester Harbour was designated as an AONB in 1964.
	Bass Nursery Area	A Bass Nursery Area is a place that is recognised as a haven for small school bass. Fishing for bass, or fishing for any fish using sand-eels as bait, by any fishing boat within any part of the Harbour as defined, is prohibited between 30th April and 1st November each year. Chichester Harbour was designated a Bass Nursery Area in 1990.
	Site of Special Scientific Interest (SSSI)	Chichester Harbour was designated a Site of Special Scientific Interest in 1970 because it was considered to be of special interest by virtue of its fauna, flora, geological or physiographical / geomorphological features.
Locally Important Designations	Conservation Area	Conservation Areas protect special architectural and historical places of interest. There are ten Conservation Areas in and around Chichester Harbour.
	Dark Sky Discovery Site	Three Dark Sky Discovery Sites were defined in Chichester Harbour in 2017. They are particularly good sites for stargazing.
	Local Nature Reserve	Local Nature Reserves are particularly appropriate for educational, research or public information purposes. There are five Local Nature Reserves in Chichester Harbour.
	Local Wildlife Site	Local Wildlife Sites in West Sussex feature important habitats that complement Local Nature Reserves and the Site of Special Scientific Interest. They are the equivalent of a Sites of Importance for Nature Conservation in Hampshire. There are 16 Local Wildlife Sites in Chichester Harbour.
	Site of Importance for Nature Conservation (SINC)	Sites of Importance for Nature Conservation in Hampshire feature important habitats that complement Local Nature Reserves and the Site of Special Scientific Interest. They are the equivalent of Local Wildlife Sites in West Sussex. There are 25 SINC in Chichester Harbour.

Figure 7 – Environmental designations of Chichester Harbour AONB, categorised in different levels of legislative importance

Source: CHC. (2020)

The Chichester Harbour Conservancy (CHC) was established in 1971, by the CHC Act, to fulfil the requirement of local authorities being responsible for the creation and review of AONB Management Plans (The Countryside Agency 2001; CHC, 2019). The CHC Act recognised the AONB as a single estuary, comprised of the former Emsworth Harbour in Hampshire and the Port of Chichester, West Sussex (CHC, 2019). The CHC is the only Statutory Harbour Authority managing an AONB on a national level, with purposes extended to leisure, recreation and conservation efforts (CHC, 2019). Furthermore, the development of the CHC Safety Plan and Marine Management System provided the Conservancy with duties and powers to provide a national standard of marine safety of its ports and harbours, outlined in the Port Marine Safety Code (CHC, 2019). The CHC also legislated a creation of a ‘Statutory Advisory Committee’, comprised of local stakeholders, alongside a new Statutory Board, consisting of members of local councils and representatives of the Statutory Advisory Committee, as shown in Figures 8 and 9 (CHC, 2019). The Statutory Advisory Committee provides counsel to the Statutory Board; its aims are fourfold: “(1) to ensure that Chichester Harbour is managed effectively; (2) to provide a forum for collaboration of information and ideas; (3) consider issues likely to affect the AONB adversely and recommend action and (4) to make proposals for new management initiatives” (CHC, 2019, p. 16).

	Members
Chichester District Association of Local Councils • Representing Parish Councils	1
Chichester Harbour Federation • Representing sailing, boating and marine industries	4
Commercial Interests	1
Defra Interests • Environment Agency • Natural England	2
Naturalists: • Hampshire & Isle of Wight Wildlife Trust • Hampshire Ornithological Society • RSPB • Sussex Wildlife Trust • Sussex Ornithological Society	1
Professional Boatman's Association	1
Recreational and Sports Anglers	1
Residents of the Borough of Havant • Representing Residents Associations	1
Royal Yachting Association	1
Sussex Inshore Fisheries and Conservation Authority	1
Wildfowlers	1
Other Interests in Chichester Harbour: • Friends of Chichester Harbour • Farming and Landowning Interests	2

Figure 8 - Members of the Chichester Harbour Conservancy Statutory Advisory Committee
Source: CHC. (2020)

	Members
Hampshire County Council	4
West Sussex County Council	4
Chichester District Council	2
Havant Borough Council	2
Statutory Advisory Committee	3

Figure 9 – Members of the Chichester Harbour Conservancy Statutory Board
Source: CHC. (2020)

The CHC has published an AONB Management Plan, since 2004, on behalf of several local councils: Chichester District Council, Hampshire County Council, Havant Borough Council and West Sussex County Council (CHC, 2019). Each review occurs every five years (last updated in 2019) to provide an agreed partnership framework for the CHC to engender an integrated and collaborative approach towards the management of the AONB and its special qualities (CHC, 2019). Figure 10 outlines the special qualities of Chichester Harbour. However, a combination of pressures, including sea level rise, climate change, water quality, marine pollution, rising levels of development and coastal tourism, demonstrates that anticipatory management approaches towards AONBs is crucial for the long-term protection of protected coastal landscapes. Thus, the CHC have used the ICZM approach to preserve and enhance the social, economic and environmental value of Chichester Harbour AONB resulting in a flexible management strategy (CHC, 2019).

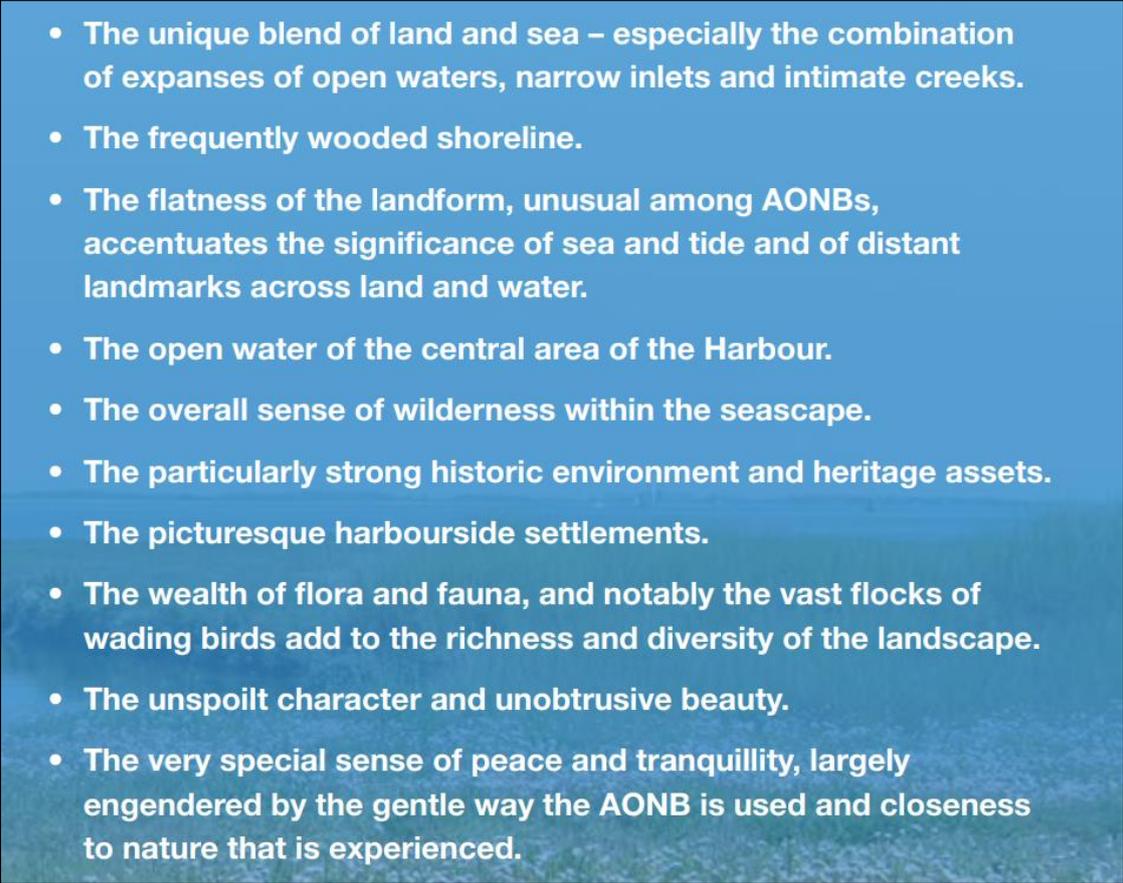
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- The unique blend of land and sea – especially the combination of expanses of open waters, narrow inlets and intimate creeks.
 - The frequently wooded shoreline.
 - The flatness of the landform, unusual among AONBs, accentuates the significance of sea and tide and of distant landmarks across land and water.
 - The open water of the central area of the Harbour.
 - The overall sense of wilderness within the seascape.
 - The particularly strong historic environment and heritage assets.
 - The picturesque harbourside settlements.
 - The wealth of flora and fauna, and notably the vast flocks of wading birds add to the richness and diversity of the landscape.
 - The unspoilt character and unobtrusive beauty.
 - The very special sense of peace and tranquillity, largely engendered by the gentle way the AONB is used and closeness to nature that is experienced.

Figure 10 – The special qualities of the Chichester Harbour AONB

Source: CHC. (2020)

This is reaffirmed within the CHC's 'Vision to 2050', with continuing objectives to ensure surrounding coastal communities and local businesses will be able to adapt to future pressures which challenges the management of the AONB (CHC, 2019). Thus, adopting an adaptive management approach, a key principle of ICZM, will allow the AONB managers to undertake data collection and analysis, allowing changes in decision-making to be reviewed, checked and amended for the purpose of the CHC AONB Annual Review (Creed et al., 2018; CHC, 2019). Despite the difficulty in making predictions to what extent coastal pressures will impact Chichester Harbour AONB, it can be argued that the implementation of adaptive management can help estimate changes in future coastal processes, land use and identification of indicators (to potentially mitigate adverse effects) to give impetus to appropriate interventions outlined in coastal management plans (Creed et al., 2018). Public awareness and sound understanding of coastal pressures and associated impacts is therefore crucial, which can be achieved through increased perception of the Chichester Harbour AONB Management Plan. Embedding this attitude within the stakeholder engagement mechanism increases public value of the surrounding coastal environment of Chichester Harbour, thus its special qualities and its resources can be continuously enjoyed in a sustainable manner.

4.0 Methodology

4.1 Assessment indicators

This research provides an assessment of the views of harbour users in relation towards their awareness and understanding of the role and purpose of the Chichester Harbour AONB Management Plan. Furthermore, it analyses harbour users' level of awareness and understanding of the following indicators: their level of recreational activity undertaken in the AONB, environmental designations in the area, what impact impending pressures have on AONBs, the success and importance of AONBs and any changes (positive or negative) occurring within Chichester Harbour AONB and its Management Plan.

4.2 Methodological approach and data collection

A mixed-methods research based approach has been used to collate data collected both from harbour users and members of the CHC Statutory Advisory Committee, aiming to offer a framework for combining methods (Timans et al., 2019). Furthermore, this approach promotes the collation and appraisal of both qualitative and quantitative data within the same study (van Griensven et al., 2014). Using this research paradigm, methodological pluralism, allows researchers more flexibility alongside a deeper understanding of the critical issues involved in the topic (Johnson et al., 2007). For this study, data was collected via online questionnaires and Zoom video meetings.

Due to the ongoing COVID-19 pandemic (as of October 2020), social distancing measures prohibited face-to-face meetings, therefore remote research was deemed the most appropriate method of data collection. Remote research methods have proven beneficial by reducing time and cost for conducting studies, easier participation for individuals and enhancement of generalisability of findings (Saberi, 2020).

Questionnaire surveys collect the views of respondents about specific topics, which generates sound and systematic information, albeit at no to minimal cost in a finite timeframe (Lee, 2007). Google Forms, a free, web-based survey application, was used to create the questionnaire, then distributed via direct email to all harbour users. In total, there are approximately 9,000 harbour users based in Chichester Harbour AONB; all of which were contacted (CHC, 2019). However, questionnaires do not provide depth of the views given, albeit a useful tool (Popper, 2004). It is critical to increase the credibility of results by achieving high response rates, a key objective of survey administration, due to the likelihood of some respondents not participating (Burkell, 2003). Thus, participants were notified of the survey by the CHC via email distribution beforehand to establish trust and improve response rates. Moreover, a cover letter was included at the beginning of the questionnaire outlining the purpose and objectives of the study, providing details of participants to receive an optional summary of the results as a final incentive. Respondent anonymity was upheld “to maximise protection of participants’ identities and improve cohesion whilst maintaining the value and integrity of the data” (Saunders et al., 2015, p. 617).

The questionnaire featured both open and closed format questions; open questions do not provide pre-defined choices whilst closed questions offer a limited range of answers (Fink, 2017). Therefore, it can be argued that utilising this approach would anticipate the achievement of a comprehensive understanding (Creed et al., 2018). A pilot study was conducted before the survey was distributed; individuals answered to identify areas of improvement of the questionnaire itself with an aim of improving response rates. As a result, some questions were altered for clarification or removed entirely. The questionnaire was divided into two topic related sections in accordance with the indicators in Section **4.1**; questions were ordered carefully to ensure a detailed insight was prominent upon completion of the survey. Figures 5 and 6 were made using ArcGIS Pro.

As part of the mixed methods approach to this study, further data collection was undertaken in the form of semi-structured interviews to gain a deeper critique and understanding of the trends identified in the questionnaire data (Sennitt, 2015). The interviewees were selected from key stakeholders of the CHC Statutory Advisory Committee, based on individual expertise of the Chichester Harbour AONB Management Plan, amongst other assessed indicators (see Section **4.1**).

One of the most widely used qualitative methods in research, semi-structured interviews are successful in willing interviewees to disclose more information compared to a written response, thus answers are detailed yet illuminating (Bryman and Bell, 2011). Semi-structured interviews allow greater flexibility and freedom in the manner of which interviewees respond, providing a deeper insight into their opinions by encouragement of an open discussion (Cameron and Price, 2009). Interviewees were also asked to complete a digital consent form and read an information sheet to convey the role and purpose of their participation within the study in a clear and unambiguous way, once again ensuring their anonymity to promote initial trust and improve response rate (Nusbaum et al., 2017). All interviews were carried out over a two-week period. Their length of time was no longer than forty minutes, including any additional comments interviewees wished to make. Once again, an explanation of the study was given beforehand. The interviews were recorded, with permission, using Zoom and saved to a secure memory stick which only the researcher had access to.

Data collected via the online questionnaire was stored within Google Forms in a separate response section. Interviews were transcribed onto separate Microsoft Word documents. All data was thus evaluated and subsequently imported to Microsoft Excel, where graphs were produced to visually illustrate relationships in the data (Slutsky, 2014).

4.3 Methodological analysis

In total, there were 513 recorded responses of the online questionnaire and four interviews held. Several questions required respondents to consider all factors, dependent upon the question, and then rank them in order of personal importance. Therefore, one option may be selected by many respondents, however it may not be a true reflection of the most important factor. Ranking questions determine the average ranking for each option, thus calculating which answer was favoured overall. Furthermore, it is common for researchers to use average ranking analyses when presenting results, in addition to stakeholders being able to make judgements on different factors or approaches.

Percentages were applied to several graphs to illustrate larger differences in answers. Both Pie charts and bar graphs were used, both being comprehensive and the latter being useful by illustrating comparisons between different datasets. An 'other' category was provided for a few questions, which was frequently selected and required respondents to provide a further answer. As a result, graphs representing this detail grouped all further answers under the 'other' category into a larger percentage. It could be argued that this decision is an inaccurate representation as not all further answers are outlined, thus an appraisal of these responses might not be as effective. However, the data is still relevant to the study, despite being reduced to a single dataset, to simplify understanding from a visual perspective.

Minor improvements could be made to the research methodology of this study, if conducted again, to improve efficiency. One question of the online survey received objection from seven respondents after the survey had closed, with regards to its layout. Correspondence between the researcher and the respondents occurred to gain further insight to this issue and would be restructured if the questionnaire were distributed again. Moreover, it would have been beneficial to accept responses for the questionnaire for a longer timeframe than four weeks for more responses, although survey abandonment rates might increase if left open for too long.

5.0 Results and discussion

Overall, the research design for this study was successful in achieving a good level of response for research which required appraisal of its assessment indicators. The questionnaire achieved a 5.7% response rate, and 4 stakeholders were interviewed who possess differing levels of knowledge or opinion within their respective organisations.

5.1.1 Recreational activity in Chichester Harbour AONB

Figure 11 shows the various recreational activities undertaken by respondents in Chichester Harbour AONB. The questionnaire data collected for this research suggests that walking is the most popular recreational activity undertaken in the AONB, with 88% of respondents and all four interviewees stating they partake in this pursuit. Sailing is the second most popular recreational activity undertaken, with 62% of respondents and all four interviewees participating. Jet skiing is the least popular activity, with only two people being participants. Figure 12 shows the amount of recreational activity undertaken by respondents in Chichester Harbour AONB, from a daily to yearly basis. 240 respondents walk in the AONB on a regular basis, from a daily to weekly scale. 158 respondents and all four interviewees walk in the AONB only monthly. 173 respondents and one interviewee sail in the AONB on a weekly basis, whilst only 106 respondents and three interviewees sail monthly. Jet skiing is only undertaken twice yearly in the AONB. Figure 13 illustrates the percentage of respondents who are recreational club members based in Chichester Harbour AONB. It is closely split, with 48% of respondents answering yes and 52% saying no. All four interviewees were also members of recreational clubs.

Outdoor recreational activity, especially in lockdown, provides socialisation opportunities and physical and mental wellbeing (Samuelsson et al., 2020). In other AONBs, walking and sailing events are organised by public volunteers, alongside walking routes and sailing boundaries being designated by stakeholders (Cotswolds AONB, 2020; Suffolk Coast & Heaths AONB, 2020). The CHC could utilise stakeholder engagement approaches by holding community workshops, education events and distributing emails promoting the benefits of outdoor recreational activity within the AONB.

Furthermore, the CHC could further promote recreational clubs based within the AONB through social media, websites and email distribution, which could increase the awareness of the clubs themselves and the aforementioned benefits they provide. Despite not being able to ban jet skiing outright, minimal amounts of people jet ski in the AONB. Thus, educating the public about potential noise disturbance coupled with encouragement of jet ski use below defined speed limits and sensitive times, and outside water with protected coastal birds and breeding colonies through email distribution and signs in the AONB would prove beneficial (RSPB, 2015).

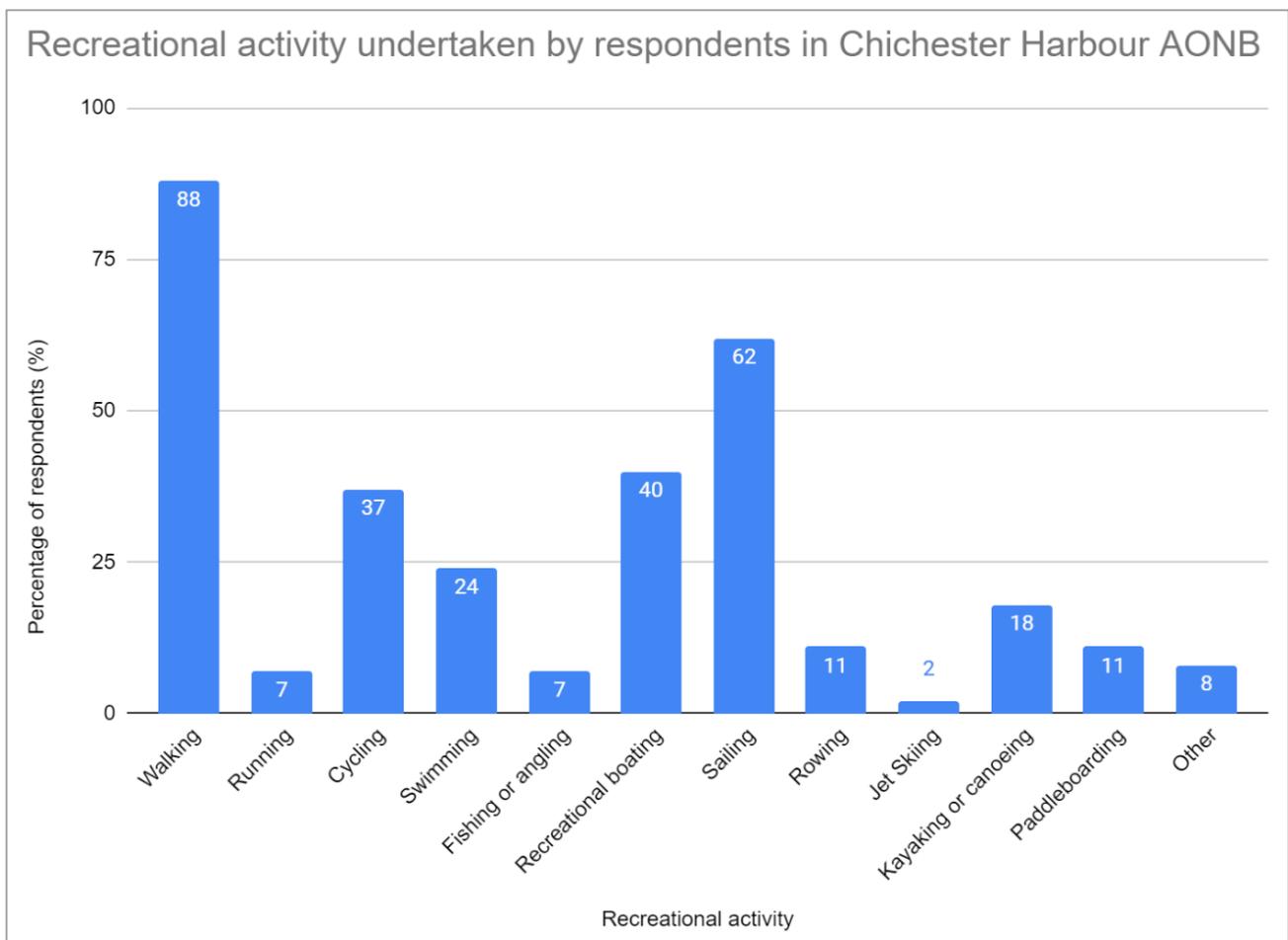


Figure 11 – Graph illustrating the types of recreational activity undertaken by respondents in Chichester Harbour AONB

Source: Barnes. (2020)

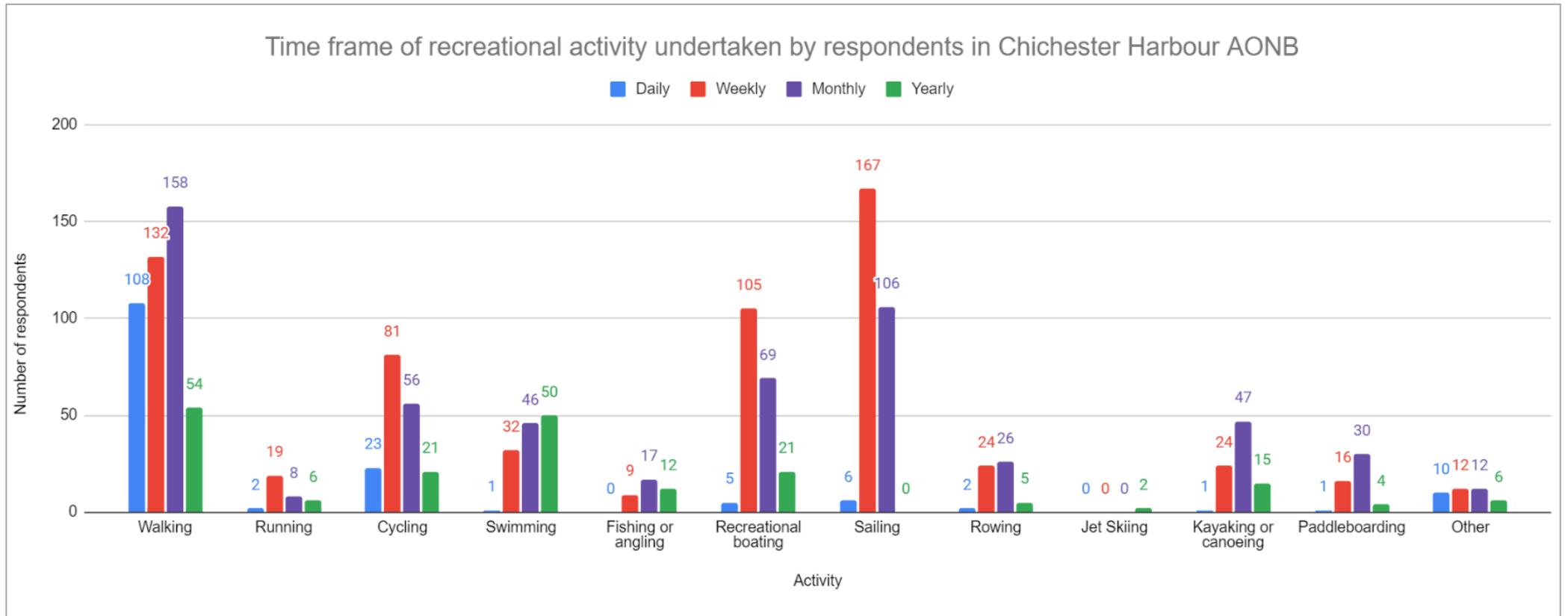


Figure 12 – Graph illustrating the different time frames of recreational activity undertaken by respondents in Chichester Harbour AONB

Source: Barnes. (2020)

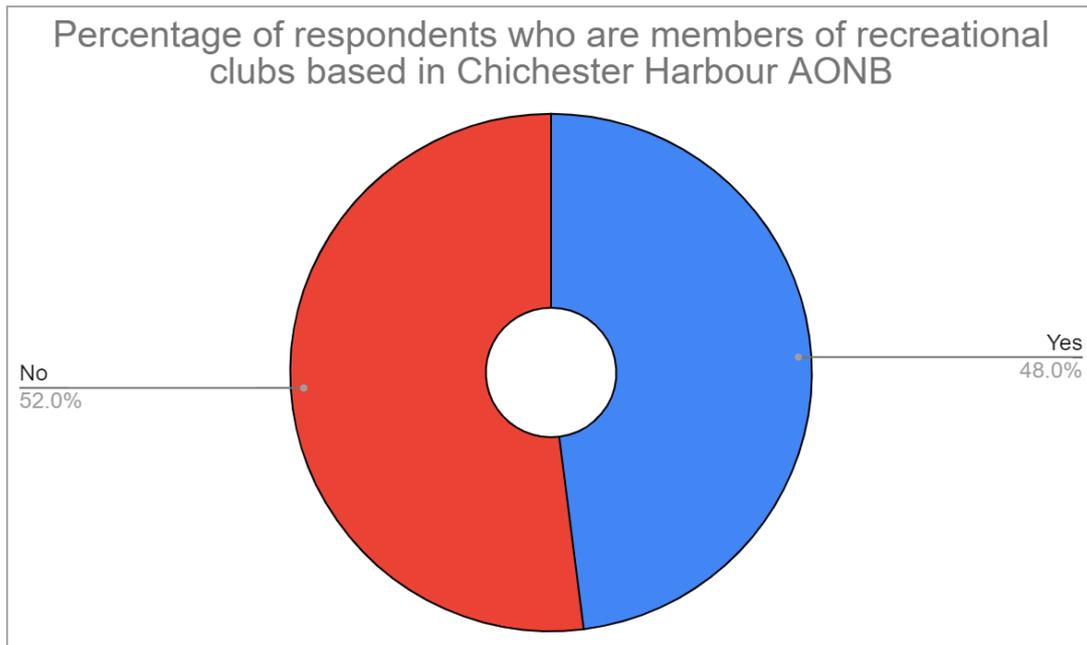


Figure 13 – Pie chart illustrating the percentage of respondents who are members of recreational clubs based in Chichester Harbour AONB

Source: Barnes. (2020)

5.1.2 Perception of environmental conservation of Chichester Harbour AONB

Figure 14 shows the awareness of respondents towards environmental designations in Chichester Harbour. This chart suggests that AONB designations are the most widely known, with 495 respondents saying yes. SSSIs are also well known, with 448 respondents saying yes. Ramsar sites are lesser known, 273 respondents stated they are not aware of the designation. Figure 15 shows the level of understanding of respondents towards the environmental designations in Chichester Harbour. Overall, SSSIs have the best level of understanding, with 470 respondents having little to excellent knowledge about the designation. AONBs also have a good level of understanding, with 470 respondents having little to excellent knowledge about the designation. Ramsar sites have the least level of understanding, with 292 respondents having no knowledge about the designation.

It is evident that a large proportion of respondents are aware of AONB designations and have good knowledge about them. However, this has shown in recent studies to vary greatly; public awareness and concern is generally higher for the ‘attractiveness’ of AONBs, rather than for their biodiversity or conservation value or the role they fulfil within their ecosystem (McKinley et al., 2020).

It can also be argued that the ongoing COVID-19 pandemic has boosted the awareness of AONB designations; household confinement has increased the frequency of visits to natural environments, including AONBs, thus people have a higher awareness and disposition to protected landscapes (Rosseau and Deschacht, 2020). The CHC can utilise stakeholder engagement to maintain this level of awareness and understanding through educational events, community workshops and signage. Furthermore, increased social media coverage about the environmental designations would have a “positive impact on public support for policies, depending on the content and framing of the message, the source of the information and individual characteristics” (Rosseau and Deschacht, 2020, p. 2). Protected landscapes are a source of sound educational knowledge, therefore visitors should have excellent, sustained knowledge of the benefits they receive from them and the measures being taken to safeguard the provisions they provide (McNeely, 1994; Booth et al., 2009).

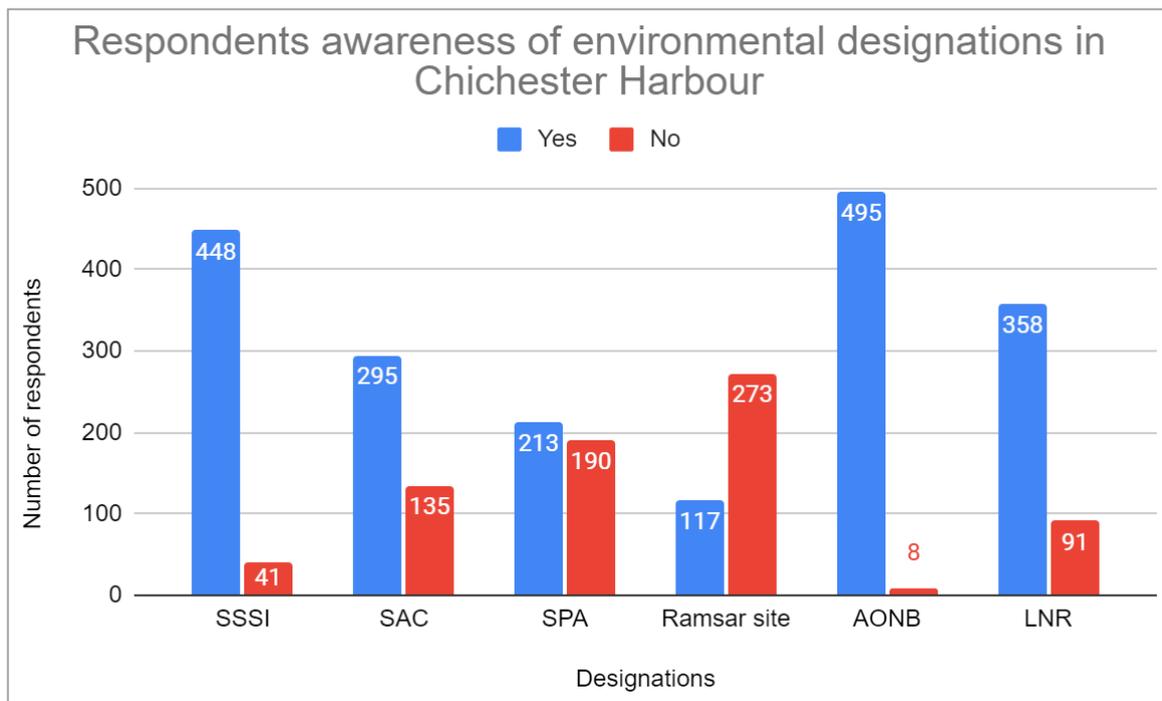


Figure 14 – Graph illustrating the awareness of respondents towards environmental designations in Chichester Harbour.

Source: Barnes. (2020)

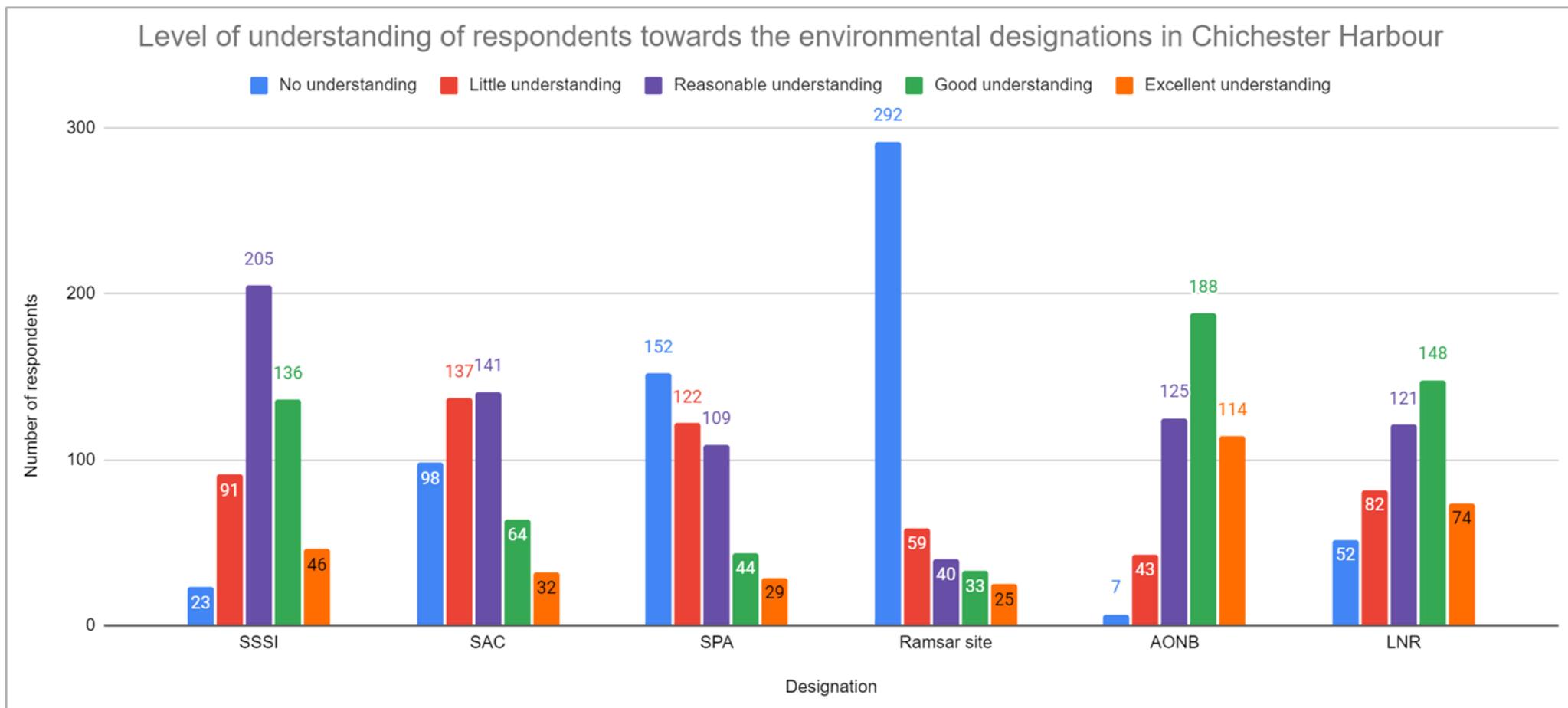


Figure 15 – Graph illustrating the awareness of respondents towards environmental designations in Chichester Harbour.
Source: Barnes. (2020)

Figure 16 illustrates the percentage of respondents aware of the special qualities of Chichester Harbour AONB, previously shown in Figure 10. A large majority, 80% of respondents, know of them. Figure 17 shows the ranked importance, by respondents, of the special qualities associated with the AONB, in accordance with subjective opinion. Respondents regard the unique blend of land and sea as the most important and the unspoilt character and beauty of the AONB as the second most important special qualities. The flatness of the area is regarded as the least important special quality of the AONB by respondents. Figure 18 illustrates the ranked level of impact pressures have on Chichester Harbour AONB, based on subjective respondent opinion. 451 respondents state that they feel climate change is the environmental pressure which has the most overall negative impact on the AONB, on a moderate to extreme scale. Recent studies suggest that protected coastal landscapes and their special qualities face significant uncertainties due to the complexity of climate change, amongst other pressures (Pasquier et al., 2020). 100% of AONB Management Plans identify adaptation to climate change as a primary issue (Horswill et al., 2020). The CHC should strengthen the Management Plan on the next review by setting clear priorities and actions using adaptive management to deal with the integrated challenges of climate change which threaten the AONB special qualities, as recommended by the Glover Review (Bell and Garrod, 2019).

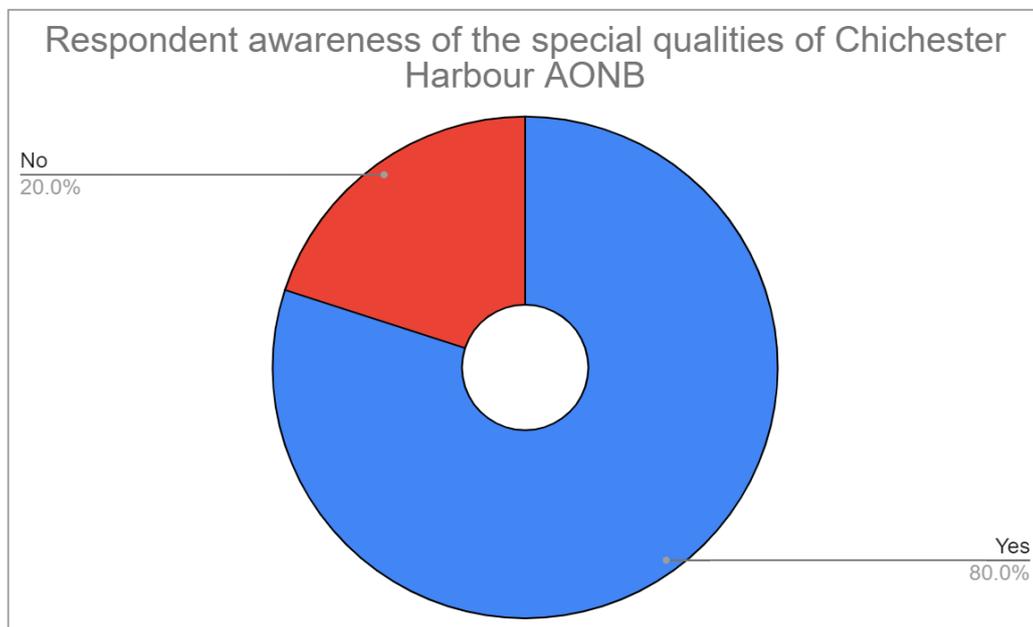
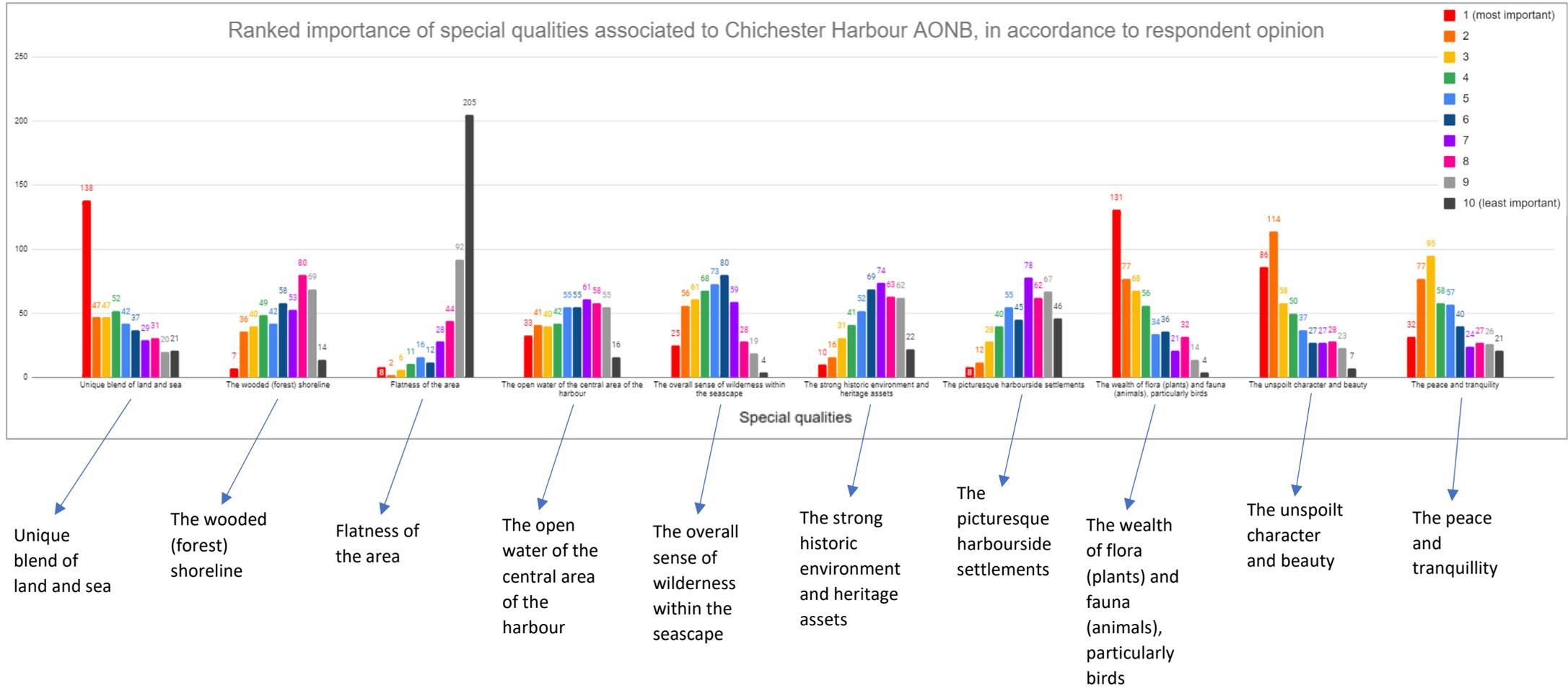


Figure 16 – Pie chart illustrating the awareness of respondents towards environmental designations in Chichester Harbour.

Source: Barnes. (2020)

Figure 17 – Graph illustrating the ranked importance of special qualities associated to Chichester Harbour AONB, in accordance with respondent opinion

Source: Barnes. (2020)



464 respondents state that they feel beach (shoreline) pollution, from littering, is the human pressure which has the most overall negative impact on the AONB, on a moderate to extreme scale. 383 respondents stated that noise pollution is the least impactful human pressure on the AONB. The increased, widespread usage of single-use plastics (e.g. bags, containers, cups and plastic cutlery) and disposable personal protective equipment (PPE) is evident during the ongoing COVID-19 pandemic. Improper disposal of these items has shifted the primary sources of marine litter pollution, causing a spike in plastic pollution to be found on coastlines, which is expected to continue until the pandemic is over (Canning-Clode et al., 2020). This has been exacerbated by increased levels of tourism; influxes of visitors occurred once lockdown restrictions were eased and subsequently more littering occurred (Hudson, 2020). To combat this, the CHC could install more rubbish bins with some lids being animal proof, reach out to local newspapers and channels to promote the impacts of marine litter on shorelines and increase signage to encourage visitors to discard litter properly, amongst others. Stakeholder engagement can also be utilised through volunteer marshals patrolling the AONB to foresee proper litter disposal and promotion of volunteer litter picking events.

Finally, there is opportunity to utilise stakeholder engagement to hold community workshops and education events to inform the public about the direct impacts of climate change, such as sea level rise, and the extent indirect impacts caused by anthropogenic activity which adversely affect the AONB.

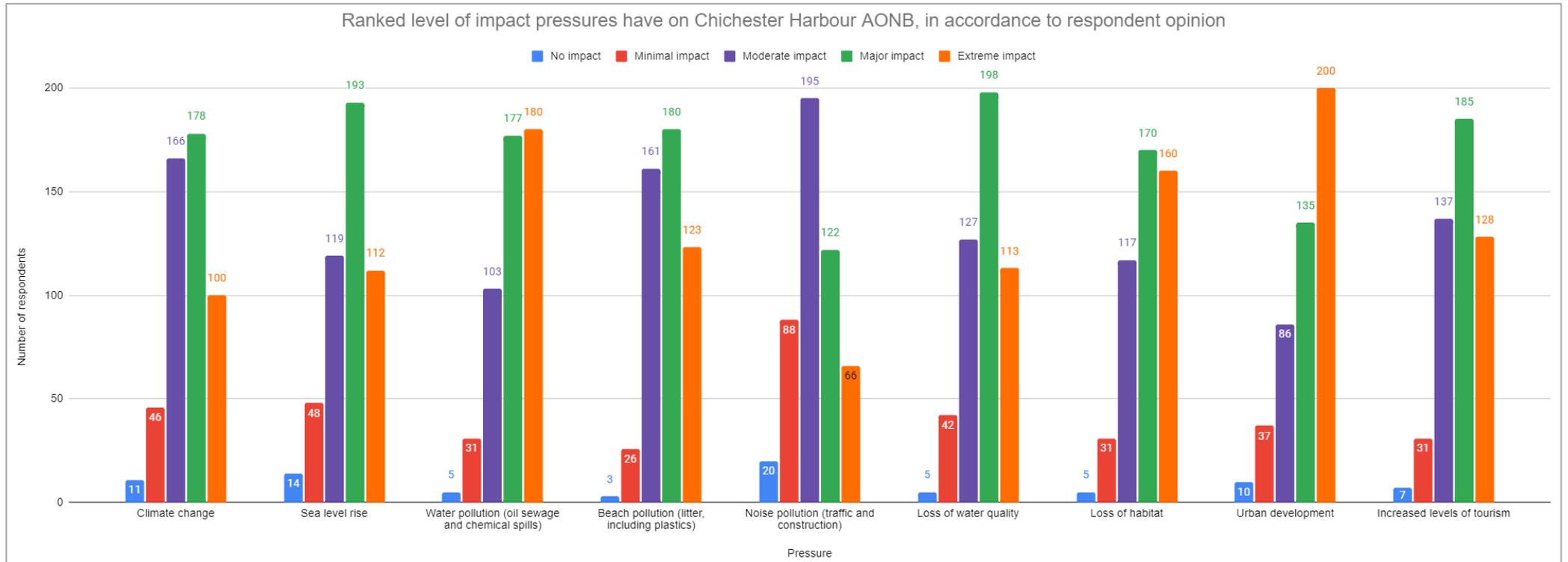


Figure 18 – Graph showing the ranked level of impact pressures have on Chichester Harbour AONB, in accordance with respondent opinion

Source: Barnes. (2020)

5.1.3 Awareness and understanding of the Chichester Harbour AONB Management Plan

Figure 19 shows the level of understanding of respondents towards the role and purpose of the Chichester Harbour AONB Management Plan. 40% of respondents feel they have a reasonable understanding (somewhat understanding its role and purpose) of the Management Plan, however only 24% of respondents feel they possess a good to excellent understanding (mostly to fully understanding its role and purpose), 8.3% lower than 36% of respondents having no to little understanding (not heard to heard of the plan). Figure 20 shows the level of respondent informance towards positive or negative changes occurring within the AONB. 58% of respondents only feel somewhat informed of these changes. Figure 21 shows the level of respondent informance of changes occurring to the Chichester Harbour AONB Management Plan. 84% of respondents feel not at all informed to somewhat informed about any changes occurring.

Other AONBs have shown that stakeholder engagement mechanisms to improve awareness of changes to the area or the respective Management Plan have been successful; “involving local groups and individuals at the outset of planning has helped identify the challenges which the AONB faces, be it an environmental or human cause, but it also gives the local community a sense of ownership” (High Weald AONB, 2014, p. 1). This statement is proved further in Figure 22a and 22b, where 54% of respondents agreed and 34% strongly agreed that it is crucial for users to be informed of all aforementioned changes. All four interviews also strongly agreed. The CHC would benefit from holding community workshops, education events, distributing emails and promotion on social media when any major changes occur to the AONB or its Management Plan. AONB users whose input and support recognised and valued for these changes demonstrate a collaborative and inclusive partnership between AONB managers and users, thus regarded as a successful stakeholder engagement approach.

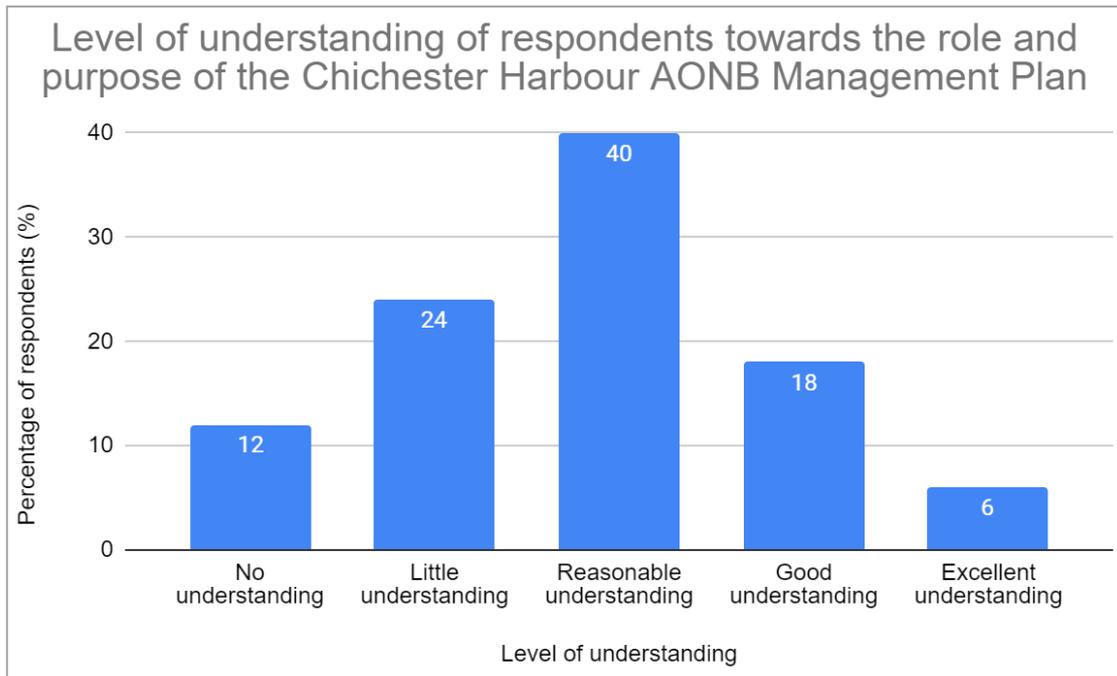


Figure 19 – Graph illustrating the level of understanding of respondents towards the role and purpose of the Chichester Harbour AONB Management Plan
Source: Barnes. (2020)

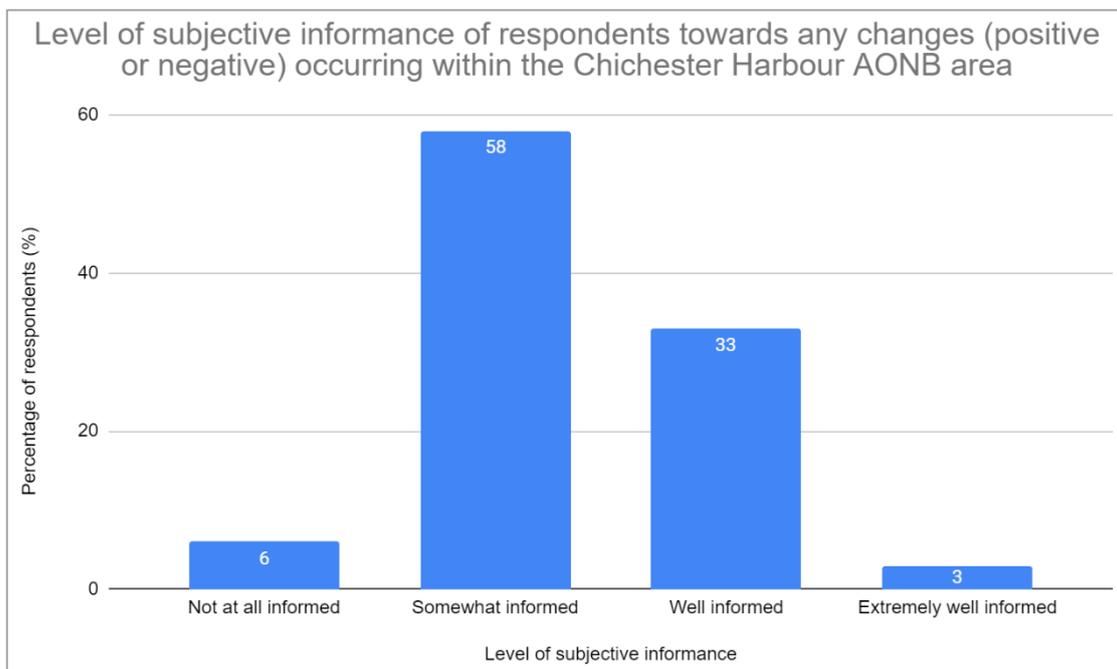


Figure 20 – Graph illustrating the level of respondent informance towards positive or negative changes occurring within Chichester Harbour AONB
Source: Barnes. (2020)

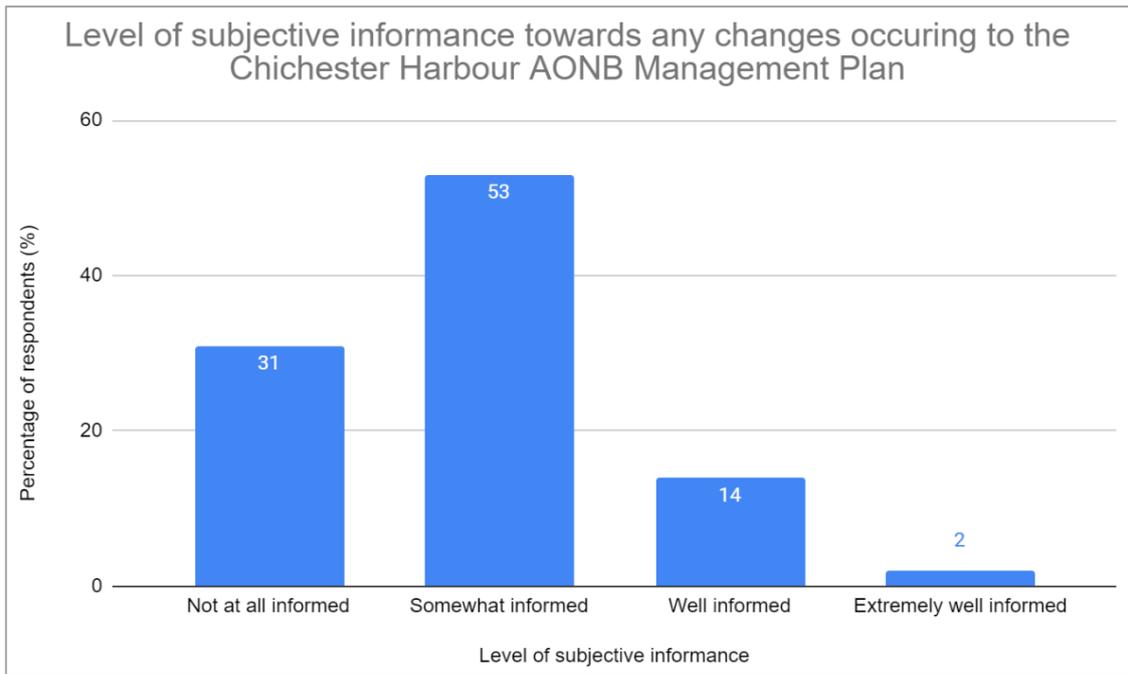


Figure 21 – Graph illustrating the level of respondent informance of changes occurring to the Chichester Harbour AONB Management Plan

Source

“It is essential that marine and coastal users who regularly visit Chichester Harbour and use its resources have the opportunity to be engaged and participate in an adaptive management process which protects and conserves this Area of Outstanding Natural Beauty and be continuously informed of any major changes to the Management Plan”.

Figure 22a – Statement of appraisal

Barnes. (2020)

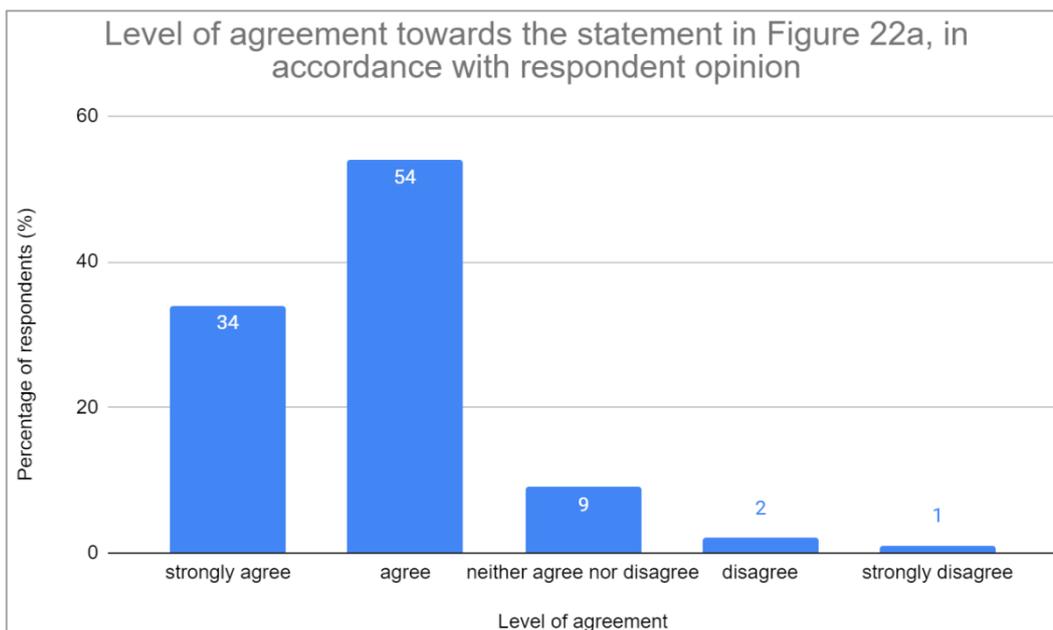


Figure 22b – Graph illustrating the level of agreement towards the statement in Figure 22a, in accordance with respondent opinion

Source: Barnes. (2020)

6.0 Conclusion

This research has provided insight into how changes to AONB management would benefit from continuous stakeholder engagement throughout the planning and review process. By appraising the perceptions of the public, it has been possible to ascertain that coastal and marine users of Chichester Harbour have a reasonable awareness and understanding of AONB designations, the changes occurring, how pressures, from coastal processes or anthropogenic activity, impact the special qualities of the landscape. This has also been proved from interviews held with stakeholders of the Statutory Advisory Committee. It has been established that a large majority of respondents and all interviewees support the implementation of adaptive management strategies to protect the AONB from coastal pressures and enhance its natural beauty, alongside utilising stakeholder engagement to increase awareness and understanding of Chichester Harbour AONB and its Management Plan through various methods of informance and education. The CHC can consider these views of the users within the next AONB review and in the aforementioned 'Vision to 2050' document. Despite some uncertainty towards the sway AONB designations will have as they transition to 'National Landscapes', the most suitable management approaches will remain unchanged as their effectiveness cannot be matched.

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Supplementary Material

Questionnaire Template

An appraisal of public perception towards the Chichester Harbour Management Plan and microplastics in Chichester Harbour

We are inviting you to contribute in this postgraduate research project towards (MSc) Coastal and Marine Resource Management, at the University of Portsmouth. Currently being researched is the appraisal of perceptions and attitudes towards the Chichester Harbour AONB Management Plan and the presence of microplastics within Chichester Harbour.

You are being contacted to ask whether you would be willing to support our research by completing a short questionnaire, which should take no longer than 10 minutes depending on whether you wish to make additional comments.

Your input is integral to this research, to help influence the management approaches taken at Chichester Harbour, thus potentially encouraging other statutory authorities (regional and national) to adopt sustainable management approaches towards the perception, awareness and significance of AONBs and microplastics.

This postgraduate project has been awarded a grant from Just One Ocean to help fund this research. Completed questionnaires will remain categorically anonymous and individual responses will not appear in the final research. We are happy to provide you with a summary of the results should you wish to receive them. If so, please complete the appropriate section of the questionnaire.

We would like to take this opportunity to thank you for your time and cooperation.

Yours faithfully,

[Redacted Signature]

Email addresses:

[Redacted Email Addresses]

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An appraisal of public perception towards the Chichester Harbour Management Plan and microplastics in Chichester Harbour

Participant activities undertaken in Chichester Harbour

1. Which of the following recreational activities do you participate in within Chichester Harbour? (please tick all that apply)

- Walking
- Running
- Cycling
- Swimming
- Fishing or angling
- Recreational boating
- Sailing
- Rowing
- Jet Skiing
- Kayaking or canoeing
- Paddleboarding
- Other: _____

2. Out of the following, approximately how often do partake in your chosen recreational activities in Chichester Harbour? (please leave blank for activities that you don't participate in)

	Daily	Weekly	Monthly	Yearly
Walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cycling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing or angling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational boating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sailing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rowing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jet Skiing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kayaking or canoeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paddleboarding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Approximately how far do you travel from home to visit Chichester Harbour?

- Less than 5 miles
- 6 - 10 miles
- 11 - 15 miles
- 16 - 20 miles
- 21+ miles

4. How long have you been a harbour user at Chichester Harbour?

- 0 - 6 months
- 7 - 12 months
- 1 - 5 years
- 6 - 10 years
- 11+ years
- Not licensed

5. Are you a member of any recreational clubs based in Chichester Harbour?

- Yes
- No

If yes, please specify:

Your answer _____

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Environmental Conservation of Chichester Harbour

6. Are you aware of the following environmental designations in Chichester Harbour?

	Yes	No
Site of Specific Scientific Interest (SSSI)	<input type="radio"/>	<input type="radio"/>
Special Area of Conservation (SAC)	<input type="radio"/>	<input type="radio"/>
Special Protected Area (SPA)	<input type="radio"/>	<input type="radio"/>
Ramsar site	<input type="radio"/>	<input type="radio"/>
Area of Outstanding Natural Beauty (AONB)	<input type="radio"/>	<input type="radio"/>
Local Nature Reserve (LNR)	<input type="radio"/>	<input type="radio"/>

7. What is your level of understanding of the purpose of these designations?

	No understanding (not heard of designation)	Little understanding (have heard of designation)	Reasonable understanding (somewhat understand its meaning and purpose)	Good understanding (mostly understand its meaning and purpose)	Excellent understanding (fully understand its meaning and purpose)
Site Specific Scientific Interest (SSSI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Special Area of Conservation (SAC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Special Protected Area (SPA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ramsar site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area of Outstanding Natural Beauty (AONB)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Nature Reserve (LNR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



8. Are you aware of how you can find out more about environmental designations in Chichester Harbour?

- Yes
- No

If yes, please specify how you would go about this:

Your answer _____

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Please read this statement:

In 1964, Chichester Harbour was designated as an Area of Outstanding Natural Beauty (AONB) with the primary purpose to conserve and enhance the natural beauty of this nationally important protected landscape. In 1971, the Chichester Harbour Conservancy was established and remains, to this day, the only Statutory Harbour Authority with responsibility for an AONB. Its purposes extend beyond that of other AONBs, to include leisure, recreation and the conservation of nature. Since 2000, a management plan for Chichester Harbour has been published every 5 years, led by the Conservancy and appropriate councils, providing a framework for action to help protect the surrounding landscape, including its water and land areas.

10. In your own words, please briefly describe why you feel Areas of Outstanding Natural Beauty (AONBs) are important to the British landscape:

Your answer _____

11. Please rank in order of which factors you feel are important to the AONB (1 = most important, 5 = least important):

	1 (most important)	2	3	4	5 (least important)
Wildlife	<input type="radio"/>				
Cultural Heritage	<input type="radio"/>				
Development	<input type="radio"/>				
Accessibility	<input type="radio"/>				
Recreation	<input type="radio"/>				

12. As a user of Chichester Harbour's amenities, how well informed are you of any changes (positive or negative) to the area?

- Not at all informed
- Somewhat informed
- Well informed
- Extremely well informed

13. How well informed do you feel of any changes to the Chichester Harbour AONB Management Plan?

- Not at all informed
- Somewhat informed
- Well informed
- Extremely informed

Please read this statement:

"It is essential that marine and coastal users (stakeholders) who visit Chichester Harbour and use its resources have the opportunity to be engaged and participate in the management planning process which protects and conserves this Area of Outstanding Natural Beauty and be continuously informed of any changes to the management plan".

14. How far do you agree with the statement above?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

15. Are you aware of the 'special qualities' (exceptional features) of Chichester Harbour?

- Yes
- No

16. Please rank in order which special qualities you feel are important to the AONB (1 = most important, 10 = least important):

	1 (most important)	2	3	4	5	6	7	8	9
Unique blend of land and sea	<input type="radio"/>								
The wooded (forest) shoreline	<input type="radio"/>								
Flatness of the area	<input type="radio"/>								
The open water of the central area of the Harbour	<input type="radio"/>								
The overall sense of wilderness within the seascape	<input type="radio"/>								
The strong historic environment and heritage assets	<input type="radio"/>								
The picturesque harbourside settlements	<input type="radio"/>								
The wealth of flora (plants) and fauna (animals), particularly birds	<input type="radio"/>								
The unspoilt character and beauty	<input type="radio"/>								
The peace and tranquility	<input type="radio"/>								

17. Please indicate the level, in your own opinion, of which environmental pressures have the most impact on the Chichester Harbour area:

	No impact	Minimal impact	Moderate impact	Major impact	Extreme impact
Climate change	<input type="radio"/>				
Sea level rise	<input type="radio"/>				
Water pollution (oil, sewage and chemical spills)	<input type="radio"/>				
Beach pollution (litter)	<input type="radio"/>				
Noise pollution (traffic and construction)	<input type="radio"/>				
Loss of water quality	<input type="radio"/>				
Loss of habitat	<input type="radio"/>				
Urban development	<input type="radio"/>				
Increased levels of tourism	<input type="radio"/>				

Interview Questions

1. Do you participate in any recreational activities within Chichester Harbour? If yes, which ones?
2. Approximately how often do you partake in your specified recreational activities?
3. Approximately how far do you travel from home to visit Chichester Harbour?
4. Approximately how long have you been a harbour user at Chichester Harbour?
5. Are you a member of any recreational clubs based in Chichester Harbour? If yes, which one(s)?
6. How long have you been a member of the Chichester Harbour Advisory Committee?
7. What is your primary role within the Chichester Harbour Advisory Committee?
8. The Advisory Committee has several representatives from different organisations, such as Natural England, why do you think this is beneficial?
9. In your own words, describe why you feel Areas of Outstanding Natural Beauty are important to the British Landscape.
10. My survey results suggest that 90% of people feel that overall, beach/shoreline pollution (litter) has the biggest impact on Chichester Harbour. As a user of Chichester Harbour, do you feel that litter has increased in the area and what do you think should be done to combat this?
11. My survey results suggest that 89% of people feel that overall, water pollution (sewage, oil and chemical spills) has the second biggest impact on Chichester Harbour. As a user of Chichester Harbour, have you noticed an increase in water pollution in the area and what do you think can be done to improve water quality?
12. Approximately 1.5 million people visit Chichester Harbour every year. My survey suggests that 87% of people feel that overall, tourism has the third largest impact on Chichester Harbour. What negative impacts do you feel increased levels tourism has had on the local area?
13. My survey results state that 44% of people feel that urban development has the most extreme impact overall on the Chichester Harbour area, why do you think this is?
14. However, an interesting point to make is that noise pollution (traffic and construction noise) was the least concerning pressure (20% no to minimal impact) to impact Chichester Harbour, which could increase as more urban development occurs. Why do you feel people are not concerned about it presently?
15. My survey results suggest that 64% of people feel they are not at all informed to somewhat informed of positive and negative changes in Chichester Harbour, what changes do you think could be made to improve this?
16. My survey results suggest that 84% of people feel that they are not at all informed to somewhat informed about changes made to the Chichester Harbour AONB Management Plan. Do you think it is important for users of Chichester Harbour to be aware of changes to the Management Plan? Why is this?
17. In your opinion, is there anything else that can be done by local authorities responsible for the management of Chichester Harbour to improve the area?
18. Are there any additional comments you wish to make?

Interview Participant Information Sheet
(sent out before interviews were conducted)

(MSc) Dissertation Research Project Participation Information Sheet

Study Title: An appraisal of public perception towards the Chichester Harbour AONB and its Management Plan

Researcher: [REDACTED]



You are being invited to participate within the above study. Before taking part, please read the below information to understand the purpose of the research project and how the information you provide will be used. You may discuss this study with others. If you require any further information with regards to this research project, please see the researcher's contact details:

Email address: [REDACTED]

Telephone (mobile): [REDACTED]

What is the purpose of this study?

To critically evaluate the perception of coastal and marine users towards Chichester Harbour, an Area of Outstanding Natural Beauty (AONB). This research project will be used to help influence future management approaches to increase public awareness of the Chichester Harbour AONB Management Plan and promote best practice of coastal resources within Chichester Harbour.

Why have I been invited?

Interviewees were contacted, with permission from the Chichester Harbour Conservancy, based on their place in the Chichester Harbour Advisory Committee. Your expertise will prove invaluable to this research.

Do I have to participate?

It is your choice whether you wish to participate in this study. If you consent to take part, you will have been sent a consent form to sign, send back to the researcher and keep a copy for reference.

What will happen if I take part?

If you consent to participate, you will be interviewed over an appropriate online video platform (i.e. WebEx, Zoom, Google Meets or other). The interview will last no longer than 40 minutes. You will be audio recorded but will remain completely anonymous – the recording will not be distributed beyond the researcher.

What will I have to do?

Answer questions about your role in the Chichester Harbour Advisory Committee, your knowledge of Chichester Harbour and your opinion about the current management approaches in place and what can be done to improve them.

Are there any disadvantages of taking part in this study?

The interview will aim to last no longer than 40 minutes, which may prove to be an inconvenience.

What are the advantages of taking part in this study?

The information you provide will be used in this research project to help influence future management approaches to increase public awareness of the Chichester Harbour AONB

Management Plan with the aim to promote sustainable use of coastal resources within Chichester Harbour.

Will my participation in the study be confidential?

The information you provide to answer questions during the interview will be included within the final research. However, your name will not be used. Participant demographics such as age may be asked. Please be assured that complete anonymity (name) of all interviewees will be respected. Participants have the right to check their response with the researcher and correct any errors.

What will happen if I choose to withdraw from the study?

After you have provided consent to participate within the study, you may withdraw at any time before data is collated into graphs. If during the interview you wish to withdraw, the researcher will terminate the interview early. If you do not wish for your interview to be included in the final research, it will not be used and deleted. However, once the data has been collated into graphs to be included in the research project, it will not be possible to withdraw your contribution.

What if there is a problem?

If you have any queries or concerns about this research project, please contact the researcher or their assigned dissertation supervisor using the details provided:

Researcher: [REDACTED]

Dissertation Supervisor: [REDACTED]

If you wish to make a formal complaint about this research project, please contact the Head of School of the Environment, Geography and Geosciences (SEGG) using the provided details:

Head of School: [REDACTED]

What will happen to the information I provide?

Your interview will be analysed by the researcher and included within a postgraduate dissertation. The data will be collated into graphs and be present within the final research. If you wish to receive a copy of the postgraduate dissertation once completed, please contact the researcher.

Who is organising and funding the research?

The research is being organised within the SEGG Department at the University of Portsmouth. The researcher has been awarded a grant by Just One Ocean, a local charity, to help fund this research project. Please see the link below for more information:

<https://justoneocean.org/portfolio/public-perception-towards-the-chichester-harbour-aonb-management-plan>

Who has reviewed the study?

The dissertation supervisor has signed and approved this research project within the SEGG Department of the University of Portsmouth. An ethics form for this study has been completed and approved by the Research Ethics Committee to protect your interests.

Concluding Statement:

Thank you for taking the time to read this participation information sheet. If you wish to take part in this study, please complete the consent form provided and send this to the researcher. Please keep an electronic copy of both for reference. Your input is integral to this project and is greatly appreciated by the researcher.

Interview Consent Form Template

(MSc) Dissertation Research Project Consent Form

**Study Title: An appraisal of public perception towards the Chichester Harbour
AONB Management Plan**



Researcher: [REDACTED]

(Please check all options)

1. I confirm that I have read and understand the participation information sheet for the above research project, have had the opportunity to consider the information, ask appropriate questions and subsequently answered
2. I understand that my participation is voluntary and that I may withdraw at any time for any given reason (before data arrangement into graphs)
3. I understand that data collected during the study, may be looked at by individuals from the University of Portsmouth, or from corresponding authorities (Chichester Harbour Conservancy) and I give permission for these individuals to have access to my data
4. I agree to my interview being audio recorded
5. I agree to being quoted verbatim
6. I am aware that any accounts I provide will be anonymised and any personal information (name) that I provide will not be included in the final research
7. I give consent to take part in the above study

Name of Participant:

Date: Click or tap to enter a date.

Signature (print name):

Name of Researcher:

Date: 09/08/2020

Signature (print name):

(When completed – 1 copy for participant reference, 1 copy for Researcher reference)