Investigating marine citizenship and its role in creating good marine environmental health

Submitted by

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to the

University of Exeter

as a thesis for the degree of

Doctor of Philosophy in Environment, Energy and Resilience

In March 2021

I certify that all material in this thesis which is not my own work has been identified and that any material that has previously been submitted and approved for the award of a degree by this or any other University has been acknowledged.

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Number of words: 92,646

ABSTRACT

The negative anthropogenic impacts upon the world ocean are accelerating. Marine citizenship has been proposed as a policy channel to work at an individual level of responsibility to improve marine environmental health and contribute to the achievement of a sustainable future. This interdisciplinary research reflects the principles of post-normal science, through its epistemologically pragmatic and pluralist approach to broadening our understanding of marine citizenship.

Drawing on environmental psychology, human geography, environmental law, green political theory, and sociology, this research considers marine citizenship according to four key research questions: i) What is marine citizenship and who participates in it? ii) How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants? iii) How do motivational and value-based factors influence marine citizenship choices? And iv) How do place-related factors influence the practice of marine citizenship? Mixed methods were used to bring together a range of data and maximise their thesis contribution. The research design consisted of an online survey of active marine citizens reached via three case studies: two community marine groups and one national citizen science project. This was followed by ethnographic observation of marine citizenship in practice and open-ended interview of purposively selected participants, to maximise insight into diversity of marine citizens and gain in-depth qualitative data.

The results provide a number of novel insights into the conception and motivation of marine citizenship. In my research, prevailing interpretations of marine citizenship as a set of pro-environmental behaviours are extended by situating the concept within citizenship theory. Here I give additional focus to the understanding of marine citizenship as the right to construct and transform society's relationship with the ocean, and how public participation in marine decision-making is perceived as being under-served by legislation and procedure. My data show that marine citizenship is influenced by a complex of interacting variables and that there is no one kind of person who becomes a

marine citizen. Yet environmental identity, stimulation and conformity basic human values, climate change concern, place attachment and, in particular, place dependency are important factors for 'thicker' marine citizenship. The research uncovered a human affinity with the ocean through unique marine place attachment, which I call thalassophilia.

These findings challenge normative approaches to pro-environmental behaviour, which frequently focus on environmental education, information, and awareness raising. Creating opportunities for marine experiences promotes attachment to the ocean and in turn 'thicker' marine citizenship. The results collectively point to a marine identity, formed through ocean connectedness and enabled by favourable socio-economic and policy conditions. When associated with good ocean health, marine identity can underpin and be reinforced by marine citizenship. Marine citizenship coincides with broader environmental and civic citizenship; therefore marine experience opportunities may contribute to wider acceptance of policy and public participation in the paradigmatic change now facing humans, as we attempt to mitigate and adapt to climate change in the coming years.

ACKNOWLEDGEMENTS

school and so much uncertainty and extra responsibility, and I would like to thank UKRI for funding an extension to enable me to complete the writing up. The silver lining of the lockdown was that it helped me to better connect with a community of PGRs in my department who, as a distance learner, I would never have met. We moved our writing online and did it together. Thank you my Shut Up and Write friends for helping me through the toughest few months in 2020 when the wall was too high to climb.

Thank you to my children for sometimes leaving me alone to get on with work, particularly when the schools were once again closed, during lockdown three, at the important stage of completing the thesis. And for humouring me as I talked about my research. Thank you for sometimes actually being interested and occasionally being proud of Mum. I hope it won't be too disappointing once I have a proper job. Byron and Indigo you are absolute sweeties and this research has been done for your future.

And finally thank you to my husband, Bucky. Words aren't enough to describe the support you have given me. Our relationship began twenty years ago when I was setting on the path for my first attempt at a PhD and I promised you I was going to be a Doctor – I'm sorry it took so long! You have been my rock, my sounding board, my babysitter, my cook, my editor, my proof-reader, my therapist, my coach, my love.

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1. CHAPTER ONE: INTRODUCTION

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1.1. THE RESEARCH PROBLEM

Together we are facing a global challenge to stabilise our climate and environment in order to prevent runaway global heating and widespread ecological collapse, caused by human actions. The ocean is a fundamental part of climate regulation, and has particular ecological, economic and social importance for humans (Costanza *et al.*, 1997) which requires active management. To be effective, management of this common resource requires a set of institutions and policy, in particular based on the principles of deliberation, consensus-building, and reflective process, to set the value-base for decision-making (Costanza, 1999). Despite efforts to sustainably manage the marine environment, it continues to face a wide range of anthropogenic threats including overfishing (Pauly *et al.*, 2005), litter (Galgani *et al.*, 2014; Laist, 1997), accumulating microplastics (Wright *et al.*, 2013), pollution (Tanabe *et al.*, 1994), ocean acidification and warming (IPCC, 2014a), and global climate change (IPCC, 2014b). Even local-scale decisions, such as aggregate abstraction or coastal reclamation, can have significant impacts like flooding and coastal demise (Hails, 1975; Kennish, 2001; Newell *et al.*, 1998) over a much wider scale. Marine degradation harms humans, wildlife, and habitats alike, and has reached such significance that action must now be taken to secure the future of humanity and nature.

Due to the continuing degradation of the environment, in 2015 the United Nations resolved to promote sustainability with a series of sustainable development goals and a commitment to:

> *"Protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations."* (United Nations, 2015, p2)

The UN recognises the particular challenges faced by small island nations and coastal areas posed by climate change (United Nations, 2015). The urgency with which environmental issues need addressing, and the recognition of the multi-scalar nature of impacts, has led to the emergence of a range of strategies which move beyond scientific evidence of harm and into the social realm of

human actions. Favoured strategies often reflect disciplinary paradigms, for example some economists and governments (e.g. the UK) favour natural capital and ecosystem services approaches which attempt to incorporate marine and wider environments into the capitalist economy through valuation of the contribution nature makes to the market, together with associated policy changes (e.g. DEFRA, 2018; Fujita *et al.*, 2013; García-Llorente *et al.*, 2016; Karrasch *et al.*, 2014; Rees *et al.*, 2013).

Marine scientists, ecologists and environmental scientists have particularly valued environmental education and ocean literacy interventions to increase awareness and understanding of environmental issues with a view to generating individual behaviour changes and engaging people in marine environmental issues (e.g. Chen and Tsai, 2016; Guest *et al.*, 2015; and as discussed in Schild, 2016). However there is a gap between knowledge or values and taking action (Blake, 1999; Owens, 2000) which means even the best intentions, education, and ethical principles do not necessarily translate into positive action or reduced personal impact on the ocean.

Attempts to identify the reasons for this gap have led to more interdisciplinary investigation of motivations and social barriers. For example, public perceptions research has highlighted that people vary in how they approach the marine environment, and psychological characteristics can be used for tailored messaging, or social marketing, to reach new audiences (Gelcich *et al.*, 2014; Jefferson, R. *et al.*, 2015; Jefferson, R. L. *et al.*, 2014). In the field of public engagement and science communication the knowledge-deficit model has received considerable criticism, with scholars endorsing more participatory and dialogic approaches (Smallman, 2014). Examples include Mode II science, recognising the value of public voices in knowledge production (Gibbons *et al.*, 1994; Nowotny *et al.*, 2006); post-normal science (PNS), which considers plurality of voice as not only desirable but necessary to devise policy addressing today's 'wicked' problems (Funtowicz, S. and Ravetz, 2003); and consensus-building and critical debate (Pepermans and Maeseele, 2016).

For proponents of direct participation of the public, there is increasing emphasis placed on participatory engagement methods such as citizen science, which both generates data for research and actively engages members of the public

and therefore may be a gateway to further pro-environmental engagement (Garcia-Soto *et al.*, 2017; Kelly, Fleming, Pecl, *et al.*, 2019; Martin, V. Y. *et al.*, 2016; Sorensen and Jordan, 2016). Others contest that participation should be more deliberative for civic and legitimacy reasons, however aspirational that might be (Owens, 2000), and that citizen deliberation can improve social equity in other approaches, such as ecosystem services valuation (Wilson and Howarth, 2002). Direct participation by the public can be seen in practice at smaller scales through local governance and stewardship practices. For example there is a body of literature on marine stewardship which aims to engage communities of marine users (or stakeholders) in changing specific local marine management practices, often relating to specific fishing communities and sustainable resource management (e.g. Gilmour *et al.*, 2013; Gómez Mestres and Lloret, 2017). In some cases there are co-management approaches that bring together citizen science and local stewardship (Silva and Krasny, 2016).

Within these broader umbrellas are many different strategies to improve sustainability of the marine and wider environment with different degrees of involvement of direct stakeholders and wider publics. Particularly where the wider public is concerned, some of these strategies are rather top-down and, more-or-less, tend to take an information or knowledge-deficit approach to solving environmental problems (see 1.1.1 and 2.2 for further discussion). Whilst others are more participatory and empowering at the grassroots, trying to place the general public in a prominent position with a view to contributing to social justice, better democracy, and more sustainable solutions. There is additionally a specific legal framework on the right to public participation in environmental matters, which is legislated for in the Aarhus Convention (United Nations Economic Commission for Europe, 1998) and related EU (EC, 2003a, 2003b) and national law (in England and Wales The Environmental Information Regulations, 2004, and The Town and Country Planning (Environmental Impact Assessment) Regulations, 2011), and features in academic theory and in practice.

1.1.1. STEWARDSHIP AND CITIZENSHIP

Marine environmental degradation is a 'wicked' problem, as evidenced by the plurality of social-ecological strategies discussed above. To date, such interventions have been ineffectual in producing the scale of environmental change required. Whilst it is logical to more deeply examine the role of humans in anthropogenic environmental impacts, the complexity of the problem makes it challenging to identify effective pathways to generate changed behaviours at societal and individual scales. Attempts to do this broadly fall into two classes: i) understanding human nature in order to promote individual pro-environmental behaviour; and ii) changing governance institutions and processes to structurally alter the relationship between people and the natural environment.

In the first case, environmental education, ocean literacy, public perceptions of the environment, awareness-raising, values, identities and socio-economic factors have all been investigated. Whilst in the second, natural capital approaches try to work with the current economic paradigm, socio-legal scholars focus on regulatory frameworks, and a large body of research investigates the conditions conducive of collective action and stewardship. But there is a blurring of the definitions as more interdisciplinary thinking crosses over and examines why and how people can and should engage in marine and general environmental sustainability. In this thesis I explore this intersect through the lens of citizenship. In the sections below I outline areas of conceptual overlap to highlight what is particularly useful and distinct about the concept of citizenship.

Environmental education has grown and broadened from learning about the natural environment to having a moral code that values the natural environment and becoming an active environmental citizen (Schild, 2016). There is current debate as to the definition of ocean literacy: whether or not its goal is increased marine citizenship or whether it is actually synonymous with marine citizenship (Stoll-Kleemann, 2019). Such debates require consideration of the role of knowledge and information in pro-environmental behaviours and identities, and must contend with interdisciplinary thinking as constructivist philosophical ideas of morality and justice intersect with positivist scientific ideas of ecological coherence and sustainability. When does environmental caring become pro-

environmental behaviour? What distinguishes between such behaviours and stewardship or citizenship? Where do values to care and act come from and how can policy encourage them?

Whilst acknowledging that in the wider literature the term stewardship is applied to many environmental activities, Bennett *et al.* (2018, p597) define it as "*the actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes in diverse social–ecological contexts."* Though this definition does not include geographical boundaries of the environment, stewardship has often been locality-based involving local resource users (stakeholders), fitting with the mantra of 'think global, act local' in relation to global scale problems such as climate change and ocean degradation (e.g. Bennett *et al.*, 2018; Gómez Mestres and Lloret, 2017; Ram-Bidesi, 2015). It is the "*levels of capacity*" within this definition that insinuates local assets and governance structures into the definition, through how they enable or disable access to stewardship. This differentiates stewardship from pro-environmental behaviours as being situated in societal structures and influenced by more than psychological factors and behavioural choices. Such societal structures are not a natural and innate part of life, but social constructs formed through political decisions.

In democratic societies, political decisions are developed through the participation and consent of the citizenry. Environmental citizenship then draws on the political term of citizenship (which has multiple political meanings: Faulks, 2000; Yarwood, 2013) and situates all people as active members of a political community who have rights and responsibilities to act for the benefit of environmental sustainability. It extends these rights and responsibilities beyond stakeholder and resource users, as often found in stewardship, to all people. Environmental citizens should care, act individually, and be engaged in wider collective environmental stewardship for the common good. This approach reflects the environmental pragmatism philosophy; embracing plurality and participatory democracy (Parker, 1996). Environmental citizenship models attempt to tie together environmental education with the motivating and socio-economic factors that influence engagement in pro-environmental behaviours and environmental stewardship.

Environmental citizenship has been proposed as a form of public participation that directly promotes pro-environmental behaviour (Walker-Springett *et al.*, 2016) which can achieve tangible benefits to the environment (e.g. carbon reduction, Dietz et al., 2009). Whilst the legal public participation framework of the Aarhus Convention in most contexts applies to the public concerned or affected by environmental developments, citizenship extends the concept of the public beyond stakeholders, recognising the role publics can play in managing the environmental commons. Environmental citizenship models have been produced that demonstrate a large range of factors contributing to taking action (e.g. Hawthorne and Alabaster, 1999). These include knowledge, awareness, concern, values, personalities, socio-economic circumstances and social norms.

Involving publics directly as marine citizens is seen as one way to address the ongoing degradation of the marine environment (McKinley and Fletcher, 2012). Here marine citizenship is defined as:

> "*having understanding of the individual rights and responsibilities towards the marine environment, having an awareness and concern for the marine environment and the impacts of individual and collective behaviour, and having a desire to have a role in ensuring on-going sustainable management of the marine environment.*" (McKinley, 2010, p294).

The public is viewed as having capacity to promote good marine environmental health (a marine environment which is biodiverse, ecologically functional, and sustainably utilised), through pro-environmental behaviours as ethical consumers, campaigners, and informed citizens. Informed by research into environmental citizenship, research into marine citizenship places importance upon education and awareness raising as a means to engender concern and action, and encompasses a moral position with respect to the ocean (McKinley, 2010). McKinley's model goes further than the environmental citizenship models it is developed from, by acknowledging a role for place attachment in engendering marine citizenship. Despite this definition focusing on rights as well as responsibilities, and the associated research referencing place attachment, it

is nonetheless the case these themes have received little attention even in the wider environmental citizenship research.

In the case of place, there is a large body of research investigating and characterising how place has the power to shape emotional bonds and identities in people and to mediate their environmental values (Devine-Wright, 2013; Feldman, 1990; Lewicka, 2011; Twigger-Ross and Uzzell, 1996) but this has not previously been extended into the realm of environmental citizenship. The ocean is a place which is four-dimensionally immersive, enabling presence within the volume of the ocean whilst also temporally engaged due to the rhythm of the tide. The ocean is shown to be a powerful agent in culture and human wellbeing (Wheaton *et al.*, 2021), given which, the ocean's capacity to promote marine citizenship could be equally powerful.

In the case of rights, this feeds directly into the political conceptualisation of marine citizenship. Ecological citizenship theory (Dobson, 2003) has made important contributions to the political understanding and framing of environmental citizenship, particularly in the context of social and environmental justice. Marine citizenship would equally benefit from an examination of what is meant by marine citizenship rights (are these to a healthy marine environment and/or the right to shape the future of the marine environment as a common good?) and how these are currently in practice.

1.1.2. BRINGING TOGETHER ALL EXPERIENCES

Here I would like to add a few words about the personal and professional experiences that led me to this area of research because they have informed my perspectives as a researcher and shaped the direction of this project. Despite growing up in the middle of Britain and having little exposure to the coast, my love of the ocean led me to choose a marine biology degree. I quickly became interested in science communication, studying, as I was, at the time that genetic modification of foods became headline news. Eventually this interest in the science-society interface led me into a decade of engaging publics in science and managing volunteers with the British Science Association. This period highlighted four important points that are pertinent to my research: i) I personally need to be near the sea; ii) the voluntary sector is a very important route for creating societal change; iii) despite academic work

challenging knowledge-deficit approaches to public engagement and championing the benefits of deliberation and participation, this narrative was still alien to most natural scientists; and iv) science is a tool of society, yet members of society are largely excluded from it and it is used to exclude the public from many aspects of modern-day decision-making.

As a first step to address the first problem, I undertook a part time MSc in Coastal Zone Management and focused my dissertation on stakeholder engagement in coastal partnerships (Buchan and Yates, 2019). I wanted to understand personal motivations and how these played out in the structures of integrated coastal zone management in the UK. I also wanted to better understand who stakeholders were and whether they included the general public. It was then that I discovered post-normal science (Funtowicz, S. and Ravetz, 2003) which spoke to many of the questions I was asking, and I unknowingly transferred from natural to social sciences.

My professional, voluntary, and educational experiences have been pulled together in this PhD. I set out to learn how we could collectively work towards a healthier marine environment, since we clearly couldn't teach people to care or act, and how the ocean could be more widely considered as a common good, necessary for human existence and with intrinsic value. Since starting the PhD I have been elected to local government and have added policy-making and democratic understanding to my civic society and marine science experiences. This has brought into sharper relief both the deficits and opportunities at every scale of democracy, and the intersectional impacts of policy and culture upon the human-ocean relationship. My most recent experiences highlight that the narrative within policy making is still heavily top-down, technocratic and education-focused, demonstrating how important it is that researchers of marine citizenship engage with 'blue' politics.

Characterising marine citizenship and how it is integrated into policy systems sheds light on how marine citizenship can and does play a role in improving marine environmental health. It is only through examination of multiple factors together that individual journeys towards marine citizenship can be understood. Reflecting my own transitions in life, my research approach is to pull on any tools available to me to understand the problem. Interdisciplinary research is

therefore a natural fit and I utilised mixed methods, and approached this open-ended enquiry both deductively and inductively. Situated within environmental pragmatism, I draw on theories of participation and the politics of citizenship; psychological theories of values and identities; and geographical theories of place. In this thesis the reader will find a wide-ranging set of results and discussions that will be of interest to scholars of different disciplines (see 1.4). At the heart of my work is the ocean. It is my motivation for everything and therefore the gap I outlined above in bringing the role of the ocean as a place into marine citizenship is particularly striking. As a researcher of marine citizenship I have taken a more holistic approach towards understanding marine citizenship than the research in this field has to date.

In this research I broaden the debate on marine citizenship as a policy tool for promoting good marine environmental health to ask what we can learn from other disciplines, such as human geography and green political theory. I privilege the language of citizenship over the language of stewardship to explicitly acknowledge the politics of participation in marine matters. I independently explore what both the 'marine' and the 'citizenship' parts of the concept mean to active marine citizens and how they experience the rights and responsibilities of marine citizenship. I propose that all publics are stakeholders of the ocean and, through democracy, have rights to engage in the processes by which the ocean is used and managed.

1.2. RESEARCH AIMS AND OBJECTIVES

The aim of this research is to investigate the role of marine citizenship in promoting good marine environmental health. This investigation warrants first an understanding of what marine citizenship is, how it is practiced, what factors motivate marine citizens and shape their choices, and how the material nature and experience of the ocean influences marine citizenship. In order to have an influential role in marine environmental health, marine citizenship needs to be embedded in marine policy frameworks, so it is also useful to understand how marine citizens are currently able to participate through formal means and what their understanding is of these formal structures.

To help in performing this investigation, I have responded to four research questions:

I.   What is marine citizenship and who participates in it?

I discuss in Chapter Two that understandings of citizenship can vary from being nation-state based to global, from being passive to being active, and being formulated by different balances of rights and responsibilities. If marine citizenship can be a useful tool in the marine policy box in promoting good marine environmental health then it is essential that we have a shared understanding of what it actually is and who, socio-demographically, currently has access to participate in it. This question is responded to in Chapter Four: Citizenship.

II.   How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?

Marine citizenship has been proposed as a policy mechanism for marine management and good environmental status (McKinley, 2010; McKinley and Fletcher, 2012), linking to statutory responsibilities to engage publics as laid out in international law. This research reviews public participation in marine policy, in order to understand marine citizen perceptions of its effectiveness. I critically examine barriers and opportunities presented towards marine citizenship and investigate marine citizens' views about the role of marine citizenship for good marine environmental health. Additionally, I make a specific contribution towards the 'rights' side of citizenship, an aspect hitherto under-researched, as discussed in 2.3. In this way, the institutional policy framework is viewed as a broad conceptualisation incorporating direct and indirect influences on the ability of marine citizens to participate, and also the means by which marine environmental health can be promoted via marine citizenship. This question is also responded to in Chapter Four: Citizenship.

III.   How do motivational and value-based factors influence marine citizenship choices?

Here the role of individual personalities and characteristics is acknowledged as being an important part of the motivation to participate in marine citizenship. The response to this question included direct investigation of basic human values, environmental attitudes, and environmental identities, recognising the role these factors have already been shown to play in pro-environmental

behaviour (2.4.2). Established environmental psychological metrics were utilised to support replicability of the findings and comparison with past research. Additionally, marine citizenship was considered within an individual's broader citizenship activity. This question is responded to in Chapter Five: People.

IV.   How do place-related factors influence the practice of marine citizenship?

Marine and general environmental citizenship research has to date little explored the role of place relationships as a motivator of citizenship. Place research indicates that humans can generate emotional attachment and dependency upon certain places, and that place is an important component of identity. (See 2.4.3 for review of this research.) In this research, these factors are all investigated in respect of their connection specifically to the marine and coastal environment as a place. This question is responded to in Chapter Six: Place.

In this research I understand marine citizenship and ocean citizenship to be synonymous. I also use interchangeably the terms marine environment, ocean, sea, and coast, in the context of marine citizenship. This is a conscious choice because I believe the terminology is not yet settled. Whilst the term marine citizenship is currently most prominent in the literature, ocean citizenship is also used, as is ocean literacy an accepted and widely recognised term. In recent years the narrative of the world marine ecosystem is becoming broadened by reference to the world's ocean. This is a semantic choice to represent that there is one body of oceanic water and divisions into named seas and oceans are rarely relevant for ecosystems. In the EU, marine is a widely accepted term (see for example EU Directive 2008/56/EC, 2008), but elsewhere in the world ocean is used in preference. Without wishing to prejudice how terminology may be settled in future, I take a liberal approach to the terms used in this thesis.

1.3.   SCOPE

Though this is a wide-ranging study, it is not possible for one study to encompass all aspects of marine citizenship or all approaches. This study is focused on the practice and experience of marine citizenship and on uncovering potential or common routes marine citizens have taken to become active marine

citizens. There is current scholarly debate about ocean literacy, and wider environmental education, and the degree to which they move beyond knowledge and into pro-environmental behaviours (Borja *et al.*, 2020; Schild, 2016; Stoll-Kleemann, 2019). In this thesis I critically consider, amongst other factors, the role of knowledge in marine citizenship practice and in developing marine citizens. I approach knowledge from the viewpoint of active marine citizens rather than from a baseline of disengaged publics, and investigate a suite of influences. Therefore this thesis responds primarily to the debate on marine citizenship (McKinley and Fletcher, 2012), but may also be of use in shaping future understandings of ocean literacy where the goal is increasing marine citizenship.

I have taken an interdisciplinary and mixed methods approach to maximise the capability of the study to answer an expansive research question about the capacity of marine citizenship to influence marine environmental health. It is not possible to encompass every possible lens. Despite incorporating aspects of ethnography I do not, for example, draw on anthropological literature to immersively interrogate the human-ocean experience. I also do not bring into this study the ecological or natural capital approaches to evaluate the effectiveness of marine citizenship by quantifying the degree of change that might be elicited by specific pro-environmental behaviours. Similarly, I examine only the aspects of law relevant to public participation and do not provide comprehensive review of the environmental legal framework. The research approach is centred on the experiences and views of marine citizens and in so doing uses an individually-centred socio-psychological lens through which marine citizenship is characterised and explored as a personal and social act.

1.4.   BENEFICIARIES AND IMPACT

At the broadest scale, this study will benefit wider society and the marine environment through furthering our understanding of human relationships with the ocean and the tendency of some people to engage in pro-environmental behaviours with the ocean in mind. This positive impact will be achieved through scholars in a range of disciplines and marine practitioners drawing on this work to inform future research and practice. There are some specific disciplinary areas where I believe this study will have particular impact.

Scholars of marine citizenship will benefit from the interdisciplinary approach and the connections and contextualisation of marine citizenship that this study offers. The methodology will be informative for those looking to likewise broaden the scope of their studies. Those working in ocean literacy will be interested in how education, experiences, and information relate to marine citizenship in practice, and scholars of wider environmental science will find the study informative for areas of further study more widely relevant. The research, though about marine citizenship specifically, encompasses many findings which could be applied to wider environmental citizenship as a political and as a situated act. Findings from the research will therefore also contribute to green (or blue) political theory.

Environmental, and potentially other, psychologists will be interested in the use of basic human values in both quantitative and qualitative form, and the combined approach of investigating values, attitudes and identities in one study. Those working in human geography, or between geography and psychology, will appreciate the comprehensive investigation of place in this study, particularly the novel findings around marine place attachment and marine identity. The study highlights the importance of the ocean as a place to people generally and specifically for marine citizenship.

The declaration of the first National Marine Park in Plymouth Sound has been a unique opportunity to influence a novel policy measure aimed at the human-marine relationship. I have been privileged in being able to create impact from my PhD research by participating in workshops, conferences and working groups, looking to develop marine citizenship in practice. Additionally, the findings of this research are being applied in a new Ocean Literacy Working Group, led by the Ocean Conservation Trust and working with the UK Government Department for Environment, Food and Rural Affairs (DEFRA). My findings have resonated with community groups and professionals in a range of disciplines and the publication of this thesis will help further that impact work.

## 1.5.	Structure of thesis

### 1.5.1.	Part One: Context of research

In Chapter Two, I provide an overview of evidence relevant to this study from a range of disciplines. I discuss what is known about marine citizenship, and theoretical and epistemological approaches to marine and environmental citizenship to date. I identify relevant knowledge relating to citizenship more generally and to pro-environmental behaviours, integrating these to highlight their potential relevance to the study of marine citizenship specifically. I also identify gaps in the existing marine citizenship literature which this research responds to, in particular the policy framework relating to public participation in environmental decision-making, basic human values, identities, and place research.

In Chapter Three: General Methodology I describe the approach I have taken to this research. I share my epistemological position and give particular attention to the challenges and advantages of interdisciplinary research for a question such as this which interrogates a social-ecological system, in which there are bi-directional impacts between humans and the marine environment. I further reflect upon my own positionality and the relevance of that on my data collection and interpretation of the findings, and outline considerations about the limitations and quality of the study design.

### 1.5.2.	Part Two: Data collection and analysis

In this part of the thesis, I present three chapters of findings and discussion. Each chapter responds to one of the research questions outlined above (with the exception of the first results chapter which addresses two), as follows:

Chapter Four: Citizenship

Research questions:

a) *What is marine citizenship and who participates in it?*
b) *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?*

The findings I present in this chapter include who marine citizens are in socio-demographic terms, how they participate in general and marine citizenship, what marine citizen perceptions are about the character of marine citizenship and its value for marine environmental health, and the nature and efficacy of participation in formal marine decision-making according to marine citizen experiences. Following the findings, I discuss how they relate to existing literature and how they further our understanding of marine citizenship within a policy context. I add particularly to the 'rights' aspect of marine citizenship, and broaden understanding of what marine citizenship is.

Chapter Five: People

Research question:

How do motivational and value-based factors influence marine citizenship choices?

In this chapter I present findings that consider the internal nature of marine citizens. I describe the distribution or nature of psychological variables, such as all ten basic human values and the significance of environmental identity, and emergent factors, such as emotions, that relate to the individual human mind insofar as they relate to marine citizenship. There are in-depth qualitative interrogations of some of these factors, with a view to offering a substantial contribution to gaps in the environmental psychology literature as it relates to marine citizenship. I follow the presentation of the results with a discussion situating the findings alongside existing research and identifying their contribution to further the study of marine citizenship as it relates to the person.

Chapter Six: Place

Research question:

How do place-related factors influence the practice of marine citizenship?

Here I examine the nature of the ocean as it is understood by marine citizens and how it relates to the practice of marine citizenship, particularly through place attachment, place dependency and place identity. This chapter is heavily influenced by psychological and geographical understandings of place and draws on standardised measures that, in some cases, are modified to be

directly relevant to the ocean as a place. I investigate aspects of proximity to the ocean and their relationship with marine citizenship. The discussion highlights how these findings make a significant contribution to the under-researched place component of marine citizenship. I also discuss how they contribute to the place research literature more widely with a new understanding of the ocean as a place through marine place attachment.

1.5.3. PART THREE: INTERPRETATION, SYNTHESIS AND CONCLUSIONS

In Chapter Seven: Synthesis, Discussion and Conclusions, I bring together the findings and discussion from across Part Two to respond to the overall research question of the role of marine citizenship in promoting good marine environmental health. I first summarise the key findings already presented then discuss how they further our understanding of marine citizenship. I synthesise the findings into a new concept of marine identity and propose this as being important in marine citizenship. I further discuss the policy and institutional implications of the findings. I discuss the limitations and additional considerations of the findings and highlight areas where further research is needed to add clarity to the significance, nature, and origin of some of my key findings. The conclusions are presented together with the discussion in this chapter.

2. CHAPTER TWO: REVIEW OF LITERATURE

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2.1. INTRODUCTION

In Chapter One: Introduction I have put forward the case that the marine environment is at risk from anthropogenic impacts and that this threatens both natural and human wellbeing, now and into the future. I have argued that individuals have responsibilities to contribute to solutions to this problem and that approaching this from an holistic perspective will be informative for the developing field of marine citizenship.

The holistic investigation of marine citizenship necessitates approaching the literature from an interdisciplinary perspective. Within this review therefore the reader will find evidence from a range of fields including environmental law, environmental politics, environmental psychology, geography, marine policy, and political and social sciences. It cannot be possible to cover every discipline or lens as fully as might be the case in single-discipline research, and the choice of literature is informed by my academic and professional experience as a marine scientist, former volunteer manager in the field of science communication and public engagement, and former trustee of a marine conservation charity. These experiences have provided me with practitioner understanding of public engagement, volunteering, and active citizenship, together with technical and scientific knowledge of the marine environment, and an overview of grassroots marine conservation activity in the UK.

It is recognised that the literature reviewed comes from a range of epistemologies, some of which may be conflicting, and it is a challenge to synthesise these knowledges into a coherent understanding of marine citizenship. That task is approached by taking a real-world and multi-scalar view of the literature. This holistic view of marine citizenship examines influences at a personal and group level in the places where marine citizenship occurs, and sets this upon the policy stage.

The literature review is organised sympathetically to the structure of this thesis. It begins with a discussion of the principles of participation in environmental matters, then moves on to an examination of citizenship generally, and environmental and marine citizenship specifically. This is to develop the argument that marine citizenship has thus far been considered as a set of pro-environmental behaviours rather than an act of civic participation which is

embedded in a wider societal context. I next present an overview of the marine citizenship literature, then finally introduce interdisciplinary learnings that inform the methodological design of this research. These are organised into discrete sections addressing the three key themes investigated in this research – Citizenship, People and Place. In the Citizenship section I examine evidence pertaining to the extrinsic setting of marine citizenship, including aspects of the current marine institutional and policy framework, normative positions around engaging the public in environmental citizenship, and environmental legislation on public participation in environmental matters. In the People section I introduce understanding from environmental psychology as to the intrinsic characteristics and personalities of environmental citizens. And in the Place section I present evidence that sits across human geography and environmental psychology, which explores the human-place relationship and its importance for marine and environmental citizenship. Finally, I offer how this research project will reframe marine citizenship and fill identified gaps in the evidence base.

2.2.   POST-NORMAL SCIENCE TO ADDRESS 'WICKED' MARINE ENVIRONMENTAL PROBLEMS

In this chapter I discuss the wider and finer points of environmental and marine citizenship; the policy framework that surrounds it; the intrinsic personality factors that might govern an individual's choices and moral code; and the qualities of the sea that might inspire important and influential relationships with the sea. Before commencing this discussion, I will briefly explore the positionality I take in this research, and evidence which relates to the wider concept of addressing environmental challenges with the participatory and collective actions, which can be understood as citizenship.

I adopt a constructivist, environmental pragmatism as the philosophy for my research. Environmental pragmatism asserts that truth is based upon experience, and human understanding of the world is through experiential relation to other humans, lifeforms and things (Light and Katz, 1996; Parker, 1996). Pragmatism is therefore inherently pluralistic, and does not seek to simplify explanations down to a single truth. It is also dynamic, acknowledging that as ethics and truth are constructed through relationship experiences, these inevitably change over time with new experiences, such as contemporary

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environmental condition (Parker, 1996). In acknowledging the constructivist nature of the human-ocean interface, public participation in shaping societal approaches towards this interface become paramount.

Participatory theories advocate involvement of the public at every level from knowledge production (Gibbons *et al.*, 1994; Nowotny *et al.*, 2006) to decision-making. Public participation approaches to environmental issues can be classified into four main methodologies: 1) technocratic, information-deficit based (i.e. challenging 'climate deniers' with scientific evidence); 2) social marketing (tailoring information to needs, values etc.); 3) green republican (social capital based using environmental education and promoting deeper citizenship); and 4) deliberative dialogue (Pepermans and Maeseele, 2016). Environmental issues in the UK have predominantly been addressed from a technocratic perspective, with scientific research used to both identify and solve environmental problems (Robottom, 1991). Social marketing, and some green republican requests to 'do your bit' also feature, neglecting the social context of pro-environmental actions (Owens, 2000).

Though still the standard model in practice, the knowledge deficit model of environmental problem-solving has been criticised (Owens, 2000). Evidence that people make decisions based on things other than their education and scientific literacy has challenged the wisdom of the deficit model. Political party allegiance and local economic factors can trump education level (Hamilton and Safford, 2015); concern about climate change is not highest in those most highly educated in science (Kahan *et al.*, 2012); and there is a value-action gap (Blake, 1999). It has been argued that science itself cannot produce value-free facts due to underlying interests, and that scientific environmental controversies require political development before science can again provide answers to the goals that are politically established (Sarewitz, 2004).

A range of crises over the years at the interface between science and the people (e.g. BSE, GM crops, nanotechnology and climate change mitigation) has given weight to a need for improved ways of engaging the public and enabling them to participate in science related policy. The 1985 Royal Society report into Public Understanding of Science stated "*Everybody, therefore, needs some understanding of science, its accomplishments and its limitations.*" (Royal

Society (Great Britain) and Bodmer, 1985, p6). The report triggered a swelling of an academic field focused on the role of the public in, and its relationship with, science. This movement was bound in a belief that scientific literacy was low in the general population and that improving it would improve interest in, career based participation in, and general acceptability of science to the public. A wealth of scientific outreach and environmental education has taken place on this basis with the aim of improving scientific literacy (Owens, 2000; Robottom, 1991).

Public engagement activities have been many and varied developing from science public lectures to science festivals across the UK[1]; school enrichment programmes[2]; the development of the science centre network[3]; voluntary activities such as the British Science Association branches delivering hands on events[4]; sci-art[5]; and most recently a growth in citizen science projects[6]. The vast majority of these event types are aimed at informing, educating or inspiring the public to enjoy and learn about science. A review of the top 50 most-cited articles in the journal *Public Understanding of Science* (Smallman, 2014) highlighted how the field has developed between 1992 and 2010. Key findings were that an early research focus on literacy and knowledge has transitioned towards a dialogue approach and participation, which has in turn moved to a focus on critique of dialogue and participatory models, suggesting a maturity in the field from theorising to evaluating practice and a trend towards deeper civic participation. To provide an example from Smallman's study, between 1992 and

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[1] https://www.britishscienceassociation.org/uk-science-festivals-network-members
[2] E.g. http://www.sciencelive.net/ and https://stemdirectories.org.uk/
[3] http://www.sciencecentres.org.uk/
[4] https://www.britishscienceassociation.org/the-branches
[5] E.g. projects funded by the Wellcome Trust, see: https://blog.wellcome.ac.uk/tag/sciart/
[6] E.g. the open air laboratories that have been gathering environmental data https://www.opalexplorenature.org/; the online platform that originated to classify galaxies from astronomical photos and help gather a catalogue of our universe https://www.galaxyzoo.org/; a project to classify whalesong to help understand its meaning https://whale.fm/; the swift response to ash dieback in which playing a facebook game enabled identification of DNA codes https://elifesciences.org/content/4/e07460; the national marine project aimed at gathering baseline data on rocky short biodiversity which forms one of the case studies in this research http://www.capturingourcoast.co.uk/.

1995 key terms relating to models of PUS included knowledge, public, understand and ignorance. Whilst in 2000-2002 models were explored using terms such as uncertainty, problem, complex and construct. However, Jensen and Holliman (2016) found that despite the rhetorical focus on dialogue and engagement, this has not been much adopted in practice. Such arguments challenge the basic premise that scientific facts are both complete and accurate and that they are persuasive by themselves in an objective way. This uncertainty is picked up in pragmatic philosophies of science such as post-normal science (PNS).

PNS advocates for a plurality of voices in solving 'wicked' problems that require complex, interdisciplinary solutions (Funtowicz, S. O. and Ravetz, 1993; Funtowicz, S. and Ravetz, 2003; Ravetz, J. and Funtowicz, 1999). It argues that many modern day scientific problems cannot be answered with a 'normal' science approach (as described by Kuhn, 2012) because science cannot accurately predict the problem nor its impacts. A particularly good example is that of climate change – a key driver of anthropogenic oceanic impacts – in which the mathematical models are insufficiently accurate to forecast the effects and rate of climate change (and due to the presence of chaos implicit to climate and weather patterns, it is arguably impossible for them to ever be accurate), and lack resolution at regional scale (Harrison *et al.*, 2015). In addition, the measures required to address the causes of climate change are high stakes – they rely on major changes to our current economic and social institutions and practices. And finally, there is a great deal of risk involved since the do-nothing approach is generally accepted to be catastrophic for large areas of the world. This combination of ethical and epistemological uncertainty, high stakes and risk, defines policy-based scientific issues that are appropriate for a post-normal science approach (Turnpenny, 2012).

Despite vast quantities of scientific evidence relating to mitigation of anthropogenic climate change, little progress has been made globally in terms of emissions reduction (IPCC, 2014b). PNS argues for a participatory approach, which is termed an 'extended peer community', both to legitimise decisions and broaden the range of epistemologies incorporated into the decision-making process. The same process is recognised in environmental law as providing space for value judgements alongside scientific and technological expert

knowledge (Lee and Abbot, 2003). In addition, the case for simply waiting for more scientific research, more certainty, instead tends to produce more uncertainty which leads to a paralysis in policy (Sarewitz, 2004).

Marine environmental health is similarly a wicked problem since the impacts of anthropogenic harm can be felt across the globe from the source, and the natural dynamism of the marine and coastal environment render prediction and modelling difficult. For example, in regard to marine protected areas:

> "*…the divergent values of different stakeholders, the high degree of scientific uncertainty, and the high marine resource management decision stakes, it is concluded that a key challenge is to adopt a "middle-ground" approach which combines top-down and bottom-up approaches, and which is consistent with the post-normal scientific approach.*" (Jones, 2002, p197)

Through this discussion, it can be seen that across fields there has been a convergence of thinking and practice that recognises that current, largely deficit-based, public participation procedure across science and policy has limitations in legitimacy and efficacy which make it ill-suited to contemporary environmental challenges. Though these models of deliberative participation are proposed at different stages in the process, from knowledge generation through to decision-making, they share a commonality of legitimising a plurality of voices as sources of a multiplicity of knowledges. The domination of positivist science and technological language has already been shown to serve as a barrier to effective participation in environmental actions (Foxwell-Norton, 2013), and now it can be seen to limit the outcome of environmental decision-making and exacerbate the oppositional positions that participation is supposed to overcome (Pieraccini, 2015). In recognising that individuals hold multiple interests and have multiple types of knowledge to offer to the process, it becomes possible to see them as complex people influenced by a range of life experiences. In essence, as valuable citizens.

In situating this research project within the post normal science paradigm, I am saying three things about it. i) That marine environmental health is a high stakes issue. If we allow continued deterioration of ocean quality, loss of marine biodiversity, and do not bring down carbon emissions permitting runaway

climate change, then we face a very serious and challenging future. ii) There is uncertainty in this issue. Not with the science per se but with the approaches to tackling it. Despite many years of effort we continue to see marine environmental degradation and marine health losing out to economic gain. It is clear that the strategies we have relied upon are not the most effective ones and there is uncertainty with the best way(s) to proceed. iii) That the issue can only be addressed by extending the peer community and types of knowledge that are utilised in devising solutions. Increasing the inclusiveness of efforts to improve marine environmental health will produce a wider range of potential solutions, expose a greater diversity of knowledges maximising the information we base efforts on, and develop a larger collective of active marine citizens. This latter point is the main thrust of this research project which is concerned with the nature and extent of participation by members of the general public in tackling marine environmental degradation in all its varieties.

Figure 2.1 Arnstein's (1969) ladder of participation can be used to classify public participation approaches. Environmental education and deficit models can be considered as occupying levels 1-2, as the public are manipulated through the introduction of specific information pertinent to the aim of the person proving it, and scientific/environmental problems are presented as something that requires fixing. Policy mechanisms such as consultation, as stipulated by environmental impact assessment, for example, tend to be at levels 3-5 in which people are invited to view solutions, sometimes comment on them or offer solutions, but the decision-making authority lies with those leading the consultation. Here the public invited to participate tends to be limited to the public affected or public concerned (also see in the MCZ consultation process (Pieraccini, 2015)). Some processes related to integrated coastal zone management (ICZM) move into level 6 – partnership – through the development of stakeholder forums such as the UK's coastal partnership network (Coastal Partnerships Network, 2013), but again the 'public' in such cases tends to narrow down to industry and statutory interests (Buchan and Yates, 2019; Buchan, 2014). Empowered citizens – not just stakeholders – would enable all publics to participate in environmental activity and to develop solutions together. A civic model of democratic engagement is proposed as a means of empowering citizens to define and

develop solutions to environmental problems (Owens, 2000). Such a model might be understood as citizenship.

8	Citizen Control	Citizen power
7	Delegated Power	
6	Partnership	
5	Placation	Tokenism
4	Consultation	
3	Informing	
2	Therapy	Non-participation
1	Manipulation	

Figure 2.1 Ladder of Participation (Arnstein, 1969) illustrates the empowerment conferred by different methods of public participation as a scale from least (1) to most (8) empowering.

2.3.   CITIZENSHIP

Citizenship is a long-established term underneath which are dynamic and important debates as to its meaning. Marine citizenship as a concept needs to build on existing understandings and debates but the marine citizenship literature thus far lacks critical analysis of what citizenship means and how it applies to the marine environmental context. In this section I will give an overview of some of the leading understandings of citizenship in general terms and some of the key tensions and debates that have implications for what marine citizenship means. In the sub-sections I turn to the models of marine citizenship and relevant environmental citizenship theory which has informed them.

The meaning of 'citizenship' has changed over historical and contemporary time and remains contentious in modern day academia, but consistently contains notions of citizen rights and duties (legal and moral) and striking a balance between them. Faulks (2000) breaks citizenship down into three key components: the extent, or membership of citizenship; the content of

citizenship, rights and duties; and the depth of citizenship, how 'thin' or 'thick' is citizen participation. Classical theories of citizenship base their membership on the nation-state but vary in their emphasis on rights and duties and the depth of participation. Republican citizenship, based on classical Greek citizenship, privileges the collective over the individual; the public good over private interest; political participation over legal protection; and duties over rights producing 'thick' or active citizenship (Cao, 2015). Liberal citizenship, based on Roman citizenship, acts in the reverse, privileging individual freedom; private interest, particularly property rights; legal protections; and rights against the state, resulting in 'thin' or passive citizenship; and is the basis of modern day citizenship in the Global North (Cao, 2015).

Both forms of classical citizenship are criticised by pluralist thinkers, such as feminist and multicultural theorists, for being based on exclusively male and white understandings (Cao, 2015); and the focus on the nation-state is criticised as being unjust due to its failure to acknowledge the impacts of actions in one nation-state upon citizens of another nation-state (Dobson, 2003; Shiva, 1998) through the global transportation of resources, goods and services, which, in the context of this research, has particular implications for the global ocean. Citizenship in practice can be considered as "*the _process_ of construction and transformation*" of society (Jelin, 2000, p53, emphasis author's own) and as such citizenship can be understood as the right to participate in identifying problems and developing solutions; a right which is granted or excluded by actors or institutions with power. It also does not have to be attached to the nation-state, but rather with the public sphere which can be at multiple, even global, scales (Jelin, 2000).

Globalist theories seek to address the effect of globalisation on citizenship. Neoliberal citizenship is concerned with shrinking the nation-state to a minimum and introduces corporations as having citizenship agency, both duties (corporate social responsibility) and rights (economic and financial). It also changes the nature of the public from being citizens to being consumers (Cao, 2015). Neoliberalism was championed, via neoliberal economics, in the UK and US in the 1990s and is criticised for centring citizenship around money and consumer activism, which leads to social inequality due to wealth inequality (Cao, 2015). Consumer activism is both contested as even being citizenship

due to being founded on consumerism rather than political participation (Hertz, 2001 referenced in Yarwood, 2013), and argued to be a viable political act of citizenship that both enables individuals to perform citizenship in their private space (Micheletti, 2003 referenced in Yarwood, 2013) and a strategy that is exerting some change on global corporate behaviour (Hughes *et al.*, 2008). Neoliberal citizenship still sets the backdrop to marine citizenship in these and other nations in the Global North. In the context of the marine environment, consumer choice is already highlighted as an avenue of marine citizenship (McKinley and Fletcher, 2012) for example through choice to consume sustainably caught fish, or no fish at all, and use cosmetic products that have removed microplastics.

Post-modern, cosmopolitan theories of citizenship examine multi-level and multi-scale identities, acknowledging that as well as people influencing one another across national boundaries, the degree of connectedness through social and professional routes enables people to culturally identify as a global citizen (Dobson, 2003; Yarwood, 2013)[7]. They recognise that groups of people are excluded from nation-state-bounded citizenship because of, for example, mobility and cultural factors. Cosmopolitan citizenship views all people as part of one human community, adding a temporal element of future community (Cao, 2015; Faulks, 2000). Theories are typically of liberal origin, being concerned primarily with human rights, and are principally criticised for the lack of spatial rootedness and tendency towards class privilege of those with sufficient affluence to travel and be 'world citizens' (Cao, 2015).

Cosmopolitan and republican theories of citizenship in particular champion 'active' citizenship, people participating in volunteering in their communities and making lifestyle choices based on moral social responsibility. This has been hailed as inclusive and locally empowering (Yarwood, 2013), though Painter

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[7] Though these transitions are not met without resistance, e.g. the exchange between Hayward and Dobson in relation to the legitimacy of the latter's theory of ecological citizenship (Dobson, 2006; Hayward, 2006).

(2007, p222) contended that "*states produce citizens in all kinds of ways – through education, surveillance, the judicial system, urban and social policy and so on. Arguably, it is the state that gives life to citizenship, rather than the other way round.*" This has been seen in the changing nature of citizenship under the neoliberal philosophy, described above. The idea that active citizenship can be produced by policy is strong in current marine citizenship research but as yet mechanisms for doing so are not well described.

What does this basic theory mean for situating marine, and more general environmental, citizenship in the current landscape? Without explicit articulations of where marine citizenship is proposed to fit, it is still possible to make inferences. For example, a broadening of the definition of citizenship and its link to cultural and place identity is one of particular relevance to the marine environment, given the scale of marine impacts, calling for reflection on the spatial nature of marine citizenship. The marine environment can be viewed physically and dynamically as one world-ocean, with humans benefiting from resources extracted far from their home, and human impacts originating in one nation-state influencing others right around the world. But equally human experience of the ocean is often on a more local scale, particularly for coastal communities. Are marine citizens cosmopolitan in philosophy because of the connectedness of the world-ocean and human experiences, or are they concerned with the role their own state has in national marine policy and management?

Marine citizenship is cited as a potential means of effecting change in the marine environment (McKinley and Fletcher, 2010; Rees *et al.*, 2013) through tangible actions and behaviour changes, collectively considered as pro-environmental behaviours (PEBs – discussed in more detail in 2.3.2 below). Marine citizenship in this context speaks to the republican citizenship tradition, as citizens take public responsibility for social good, in this case the marine environment. It is also called on in neoliberal citizenship, via the means of consumer action rather than political action.

Though the 'rights' side of the marine citizenship coin is part of the leading definition (McKinley and Fletcher, 2012), it has not been characterised in detail in the marine citizenship literature and the focus to date has been on creating

active responsibility and moral duty. Marshall (1950) defines three types of rights: civil, political and social. Civil rights are concerned with freedoms and in equal application of the law, which remains contested in a multitude of ways around the world. Political rights are concerned with the right to participate in self-governance (including via representative democracy), and social rights are concerned with living standards and quality of life. Though the liberal tradition privileges rights over duties, it must be borne in mind that rights do not arise in a vacuum but through political participation and action. In a circular and iterative fashion, therefore, the civil, political and social rights are achieved through political participation as active citizenship. Therefore, the ability to participate in self-governance in the context of marine utilisation and management is of pivotal importance to establishing marine citizenship rights.

This section has given a sweeping introduction to citizenship theories within which we can begin to situate marine citizenship as the field of research develops and which I contribute to and reflect on in this thesis. To date marine citizenship research has been more focused on how we can encourage people to become marine citizens. I will go on to argue in this thesis that we cannot achieve a culture of marine citizenship without reflecting on the political aspects of citizenship, but in the following two sections I turn to the existing models of marine citizenship and environmental citizenship theories which inform them.

2.3.1. ENVIRONMENTAL CITIZENSHIP

A number of scholars have developed theories of environmental citizenship that reflect citizenship traditions as I outlined above (see Cao (2015) for a comprehensive review of these). One of the most well-developed environmental citizenship theories (Cao, 2015) is Dobson's (2003) Ecological Citizenship theory, which is situated within green politics (Schild, 2016). A post-cosmopolitan citizenship, ecological citizenship is founded on environmental social justice, is transnational, and enters both the public and private spheres. The theory examines environmental citizenship from a political perspective, challenging fundamental political norms such as welfare being based upon consumption (UNECE/OECD/Eurostat Working Group on Statistics for Sustainable Development, 2008), which is incompatible with an ecological citizenship defined by sustainability. The political space of ecological citizenship

is the ecological footprint, with obligations placed on those whose footprint is larger towards those whose is smaller, rather than equal obligations across a global society. Criticisms of the theory are centred on the lack of agency for those with a smaller ecological footprint, which essentially victimises rather than empowers them; and on the individual behavioural focus on the theory, which reflects the liberal tradition in contradiction to the proposition that ecological citizenship is a justice rather than market-based theory (Cao, 2015). However, where those for whom environmental justice obligations apply are situated in the neoliberal traditions of the Global North, there is practical value to investigating means of generating environmental citizenship in an individual, liberal context.

There is a considerable body of research dedicated to understanding why some individual people consider the environment in their day-to-day life choices, and others do not. In 2014, Gifford and Nilsson published a thorough review of the factors most evidenced across the literature. The review indicated both personal and social factors to be important, including demographics, values, outdoor experiences, local settlement, beliefs, culture, place attachment, locus of control, education, and so on. Attempting to pull these factors into a coherent model of environmental citizenship is a very complex task, however there are a number of scholars who have developed models.

The Hawthorne and Alabaster (1999) model of environmental citizenship informed marine citizenship model development and so I give it particular attention here (Figure **2.2**). It was developed from empirically identified influential factors and the key components of environmental citizenship were identified as "*information, awareness, concern, attitudes/beliefs, education and training, knowledge, skills, literacy and responsible behaviour*" (p26). The authors consolidated the, sometimes contradictory, findings of past research into a set of variables which were then investigated for relationships and influence on environmental citizenship behaviour. The most significant factor to predict environmental citizenship was participation in environmental education and training. After this, in descending order of significance, predictors were "*emotionality, religious affiliation, parenthood, social class, internal LOC [locus of control]…and personal responsibility*." The authors concluded that it was

clear that environmental citizenship is influenced by a broad and complex array of factors which influence one another and are situated in a social context.
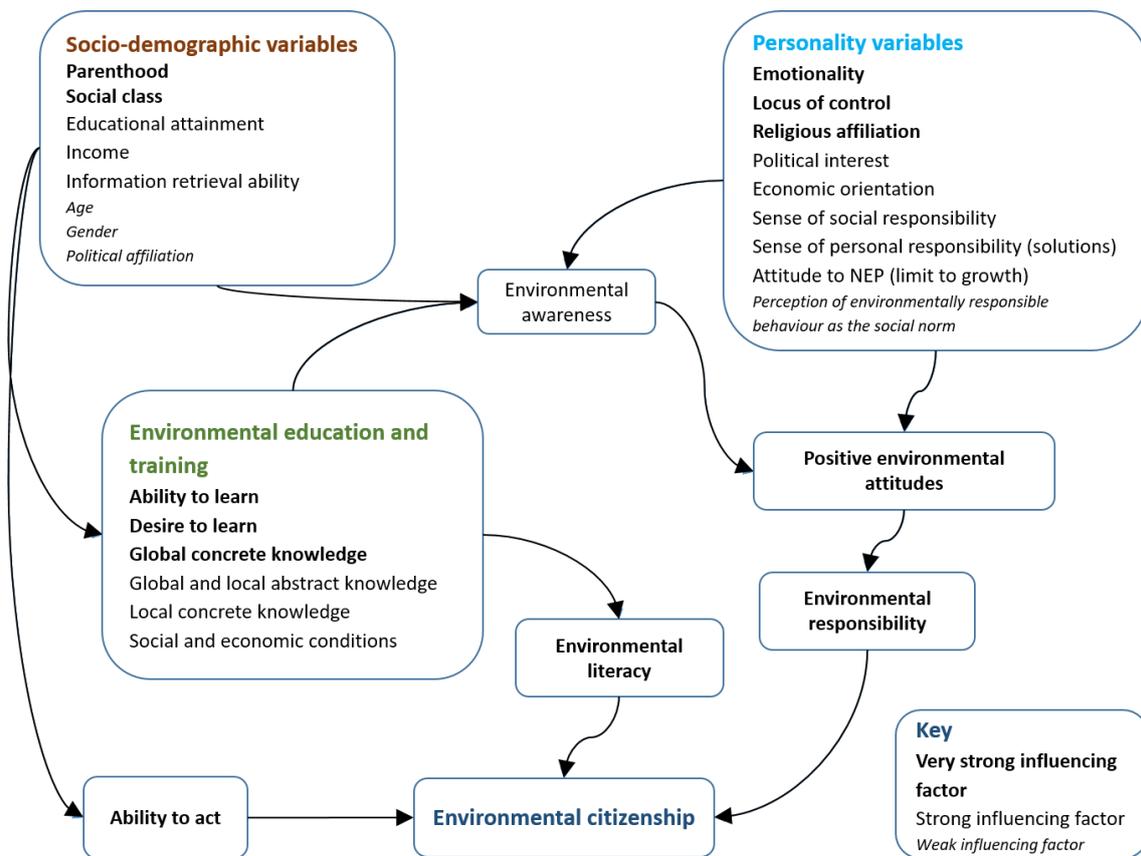
Figure 2.2 Empirically derived model of environmental citizenship in terms of the relationships between influential factors. Variables accounted for 39% of the variation in pro-environmental behaviour. Simplified from Hawthorne and Alabaster (1999).

There are two gaps within this model which my research addresses. First, the definition of environmental citizenship as engaging in pro-environmental behaviours (PEBs) is narrow. To give an example, whilst undoubtedly PEBs are important for reducing individual carbon footprints, climate change is a systemic issue that requires institutional action and the locus of control of individuals is, in reality, limited (Cao, 2015; Dobson, 2003). If one views climate change as a social problem caused by the structures of society then it is logical that environmental citizenship must go beyond the private sphere of individual choices, and extend into the public domain through political and social actions which seek to change policy and culture. The definition of environmental citizenship therefore should be much broader than PEBs and measurements should include participation in the machinery of society.

Second, the model does not examine the relationship humans have with the environment as a tangible, physical place, and why this should inspire attitudes,

values and feelings which align with pro-environmental sustainability[8]. Reflection on the model through a geographical lens raises questions about place and scale, which are not accounted for. The model reflects the limitations of the normative approach to environmental management that persists today, which is to view environmental problems as scientific issues with scientific answers. In the normal science view, the solution consequently can be produced through knowledge acquisition, which will inevitably raise awareness and concern, and in turn lead to pro-environmental behaviour change (Kollmuss and Agyeman, 2002). Based on this knowledge or information-deficit philosophy, environmental education has been in practice for decades as the primary means of influencing behaviour. Though we have seen awareness levels rise throughout that time and concern reach a peak in recent years, nevertheless the climate emergency and ecological crisis are more pressing now than ever.

Barr (2003) challenges the knowledge deficit approach for environmentally responsible behaviour. Barr cites both situational factors (such as access to services) and psychological factors (such as moral obligation and norms) as being important. In the study Barr highlights that environmental citizenship is a form of collectivism at local community level and found empirically that engagement in pro-environmental behaviours, such as recycling, was higher in those who were politically engaged with policy awareness, whilst environmental knowledge had no effect. Waste minimisation was much rarer than recycling and was part of civic-engaged, environmental responsibility. This particular study perfectly exemplifies the need to consider practice of pro-environmental behaviours as part of a wider civic environmental citizenship which reflects political engagement rather than knowledge.

Considering the political angles of marine citizenship forces a reflection on the extrinsic influences upon it. Marine citizenship is not only influenced by the

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[8] Noting that in the Hawthorne and Alabaster model emotionality relates to environmental issues rather than environments as places.

personality of individuals but also by the structures of society. These impact upon the locus of control felt by marine citizens, on the types of marine citizenship actions that are accessible, and on the formal participatory structures for marine decision-making. Therefore, one cannot really understand the concept of marine citizenship without considering both the intrinsic and extrinsic influences upon it. The societal and social setting is important to both environmental impacts and the role that individual citizens can play to address them.

As a synthesis of the prior research into motivators for environmental citizenship, Hawthorne and Alabaster's model was comprehensive and developed the field. It was used to directly inform the subsequent marine citizenship model and definition where the message of environmental education as the most influential factor was built upon (McKinley, 2010), and as such has pertinence for my research. However, this has led to a heavy focus on deficit approaches and individual behaviours. This may be pragmatic, with education and tangible pro-environmental behaviours perhaps easier to deliver and evaluate than culture change, but this highlights that there are significant gaps waiting to be explored.

2.3.2. MARINE CITIZENSHIP

The concept of marine citizenship first appears in the literature as ocean citizenship in 2007 (Fletcher and Potts, 2007). This ground-breaking paper states the value and benefit of ocean citizenship as hinging on three concepts: first, that the ocean is a common good; second, that individuals each have an impact upon the ocean's health; and third, that people geographically relate to this environment. Whilst this work argues for a place-based, value-led understanding of ocean citizenship, it proceeds to advocate for raised awareness and ocean literacy (knowledge-deficit based) as a means of

promoting ocean citizenship[9]. From this starting point, the concept of marine citizenship has been further developed and an initial framework proposed (McKinley, 2010), based upon the environmental citizenship model of Hawthorne and Alabaster (1999) and literature review (Figure 2.3).
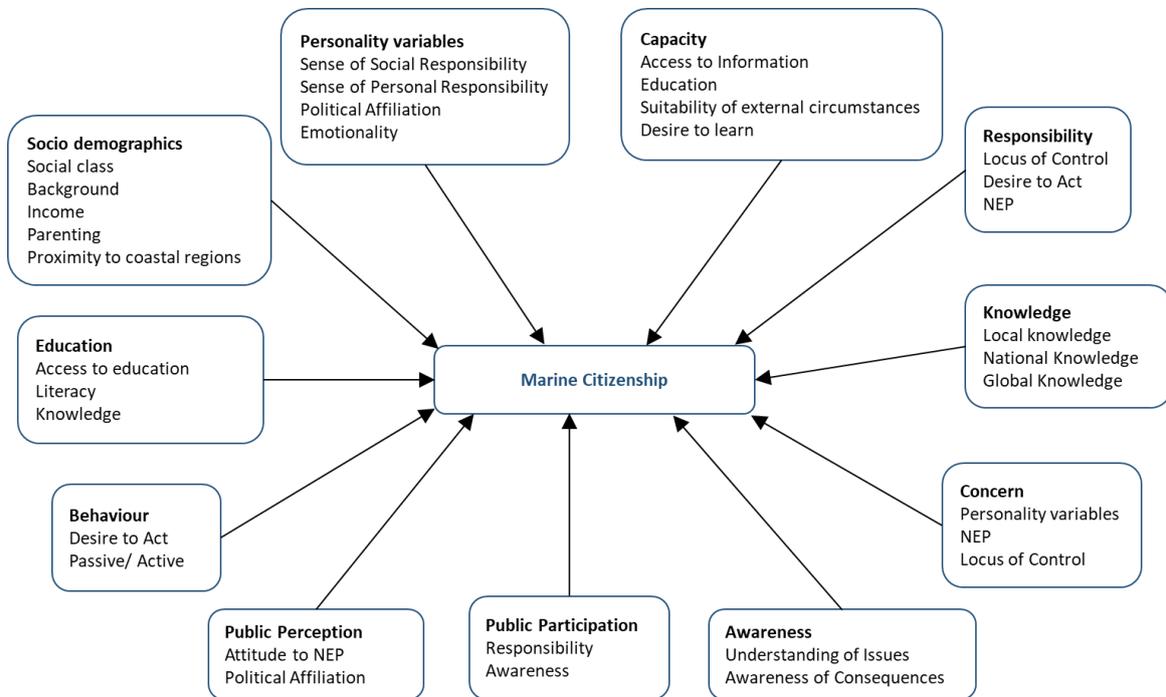
Figure 2.3 Initial model of marine citizenship by McKinley (2010), building upon the environmental citizenship model of Hawthorne and Alabaster (1999).

This was further refined using marine practitioner interview data (McKinley, 2010; McKinley and Fletcher, 2010) (Figure 2.4) and a definition first provided:

> "*Marine citizenship can be defined as having understanding of the individual rights and responsibilities towards the marine environment, having an awareness and concern for the marine environment and the impacts of individual and collective behaviour, and having a desire to*

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[9] There are live contemporary debates as to the meaning of ocean literacy which are challenging knowledge-deficit views that more concrete marine knowledge is pre-requisite and a motivator for marine citizenship. There is a move towards ocean literacy as having marine citizenship as the end goal and therefore encompassing abstract knowledge for example about effective pro-environmental behaviours and participation in marine decision-making. My research is investigating specifically the practice of marine citizenship and marine citizen conceptualisations of it, and does not directly address the ocean literacy debate.

have a role in ensuring on-going sustainable management of the marine environment." (McKinley, 2010, p294)

The models and definition cemented marine citizenship as being focused on personal actions, and couched it in terms of policy-making, as something that can be created by policy and can influence policy. These important contributions recognise both the significant threat to the marine environment and the power of people to reduce that threat through individual actions. They also highlight that the marine environment has a distinct capacity to engage people in environmental citizenship. The call for debate on marine citizenship issued by McKinley and Fletcher (2012) was pivotal to the development of my research and provided the groundwork on which to base my research design.
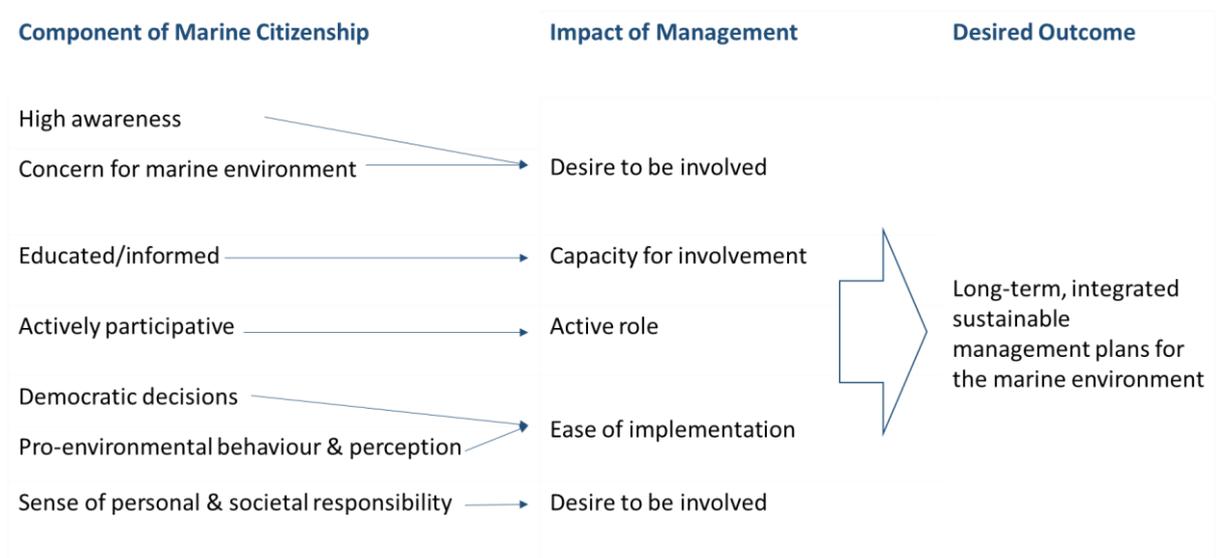
Figure 2.4 Model of marine citizenship by McKinley & Fletcher (2010), developed using literature review and marine practitioner interviews.

Reflecting the top-down policy-led approach to this earlier research, evidence for development of the model came from interviews with marine practitioners. Empirical work supporting the model highlighted two key components: education and personal attachment. Here personal attachment is defined as "*including a variety of factors including but not limited to livelihood dependency, childhood memories, recreational ties, and historical or cultural ties to an area.*" (McKinley, 2010, p201). Having both factors in place leads to optimal citizenship. Other factors, such as socio-economics, are enabling factors that modulate the extent of citizenship after the two key components are laid down. Thus far, empirical work has not examined personal views of those who would

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consider themselves to be active marine citizens, deferring to the views and experiences of marine professionals.

The model in Figure 2.4 indicates a broad range of factors as influential and sets the scene for subsequent multi-disciplinary investigation into marine citizenship and marine pro-environmental behaviours, from public perceptions research, through ocean literacy, and values and attachments. As of November 2020, a web of science[10] literature search for "marine citizenship" yielded only nine articles, an increase of only two since the commencement of this research project in 2015[11]. A search for "ocean citizenship" yielded an additional five articles, four of which were published during the period of this research. Expanding these search terms by excluding the quotation marks yields a total of 32 research articles looking at some aspect related to marine citizenship.

Table 2.1 provides an overview of the most relevant marine citizenship research in the full articles obtained via those and additional literature searches, demonstrating the breadth of interpretation of the term, the range of forms of citizenship that are performed (defined as such or otherwise), and the prevalence of top-down aspects such as education, awareness raising, and policy interventions. The criteria for the columns are derived from the main areas of influence identified by (Hawthorne and Alabaster, 1999). The contributions and limitations of research for each area is discussed below. This is not an exhaustive list of literature pertinent to the topic of marine citizenship, only those which acknowledge the citizenship aspect of marine public engagement or marine anthropogenic threats and offer empirical advancement on the topics.

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[10] https://apps.webofknowledge.com

[11] Searches for "marine citizen*" increase the number of hits to 29 but do not increase the number of marine citizenship articles. Additional articles relate entirely to marine citizen science and consider effectiveness and quality of citizen science data, using citizen science to increase knowledge acquisition, devising engaging marine citizen science projects, general benefits of marine citizen science to science data collection, and barriers to participation in marine citizen science.

Table 2.1 Summary of key themes of marine citizenship literature to date, cross-referenced against dominant influencers in environmental citizenship models. Search term codes: MC = "marine citizenship"; OC = "ocean citizenship"; mc = marine citizenship; oc = ocean citizenship. Two papers did not arise in any of these searches but are considered worthy of inclusion here having been identified through citation, and pertinent to marine citizenship; likewise the PhD thesis of McKinley.

Reference	Search term	Education/ literacy	Awareness/concern	Socio-demographics	Social & economics	Policy/governance and participation	Personality variables	Place attachment	Summary of study
Total		25	18	9	6	16	5	4	
Fletcher and Potts (2007)	OC	X	X						Developing ocean literacy as a means to promote ocean citizenship.
McKinley (2010)		X	X			X		X	Development of first proposed marine citizenship model, pared down to environmental education and awareness, modulated by proximity and social variables.
McKinley and Fletcher (2010)	MC	X	X						Marine citizenship through a policy lens
Gebbels et al. (2011)	mc	X	X						Citizen science (school and business)
McKinley and Fletcher (2012)	MC	X	X			X		X	Call for debate on policy role for marine citizenship
Potts et al. (2012)	oc					X			Policy review situating citizenship as required for transfer of power
Vasconcelos et al. (2013)	mc	X	X			X			Co-management of marine protected areas
Rees et al. (2013)	MC	X	X			X			Perceptions of marine practitioners
Jefferson et al. (2014)	MC	X	X	X			X		Public perceptions
Parsons et al. (2014)	MC			X	X				Citizenship as an important factor for marine conservation
Gelcich *et al*, (2014)	mc	X	X	X					Pan-European survey on informedness/information sources
Pearson et al. (2014)		X	X						Survey of knowledge/awareness of fishing gear bins in Australia as facilitating marine citizenship.
Hamilton and Safford (2015)		X		X	X		X		Explores link between education and other variables, notably political partisanship
Ram-Bidesi (2015)	MC	X			X				Role of women in stewardship in Pacific islands
Swanson (2015)	mc	X							Interdisciplinary approach to educational outreach
Guest et al. (2015)	MC	X							"Translations of knowledge into action" in school
(Hoeberechts *et al.,* 2015)	oc	X							Deep-sea as a means of improving ocean literacy/education
Chen and Tsai (2016)	OC	X	X	X			X		Influence of knowledge and concern on behaviour
Heck et al. (2016)	mc	X	X	X		X		X	Knowledge as it relates to acceptance of planning (desalination plant)
Potts et al. (2016)	oc		X	X					Pan-European perceptions research
Wyles *et al.* (2017)	OC	X	X			X			Effect of participation (beach cleaning) on pro-environmental intentions, wellbeing, and education.

Konecny *et al.* (2018)	OC					X			Clean-up activity as a means of reducing marine littering.
(Yusah *et al.*, 2018)	mc	X	X	X	X	X	X		Malaysian island community; attitudes towards fishing and conservation according to various variables. Relevant but not contextualised as citizenship.
(Easman *et al.*, 2018)	mc		X						Citizenship is key word. Comparison of concern towards marine environmental threats in professional and public populations, and associated PEBs
(Jabar *et al.*, 2018)		X	X			X		X	Marine citizenship in island nations
(Whyte, 2019)	oc					X			Surfers as saltwater citizens (but not environmental citizens)
(Kelly, Fleming, and Pecl, 2019a)	MC								Though marine citizenship is mentioned, study focuses on citizen science as being an expression of marine citizenship.
(Kelly, Fleming, Pecl, *et al.*, 2019b)	MC	X				X			More focused on citizen science as means of creating social licence.
Fielding *et al.* (2019)	OC	X							Value of MOOCs in improving ocean literacy and consequently (uninvestigated in this research) ocean citizenship
(Stoll-Kleemann, 2019)	mc	X	X	X	X	X	X		Literature review of ocean literacy.
(Rahman, 2020)	mc	X		X	X	X			Environmental citizen science for improving education and equipping local youth to engage in decision-making.
(Winks *et al.*, 2020)	mc	X							Citizenship in keywords. Ocean literacy in marine courses.
(Salazar *et al.*, 2019)	oc	X							Immersive public engagement with deep-sea dive simulation
(O'Leary *et al.*, n.d.)	mc					X			Participation in MPAs in Africa.

It can be seen from Table 2.1 that self-ascribed marine or ocean citizenship research is dominated by education and awareness raising. The founding marine citizenship work by McKinley and Fletcher (2010, p382) states that evidence supports "*the broad hypothesis that targeted environmental education can provide long-term solutions to environmental issues through altered individual behaviour and community attitude.*" This has been the basis for much of the subsequent body of research. It is clear from research that these factors are very important, though this seems to be a particularly strong focus in the ocean-related environmental research (Stoll-Kleemann, 2019). Environmental education as a field has been criticised for being positivist, behaviourist and too individualistic (Robottom and Hart, 1995). The (still contested) meaning of environmental education has expanded to be inclusive of political ideologies that would sit more comfortably within environmental citizenship (Schild, 2016), so it is perhaps a feature of the transition of environmental education in

environmental citizenship that has particularly driven the positivist, knowledge-deficit approach.

Practitioners in marine management place high importance on public education (McKinley and Fletcher, 2010; Rees *et al.*, 2013) and it has been applied across publics with marine management or modifying marine behaviour in mind (Fletcher and Potts, 2007; Vasconcelos *et al.*, 2013). Research has found a positive relationship between knowledge and concern (Chen and Tsai, 2016; Gelcich *et al.*, 2014), knowledge and specific marine actions (disposal of marine litter with entanglement risk: Pearson et al., 2014), and the transfer of knowledge within communities has also been investigated (Ram-Bidesi, 2015).

The public perceptions research literature strongly makes the case for awareness and attitudes having an important role in marine citizenship. The field draws on environmental psychology and its relevance in tailoring appropriate messages and understanding differing values (Walker-Springett *et al.*, 2016). It feeds into awareness raising and concern, and also practical aspects of environmental management such as acceptability of proposed planning projects (e.g. wind turbines, (Schöbel, 2012) as referenced in Walker-Springett et al., 2016). Findings illustrate gaps in awareness of different marine ecosystems (Jefferson, R. L. *et al.*, 2014); effective (and perceived effective) methods of raising awareness (Fletcher and Potts, 2007; Gebbels *et al.*, 2011; Gelcich *et al.*, 2014; McKinley and Fletcher, 2010; Swanson, 2015); the influence of awareness and concern on pro-environmental behaviours (Chen and Tsai, 2016, found low levels of such behaviours even with higher levels of concern); the degree of awareness of specific marine issues (Gelcich *et al.*, 2014); and the influence of other factors, such as place, on concern and awareness (McKinley, 2010; McKinley and Fletcher, 2012).

Though relatively well-researched, the limitations of these avenues of investigation for understanding marine citizenship should be acknowledged. Implicit within the literature is the assumption that knowledge and education will consequently lead to changes in environmental behaviour. In some pieces of research the methodology used to test knowledge looks at quite intricate academic information (e.g. in Guest et al., 2015) which implies that this depth of abstract knowledge is pre-requisite to environmental citizenship activities, but

does not address the concrete knowledge that relates to action or cultural norms that may drive behaviour without deeper understanding (Hawthorne and Alabaster, 1999). Kaiser and Fuhrer (2003) segmented knowledge into declarative, procedural, effective, and social, and argued that the convergence of these knowledges is required to produce pro-environmental behaviours (PEBs); whilst Estrada *et al.* (2017) instead argued that efficacy and values mediate knowledge in its influence on PEBs. In both studies, the case was not clearly made as to the direction of any causative effect – might not values and self-efficacy promote the acquisition of knowledge (of various types) in order to perform PEBs? The relative role of general educational level has been compared to other factors, for example political partisanship, which, in a US study, was found to mediate the effect of education: higher education in Democrats led to more environmental belief and concern whilst higher education in Republicans had the opposite effect (Hamilton and Safford, 2015). Such findings demonstrate the pitfalls in assuming education directly predominates over other variables.

Social demographics have not been a feature of much research. Though numerous studies investigate differences in findings between, for example, sex, educational attainment and age, the effect of social cultures and differing economic perspectives on publics' citizenship activities, perhaps due to their complexity, have been under-researched. References to 'normative' attitudes (such as picking up litter being the 'right' thing to do (Pearson *et al.*, 2014)) in the research indicate the role of other people on an individual's actions and hints at a role for prevailing cultural norms. One of the most comprehensive pieces of research examining the interplay of social demographics comes from Hamilton and Safford (2015) who surveyed coastal and inland towns about attitudes towards marine impacts and found a pattern of economic self-interest. For example, areas where there was a strong wild-fishing industry tended to be more concerned about aquaculture, and areas that had suffered from pollution events were more concerned about pollution. This study demonstrated the complex interplay between political leaning, education, location, and occupation, the details of which are lost in most studies which only pick one or two factors to study. Deliberative research with marine professionals has

highlighted this need to better understand societal and cultural factors (Parsons et al., 2014).

It also clear that numerous important aspects of classical models of environmental citizenship in a marine context have been very little researched, particularly the role of place attachment, personality variables, and social and economic factors. My research contributes to these areas in particular to improve our understanding of the interplay of personality, the ocean as a place, and the policy and social setting of marine citizenship.

2.4. AN HOLISTIC APPROACH TO INVESTIGATING MARINE CITIZENSHIP

In this section I draw together key ideas from across disciplines that inform my methodological choices to investigate marine citizenship holistically. To align with the overall thesis structure, I begin with the external setting of marine citizenship and the policies and legislation that shape it in practice. I then move to the individual person and psychological factors that might influence choice to engage in marine citizenship. And finally, I look at geographical factors that might help us to understand the relationship humans have with the sea.

2.4.1. POLICY

Marine citizenship has been argued as a feasible policy measure to improve marine environmental health (McKinley and Fletcher, 2010, 2012; Potts, T. *et al.*, 2016; Rees *et al.*, 2013). In this way, views of marine practitioners have been sought to identify what the role for marine citizenship might be, amongst other challenges for the marine community (McKinley, 2010; McKinley and Fletcher, 2010; Parsons *et al.*, 2014). However, it is not clear that such investigations have examined all the facets of marine citizenship in the context of policy, nor that the public, as current or potential marine citizens, have participated in these discussions. Within this thesis I argue that marine citizenship, as a political act, can be viewed in terms of both rights and responsibilities, and that decision-making and development of solutions will be improved with wider public participation. These arguments are based on general citizenship theory (introduced in 2.3 above), and the evidence relating to public participation in decision-making (which I go on to discuss below),

particularly for wicked problems such as climate change and ocean health. In this section of the literature review, therefore, I take a more sweeping look at this evidence rather than just focusing entirely on marine policy.

Studies concerned with participation in marine policy often take a rather instrumental view of very specific functions such as citizen science or corporate social responsibility (Gebbels *et al.*, 2011), or involvement in environmental planning or management (Heck *et al.*, 2016; Vasconcelos *et al.*, 2013), without situating these as citizenship acts. By viewing discrete outcomes of public participation in marine policy processes as objects, the research has tended toward an overly simplistic understanding of citizenship as pro-environmental behaviours, which does not examine it as a political concept or social construct.

The research to date neither answers nor raises the question of whether marine citizenship is independent of other kinds of citizenship and what different motivating factors might be implicated for different kinds of citizenship. My previous research into active volunteering in Devon found volunteers are much more likely to vote than their county average and tended to do many kinds of voluntary activities (Buchan, 2016), suggesting that people who are participatory tend to be so in multiple ways. Whilst championing marine citizenship for good marine environmental health, research has not engaged with the nature of marine citizenship as a civic, political act, nor how it and wider policies might influence one another. There is additionally a current gap in the research connecting the participatory legislation and marine citizenship, which this research seeks to inform.

There is a strong Global North bias in the literature explicitly using concepts of citizenship. This may be a reflection of ideas around environmental justice and unequal social responsibility, such as expressed by Dobson (2006). Or it may be a reflection of the more liberal tradition of contemporary citizenship in the Global North, rooted in individuals making behavioural choices, whilst harking to republican citizenship traditions of duty. It is noted that there is a body of literature related to stewardship and co-management of specific marine resources, much of which examines cases from island or developing nations, particularly subsistence communities (e.g. Ram-Bidesi, 2015). Stewardship in this context typically relates to situated stakeholders being involved in local

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management, typically of fisheries or marine protected areas, usually with a view to increasing sustainability of marine resource utilisation. The stewardship literature tends not to couch this in political terms so much as a means of increasing environmental literacy and sustainable practice in local, often subsistence, communities (see for example Gómez Mestres and Lloret, 2017, and a wider discussion on stewardship in Bennett *et al.*, 2018). I could argue that stewardship can be a voluntary choice within marine citizenship, but the use of the term 'citizenship' in the literature indicates an unclear delineation between lifestyle choice and economic necessity to participate (Vasconcelos *et al.*, 2013) so this cannot be assumed.

If we are to examine the true potential of marine citizenship as a marine policy measure, then we first need to develop a more rounded understanding of what marine citizenship is (moving beyond limited notions of pro-environmental behavioural choices) and its wider context within a participatory society. Even the most basic theories of citizenship acknowledge that as well as responsibilities, citizens win and have conferred upon them a set of rights, yet these have been little investigated within the environmental science-led body of literature.

2.4.1.1.   Marine Citizenship Rights and the Right to Participate

Marine environmental rights have been most extensively discussed in the McKinley marine citizenship papers (McKinley and Fletcher, 2010, 2012), where marine citizenship is defined "*… as having understanding of the individual rights and responsibilities towards the marine environment…".* However, marine environmental rights are not further defined or explored in these works, and it seems that research into the policy context of ocean related behaviour has focused on conservation and environmental legislation rather than rights to participate (Stoll-Kleemann, 2019). Therefore, interrogating what rights exist and how these manifest in practice in the real world is novel and important.

Above in 2.3, I introduced Marshall's framework of civil, political and social rights. Given the post-normal science lens used in my research, I pay particular attention to political rights, which are the rights concerned with participation in self-governance in a marine context. It is practical to begin this interrogation by starting with the existing legislative framework on environmental rights. The

Convention on access to information, public participation in decision-making and access to justice in environmental matters (United Nations Economic Commission for Europe, 1998), known as the Aarhus Convention, is a primary piece of international legislation aimed at recognising a human right to live in an environment adequate to well-being and health for current and future generations, and to participate in the environmental decision-making which influences environmental outcomes. Its objective rests on three key pillars:

> *"In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention."* (UNECE, 1998, Art.1)

In addition, the Convention also recognises a duty for humans to work together and individually to ensure a healthy environment is available for current and future generations. As such, it must be viewed as relevant to environmental citizenship, and consequently marine citizenship. In the EU, the requirements of the Convention have been ratified in a series of directives and regulations: *Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC* (2003); *Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC (2003*); and *Regulation (EC) No 1367/2006 of the European Parliament and of the Council of 6 September 2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies* (2006). Together with *Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment* (2014) and UK national legislation transposing the aforementioned Directives (which now will be in the form of "retained EU law" under the

European Union (Withdrawal) Act 2018), these principles enshrine in law the duty of UK governments to provide not only opportunity for public participation in decision-making but also develop environmental education programmes enabling informed participation (Objective 4 of *Directive 2003/35/EC,* 2003) and use the language of rights. In addition they denote access to environmental information and justice on environmental matters (Article 4, *Directive 2003/35/EC,* 2003). De Santo (2016) offers a more thorough examination of the intersecting legislation relating to public participation in environmental matters in the UK landscape.

The public participation 'pillar' of the Convention has been examined in the field of environmental law to mixed opinion. It is noted as a fundamental piece of legislation which confers important rights on the general public and the public concerned or affected by an environmental development, but is also criticised for failing to address or define the nature of participation in practice (Lee and Abbot, 2003). Though bolstering power to seek redress for environmental justice, the wording tends to reinforce existing power imbalances (Nadal, 2008). Environmental NGOs are empowered to represent the public concerned, but the ability to do so is questioned when barriers to public engagement with NGOs remain; international NGOs which have capacity to engage with policy processes are far removed from local concerns; and there is a lack of clarity as to whether environmental justice NGOs fall under the umbrella of environmental protection (Lee, 2012; Nadal, 2008; Steele, 2001; and e.g. see Wang, 2015 on role of NGOs on nanotechnology policy at EU level). A further criticism is that the power remains in the hands of individual developers (the applicant, which may be private or public) as they are responsible for determining who the 'public concerned' is, which opens the field for bias in favour of the applicant and reduces environmental justice advocates to objectors or protestors rather than agents in the decision-making process (Holder, 2006; Nadal, 2008; Steele, 2001).

When considering the nature of participation, at the UK level, consultative participation is the norm (UK Government, 2014) and decision makers are obliged to give due account to consultation outcomes (Lee and Abbot, 2003). There is cynicism about a 'tick-box' approach to public participation in this context and advocates of deliberative theory believe deliberative approaches

will lead to better outcomes. Whilst deliberative decision-making has been criticised for being too time-consuming and dominated by powerful groups (McKenna and Cooper, 2006; Steele, 2001; Turnpenny *et al.*, 2009), it is widely considered as producing 'better' solutions (Steele, 2001). What 'better' means varies according to theorists and perspective; for example, 'better' may mean more democratically legitimate. By incorporating a range of voices in a decision, the outcome might be both more representative and more acceptable to the public (Scharpf, 2003). Additionally, solutions may be more effective if they include a diversity of input, especially where that input includes both people with 'situational' knowledge and those with 'interested' expertise. A plurality of voices increases the range of solutions available to solve the problem, and it is this problem-solving application of deliberative theory that Steele (2001) advocates is conferred by the Aarhus Convention to environmental decision-making.

How public participation occurs in practice is cogent to the marine citizenship debate, be it as a policy measure or a wider social phenomenon, and analyses of its efficacy can inform where policy can be improved to better promote and facilitate marine citizenship. Perhaps the most significant recent marine policy development in the UK was the *Marine and Coastal Access Act 2009*. The Act includes a range of policy-making processes, for example, for marine planning and licensing, and public access around the coast of the UK. Additionally, it commits to a 'blue belt' of Marine Conservation Zones (MCZs). The Act requires authorities to produce a statement of public participation for any marine planning activity, which includes people with an interest in the plan, and the general public (Schedule 5, Paragraph 4). However, this provision for the general public is not explicitly extended to MCZ designation. Whilst there was a wide-scale participatory decision-making activity to identify candidate MCZs, this was not a legal requirement and it was confined to persons with an interest in the sea and procedurally let to wide-scale disillusionment (De Santo, 2016). The participatory process was criticised for employing 'thin' proceduralisation (Pieraccini, 2015) which is focused on bargaining and compromise, rather than 'thick' proceduralisation which is deliberative and aimed towards mutuality and consensus (Black, 2000). Specific criticisms are directed towards a dichotomy of socio-economics and ecology written directly into the *Marine and Coastal Access Act 2009*, and incorporated into the unilaterally developed Ecological

Network Guidance (ENG) used to frame the process of designation. This led to participants being categorised as single-issue stakeholder representatives. In so doing this effectively excluded the right of the general public to be a stakeholder of the marine environment and reinforced oppositional tensions between stakeholder groups. Pieraccini (2015) neatly summarises:

> "*The categorical separation between the socio-economic and the ecological, embodied by separation of participants in distinct stakeholders/ categories representing different interests have then been internalised by the fishermen, contributing to their negative perception of the MCZs, of the designation process and of the 'ecological other'. … Acknowledging multiplicity therefore would have transformed the deliberative space to a space of empowerment.*" (Pieraccini, 2015, p66)

It should be noted though that there are opportunities for public participation at later stages, such as public consultation before designation (s.119 *Marine and Coastal Access Act, 2009*) and for the introduction of management measures in MCZs, such as bylaws (s.130 *Marine and Coastal Access Act, 2009*). As a recent example of public participation in marine decision-making policy, this highlights the lack of publics being included in marine debates, and problems with proceduralisation reinforcing assumptions and barriers rather than removing them. Where marine policy still limits public participation to stakeholders and to consultative rather than meaningful procedures, it is clear there is a long way to go to incorporate marine citizenship into the public participation landscape.

Most recently, the UK Government released a 25 Year Environment Plan (DEFRA, 2018), in which Chapter Five is concerned with the ocean and states:

> "*An understanding of marine economic, social, historical and environmental values can help incentivise behaviours and practices that support stewardship and sustainability.*" (DEFRA, 2018, p106)

Despite an introduction to the plan that references stewardship on numerous occasions, the ocean chapter focuses on administrative collaboration around UK territorial waters; sustainable fishing based on the ecosystem approach; achieving good environmental status via regional marine plans; and embedding

the natural capital (neoliberal) approach across UK marine management. At no point in this chapter is public participation referred to, though elsewhere it is cited, for example in relation to green infrastructure, a programme of public events in 2019, and in relation to individual responsibility referenced within the Sustainability Development Goals (United Nations, 2015).

2.4.1.2. Summary

Despite moves within marine practitioners and marine scholars to more actively utilise marine citizenship in marine policy, as evidenced by the above discussion, the legislation and relevant environmental plans rarely explicitly express public participation as a goal or procedure, and when they do they tend to limit it to stakeholders with specific interest in the sea. How the more political and challenging marine citizenship might be incorporated into this policy landscape, at least in the UK, is unclear. In order to improve our understanding of marine citizenship and how it can act as a policy tool, I reflect in my research on the views of marine citizens themselves as to the nature of their participation in marine environmental decision-making, and their understanding of the rights afforded to them and duties they acknowledge. Additionally, my research shifts the field of debate away from top-down, technocratic and limited understandings of the concept, and more properly embeds it within the wider citizenship literature.

2.4.2. PEOPLE

The field of environmental psychology is a wide body of literature within the psychology discipline and is dedicated to exploring the relationships between and influence of characteristics of human nature and environmental attitudes and behaviours. In this research I use literature purposefully and selectively to develop an interdisciplinary understanding of marine citizenship. It is necessary to draw from leading theories and methodologies in this field, in order to create a contribution to our understanding of marine citizenship that reflects the role of the person in participation of marine citizenship. Environmental psychology has been shown to contribute to our understanding of human-ocean relationships in a range of useful ways (Walker-Springett *et al.*, 2016). The most prominent areas of research, particularly in relation to pro-environmental behaviours, are

values, identities, and environmental attitudes, and there is intersection here with the role of place.

2.4.2.1. Values

Values are the underlying morals or principles with which people guide their lives and they are considered to be fairly stable (Corner *et al.*, 2014). Satisfaction of values contributes to feelings of wellbeing and supports self-conceptualisation (Schwartz, S., 2012). Contradiction to values is uncomfortable and unsustainable as it challenges the sense of self a person holds. It is important here to draw the clear distinction between the values a person holds, which may shape how they understand or appreciate an environment and which I investigate, and a valuation of the environment, such as ecosystem services or natural capital approaches, which I do not.

Within the field of environmental psychology there are multiple attempts to define and investigate the values held by the public and their relationship with pro-environmental concerns, intentions or actions. For example, the New Environmental Paradigm (NEP), which values humanity as being interdependent with the natural environment rather than apart from it, finds that certain environmental values correlate with pro-environmental behaviours or environmental/marine citizenship (Chen and Tsai, 2016; Hawthorne and Alabaster, 1999; McKinley, 2010). Jefferson et al. (2014), used a social value structure based on Maslow's Hierarchy of Needs, to explore the links between values and perceptions, building on prior work evaluating behaviour change for environmental reasons (e.g. Natural England, 2008). The structure divides people into one of three groups: Settlers, Prospectors, and Pioneers (see Table 2.2). Pioneers were found to have the greatest understanding of ecological concepts, and particular differences were found between utilitarian and charismatic values, relating to, for example, species recognition and perceptions of indicators of marine environmental health. Values can act as mediators of how people are motivated to do PEBs, with egoists motivated by external regulation and biospheric/altruists motivated by intrinsic, more self-determined forms of motivation (de Groot and Steg, 2010).

To simplify this field of enquiry, many researchers have attempted to strip research down to the most basic human values and have adopted the Schwartz

Human Values model (see Figure 2.5). Although it is not referenced in the marine citizenship literature, it features in the environmental behaviour change literature (Hicks *et al.*, 2015) and is widely used in psychology (Bilsky *et al.*, 2011; Cieciuch and Schwartz, 2012; Schwartz, S. H. *et al.*, 2001).
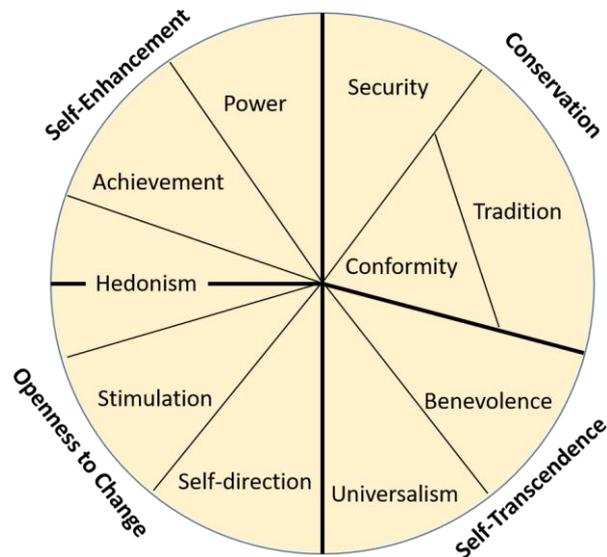
Figure 2.5 Schematic depicting Schwartz Human Values from Schwartz (2012). Values are a continuum around the wheel. The system evaluates how values are held relative to one another not as measurable individual traits.

This framework has received extensive empirical testing internationally and claims to have narrowed down the ten most fundamental human values into which all others can be categorised (Schwartz, S., 2012; Schwartz, S. H. *et al.*, 2001). Unlike the Maslow system, which is aimed at populations, the Schwartz system can be applied to individuals and populations, and describes values at the lowest common denominator relative to one another, which means values linked to environmental citizenship behaviours can be mapped to a finer scale and alternative structures (e.g. Maslow in Table 2.2). It also makes this system appropriate for this research where I consider both population and individual characteristics.

Table 2.2 Comparison between two recognised human value structures: Maslow's hierarchy of needs *(Natural England, 2008)* and Schwartz Human Values *(Schwartz, S., 2012)*.

MASLOW VALUE	DESCRIPTION	CORRESPONDING SCHWARTZ HUMAN VALUE
SETTLERS	Motivated by resource availability and fear of threats	Security, Conformity, Traditionalism
PROSPECTORS	Motivated by success, esteem of others	Power, Achievement,
PIONEERS	Motivated by self-realisation and	Universalism, Benevolence, Self-Direction

Environmental behavioural research has typically focused on self-transcendence values of universalism and benevolence, which are found to be indirect promoters of pro-environmental attitudes and behaviours (Corner *et al.*, 2014). This is logical with universalism incorporating the whole world or ecosystem; and benevolence as consideration of the in-group, which is identity-dependent and could be considered as all people or groups of people with which a person identifies as belonging. When universalism is broken down into altruism/humanity or nature, the nature aspect (or biospheric value) is the stronger influence on PEBs (Katz-Gerro *et al.*, 2017).

Few studies have looked at additional values or the full set of values, in the context of pro-environmentalism. Those which have examined more widely have found, for example, mixed relationships between conformity and PEBs (Katz-Gerro *et al.*, 2017); self-direction acting inversely on climate change concern (Lucas, 2018); and achievement, hedonism, tradition and security as negative predictors of environmental actions, with universalism, benevolence and stimulation as positive predictors (Leviston *et al.*, 2015). I have been unable to find literature that relates basic human values specifically to marine pro-environmental behaviours or wider environmental citizenship, indicating a clear gap in our understanding about how basic human guiding principles relate to marine citizenship. For this reason, this research investigates all ten basic human values, both their relative importance in marine citizens as a population, and how they are qualitatively expressed in the context of the participation in marine citizenship.

2.4.2.2. Identities

Values are not the only psychological principles worthy of investigation. Identities are also significant. Generally speaking, moral identities create a heightened sense of responsibility (particularly consumer choices (Schmitt *et al.*, 2019)), and prosocial identities positively predict prosocial behaviours, highlighting psychological links between identities and behaviours (Hardy, 2006). Self-described environmental consumer identity has been found to mediate the relationship between values and PEBs (Gatersleben *et al.*, 2014; Whitmarsh and O'Neill, 2010).

To enable quantification of an environmental identity, Clayton's (2003) Environmental Identity Index (EIDI) uses a set of items with Likert scales. The scale incorporates aspects such as environmental attachment, spending time in nature, environmental citizenship, enjoyment of environmental aesthetic, and feeling part of nature. Clayton's EIDI has been shown to be positively associated with pro-environmental behaviours and doing such behaviours in an automatic way (Clayton, 2003; Freed, 2015) and has been used to validate measures of environmental participation, such as the Environmental Action Scale, EAS (Alisat and Riemer, 2015). Environmental identity has been found to be more predictive of behaviours than environmental attitudes (Stets and Biga, 2003; Watson *et al.*, 2015; Whitmarsh and O'Neill, 2010). One can understand this as environmental identity explaining the relationship between humans and the environment, whereas environmental attitudes objectify the natural world (Watson *et al.*, 2015). By internalising the environment as part of identity, it becomes possible to politicise nature, mediating the relationship between nature connectedness and activist PEBs (Schmitt *et al.*, 2019) and incorporating nature into concepts of what it is to be a 'good' citizen. This makes environmental identity a particularly interesting construct to investigate in marine citizens and helps widen what we know about marine citizenship out from education and ecological science and into more political interpretations. With the advantage of prior empirical evidence, the EIDI theory and items from the scale are directly employed in my research to support this investigation.

2.4.3. PLACE

The study of place is complicated with multiple terms sometimes used synonymously. For the purposes of this research, terms are used with the following understandings:

Place attachment is the positively experienced bonds which a person feels towards a place and the meanings the place is imbued with (Devine-Wright, 2013; Vaske and Kobrin, 2001).

Place identity is a component of self-identity or self-concept, and forms from a psychological investment in a setting (Vaske and Kobrin, 2001).

Place dependence is dependence upon a place to meet some kind of need, e.g. economic, emotional, or physical (Stokols and Shumaker, 1981).

To date, pro-environmental behavioural models typically make no reference to place (e.g. Blake, 1999; Fietkau and Kessel, 1981; Hines *et al.*, 1987; Kollmuss and Agyeman, 2002; Stoll-Kleemann, 2019). Those which do tend to focus on place attachment derived from proximity or frequency of visitation to the sea, hypothesising this will lead to more connection with/concern/knowledge about it and prompting more marine citizenship (Buchan, 2016; Kelly, Fleming, and Pecl, 2019; McKinley, 2010; McKinley and Fletcher, 2012). However, findings are unclear, with factors such as economic dependency being a strong connector to the sea (Hamilton and Safford, 2015) and evidence that people who move around more often are more likely to engage in civic participation on local issues than more rooted people (Gustafson, 2009). The complexity of the human relationship with place, involving environmental physical features (Scannell and Gifford, 2010a), social community (Hidalgo and Hernández, 2001), dependency for meeting needs (Vaske and Kobrin, 2001), and restorative effects (Korpela, 1989), *inter alia*, indicates it would be remiss not to examine further the qualitative nature of the marine environment as a tangible place and its impact upon marine citizenship, particularly perceptions of the marine environment and the processes by which it might create dependency, attachment or contribute to self-identity. Additionally it has been shown that emotional sensitivity to the environment is influenced by experiences of the environment, and in turn influences engagement in PEBs (Chawla, 1999).

One of the challenges within the place literature is distinguishing between place attachment and place identity, which are often used synonymously. Place identity, rather than being the focus of bonding or emotional attachment to place, can be viewed as the way place supports self-concept. Social identity theory has been used to expand on place identity by relating place to the four key identity components of self-esteem, self-efficacy, distinctiveness, and continuity over time and situation (Twigger-Ross and Uzzell, 1996). In this model, place must support each of the components to be congruent with an individual's sense of self, and for them to feel content in a place. Such place identity may relate to the type of a settlement (Feldman, 1990) and may be scalar, with people identifying as belonging to local, national, or global scales (Devine-Wright *et al.*, 2015).

Scannell and Gifford (2010b) define place attachment with a tripartite framework of Person, Process and Place: 'Person' relates to the memories or cultural associations of place at individual or group level; 'Process' includes affect, cognition and proximity-maintaining behaviour; 'Place' relates to social and physical characteristics of place. Though not used directly in this research, the framework illustrates the complexity of human relationship with place and how place attachment might also intersect with cultural and individual understandings of place.

There is limited research into the link between place and pro-environmental behaviours (PEBs) and that which exists is contradictory and complex (Carrus *et al.*, 2014). Vaske and Kobrin (2001) found that in young people, stronger attachment to a place led to more environmentally responsible behaviours. On the other hand, Uzzell *et al.* (2002) found that the relationship between place identity and pro-environmental behaviours was complicated and mediated by other factors such as cultural individualism. The authors also noted the importance of place identification – cultural meaning of the features of a place – which were a distinct but important influence on identity. A stronger natural environmental (as opposed to civic (built) environmental) place attachment might lead to more PEBs (Scannell and Gifford, 2010a), as might a stronger global scale of place attachment (Devine-Wright, 2013; Feitelson, 1991). Emotional, but not functional (relating to fulfilling needs), place attachment has a significant relationship to environmental citizen action both directly and when

mediated by individual trust in the people sharing the place (Payton *et al.*, 2005).

Inductive research into the citizenship activities and motivations of active volunteers in Devon found that environmental citizenship activities were scalar (Buchan, 2016). The majority of participants who referred to environmental citizenship did so at a local scale, primarily related to waste management, with two or three participating in practical conservation in their local area. Those who mentioned a broader range of environmental activities tended to show a global perspective in their motivations. Similarly, Hawthorne and Alabaster (1999) noted differences in attitudes towards local or global environmental issues. These findings suggest scales of place identity could also be implicated in marine citizenship and types of citizenship activity. Indeed a high global-national place identity has a positive influence on climate change concern, and multiple scales of place identity may be held with place attachment most strongly aligned with the scales most identified with (Devine-Wright *et al.*, 2015). This is of particular relevance to the marine environment due to the global nature of both its ecology and human use as a resource and transport role, and the affinity people feel to their local coastal area. Additionally, global scaled climate change itself is arguably the most significant driver of marine change including sea level rise, ocean acidification, and sea warming. An understanding of the scales of attachments and identities would therefore be of value to an understanding of marine citizenship.

In addition to the above, what has been missing from the place research is investigation of the quality of specific types of natural place that promote attachment and upon which place identity is based. Whilst the generic environmental identity acknowledges that people can feel they are a part of the natural environment (Clayton, 2003), this has not been more finely investigated at the level of types of natural environment, such as the ocean. Settlement identity indicates that people are capable of identifying with a specific type of social settlement (Feldman, 1990), so why not a specific type of natural place? The emotional and sensory evocations of the ocean offer a tantalising suggestion that it might have the capacity to be distinctly incorporated in notions of self-concept and identity. In examining the nature of the marine environment as a type of place, this research makes a significant contribution to the place

literature as well as addressing some of the current gaps in the marine citizenship literature.

2.5. CONCLUSION

Both the concept and the body of literature on marine citizenship are relatively new and consequently lacking in depth, particularly in relation to the political nature of citizenship. The field has something to learn from the more established field of climate and global environmental change social science research, as well as from green politics. This wider field is relevant to marine environmental issues not least because a major source of harmful human impact on the marine environment is caused by wider climate change. The climate and the ocean share a globalised nature, likewise remote from many individual citizens, so it is plausible there will be shared commonalities in the ways citizens engage with climate and with marine issues.

This research will assume a broad meaning of citizenship, in which citizens of today and tomorrow have a right, across all scales, to a functioning and sustainably utilised marine ecosystem, and have a duty to act as far as possible within their own power to secure this outcome. In addition, this citizenship must take place in a political background in which state policy enables people to maximise their ability to perform this duty and likewise takes action to secure this environmental position. Understanding how this form of environmental citizenship can come to exist, in terms of multi-scale and multi-level identities will form the basis for this research. One of the strengths of this PhD thesis is that it brings the criticism of rights and responsibilities within environmental policy and law, together with the environmental psychology theories of motivation to participate in marine citizenship, and the geographical aspects of the marine environment that promote desire to effect change.

This chapter has indicated significant gaps in the research area relating to underlying influences of citizenship and how to utilise citizenship as a concept in policy making. The environmental science-led focus on knowledge deficit and environmental education are insufficient to effectively address citizenship as a policy concept and the case has been made for using a much broader brush as we work to define and conceptualise marine citizenship.

To summarise, the key gaps identified in the existing literature are:

1) A focus on environmental education, awareness and public perceptions of the environment/environmental issues, with less attention paid to other factors such as place relationships and civic mindedness, despite these factors being identified in environmental citizenship models.

2) Limited attempts to situate marine citizenship within wider political understandings of citizenship.

3) A need to join up conceptualisations of marine citizenship with wider research into shifts from top-down spatial management and 'thin' proceduralisation, towards public empowerment.

4) A lack of comprehensive investigation into the person-based influences upon marine citizenship.

5) A particularly significant lack of investigation as to place-based components of marine citizenship.

This research project takes an holistic view to investigate a wide range of factors that drive marine citizenship, inclusive of influences on pro-marine environmental behaviours, political theories pertinent to marine citizenship, with the addition of the important dimension of the ocean as a political space for citizenship. Whilst 'green' citizenship has deliberated over questions of environmental justice and the respective roles of individuals, the nation-state and corporations, with this investigation of 'blue' citizenship I seek to additionally acknowledge and understand the character and power of the ocean as a place to inspire citizenship actions and transcend scales of political rights and duties. My research specifically addresses people and place-based gaps in the literature and deliberately provides space for the emergence of new influences and relationships between factors. It examines the feasibility of marine citizenship as a policy tool and challenges some of the prevailing normative approaches to participation.

PART TWO: DATA COLLECTION AND ANALYSIS

3. CHAPTER THREE: GENERAL METHODOLOGY

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3.1. INTRODUCTION

This interdisciplinary research project investigates the research question: *What is the role of marine citizenship in promoting good marine environmental health?* In the previous chapter I introduced and discussed a wide range of literature that has supported the development of my research approach and methods.

The research takes an holistic approach to examine what is understood by marine citizenship, how marine citizens are motivated, and the particular relationship between humans and the ocean. I purposely draw on a range of disciplines, and utilise a mixed methods approach to address the research topic of marine citizenship. In so doing, both the concept and practice of marine citizenship are investigated in a way that is distinct from more traditional environmental science approaches. The methodology described in this chapter produced a depth of knowledge that could not be achieved within a single discipline.

As I have introduced in Chapter One: Introduction, to help me answer the primary research question I identified four research questions:

I. *What is marine citizenship and who participates in it?*
II. *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?*
III. *How do motivational and value-based factors influence marine citizenship choices?*
IV. *How do place-related factors influence the practice of marine citizenship?*

As a combined deductive and inductive research design, I did not test hypotheses but rather exposed variables of importance to the establishment, development and practice of marine citizenship.

In this Chapter I first discuss the philosophies underpinning the research. I then describe the research approach and strategy, and the specific methods, data collection and analyses employed. Finally the ethical considerations of the project are presented together with a discussion about the research quality.

3.2. PHILOSOPHY

At the most fundamental level, my research fits within the broad philosophy of pragmatism. I respond to the area of environmental pragmatism concerned with "*the articulation of practical strategies for bridging gaps between environmental theorists, policy analysts, activists, and the public*" (Light and Katz, 1996, p5). In keeping with pragmatism, the investigation is focused on the nature of plural human experience, social institutions, participatory democracy, and the need for continuous reassessment of the moral and ethical principles of society (Parker, 1996) as they concern, in this case, the marine environment. In this section therefore I frame marine citizenship in a systemic context, as a social-ecological system, and justify the interdisciplinary approach taken. I discuss also the influence of the theory of post-normal science upon my research, which is a practical, pragmatic approach to 'wicked' problem-solving, founded on the basis of plurality and participation.

Marine citizenship can be understood as being situated in the human-ocean complex social-ecological system (SES). In a SES both sociological and ecological systems interact and impact upon one another, broadly incorporating policy, people, place, and the connections between them (Figure 3.1) – the framework for the organisation of this PhD thesis reflects these three key areas.

Research into social-ecological systems can be limited by the privileging of specific epistemologies according to discipline, and Miller *et al.* (2008) advocate epistemological pluralism to allow a more complete understanding of complex systems. For this reason, I adopted epistemological pluralism to investigate marine citizenship, and use interdisciplinarity and a mixed methods, deductive and inductive, approach to maximise the types of knowledge gained. I do not claim to identify a definitive or universal truth about the origins of marine citizenship. Rather, I examine factors already identified as influential on pro-environmental behaviours more generally, whilst simultaneously elucidating as yet un-investigated influences which emerge from the constructed realities of individual participants. In this way, I adopt an environmental pragmatic approach, acknowledging and embracing the diversity of knowledges and epistemologies concerned with the human-ocean interface, through open-ended enquiry (Light and Katz, 1996).
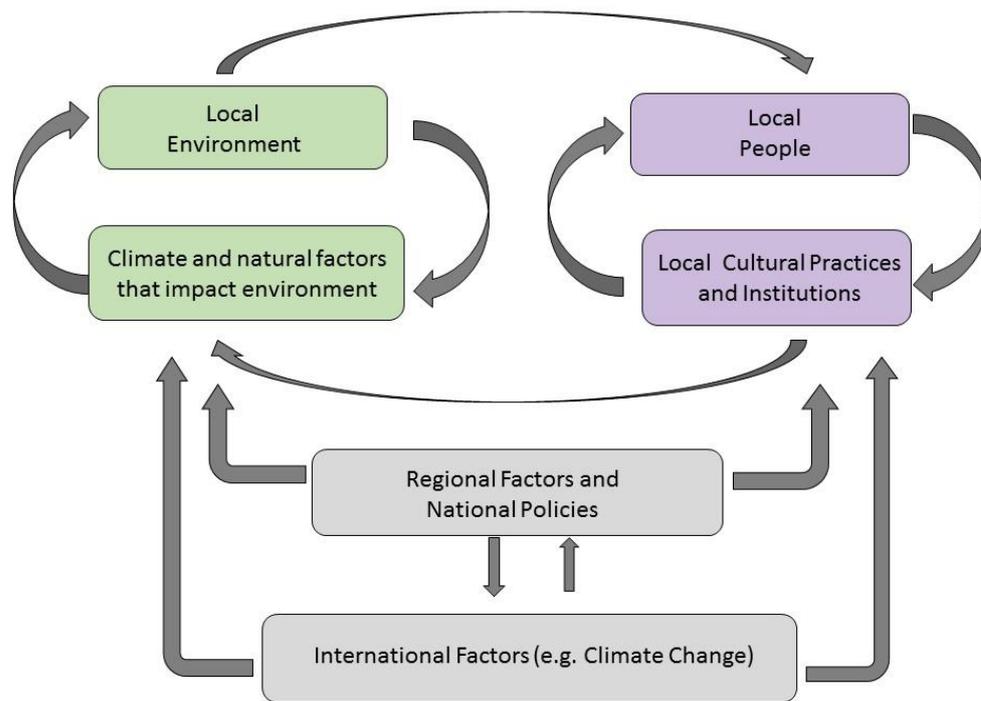
Figure 3.1 Diagrammatic representation of Complex Social-Ecological System. By Bronwen Powell (Penn State University, 2020).

Interdisciplinary research requires the acquisition and integration of different kinds of knowledge that span disciplines, which in some cases leads to conflict of what is valid knowledge, and difficulties in bringing knowledge of different types together. To address this challenge, I draw on pragmatism and the post-normal science framework to integrate fields such as environmental psychology, human geography, environmental law, green political theory and others.

As discussed in 2.3.1, studies of environmental citizenship have stemmed from environmental education origins, and as such have predominantly been approached through normative, positivist science, termed 'normal science' by Kuhn (1962). Environmental citizenship has therefore focused more on the ecological side of the SES triangle (Figure 3.1). Thus the individual experiences that influence people in their relationship with their environment and the wider social framings within which environmental citizenship is engaged would benefit from further interrogation.

Post-normal science serves as a framework for a broader understanding of the role of both scientific (positivist) and other forms of knowledge in addressing the way challenges at the science-society interface are framed and solutions developed. Post-normal science is proposed as appropriate for understanding

'wicked' problems which are high uncertainty, high risk, and high stakes (Funtowicz, S. O. and Ravetz, 1993; Funtowicz, S. and Ravetz, 2003; Giampietro *et al.*, 2006). This is characteristic of many environmental problems where dynamic (and in the case of climate, inherently chaotic) systems lead to uncertainty of current state and reduce the predictive power of models of future state (Jones, 2002). Human dependence on the ocean ecological system for food and climate regulation means deteriorating marine environmental health is high risk. Yet the systemic changes required to mitigate climate change and oceanic impacts are high stakes as they include large scale, costly changes to the economy and environmental management, and the costs of inaction are likewise high with the potential for catastrophe in many parts of the world.

Post-normal science extends the decision-making or evidence-gathering process through the use of a plurality of knowledges (Funtowicz, S. O. and Ravetz, 1993; Funtowicz, S. and Ravetz, 2003; Ravetz, J. R., 2011). It advocates an extended peer network which welcomes voices from a range of stakeholders and publics. It uses deliberative theory to bring together these different voices and perspectives to produce solutions better fitting to the problem through incorporation of contemporary values. Post-normal science is therefore embedded in the philosophical and methodological approach to this study. I broaden existing marine citizenship debates, centred on practitioner viewpoints, by engaging with marine citizens directly. I draw on multiple disciplines and ways of knowing, to extend what is understood about the concept and practice of marine citizenship. And, together with the participants, I deliberate on marine citizenship and draw fresh conclusions about its role as a policy channel for improving marine environmental health.

In the theory of epistemological pluralism (Miller *et al.*, 2008), a central component is an acknowledgement and reflection on researcher values (see 3.5.4 for my positionality), calling for an iterative process of reflection on which knowledges are most informative. Whilst Miller *et al.*'s theory applies more directly to group projects with multiple disciplines and my study is single-researcher scale, I employed iterative reflection on knowledge gained to identify effective ways to integrate the data produced. I chose mixed methods to capture data reflecting a range of theories and approaches from different disciplines, reading widely around each idea emergent or investigated.

In summary, in my research I aimed to produce a representation of the concept and practice of marine citizenship and how it comes to be, incorporating a wide range of knowledges, acquired from data collected by mixed methods, to maximise the insight the study can provide. By incorporating a substantial ethnographic element, I draw together the different strands and provide contextual meaning to the findings. This work contributes to the field by helping to situate these competing knowledges and provide greater understanding (Demeritt, 1994).

3.3. RESEARCH APPROACH

To answer my research question I took an interdisciplinary, mixed methods approach, integrating established understandings and methods from environmental law, green political theory, environmental psychology, human geography, and sociology, to build on the normative environmental science approach to marine citizenship. The engagement of people in the health of the marine environment is a complex, wicked problem and therefore, according to post-normal science, one well-suited to, and arguably requiring, an interdisciplinary enquiry.

To maximise the potential contribution of the data, I used a mixed-methods approach, integrating quantitative and qualitative data from marine citizens who were identified via three marine citizenship case studies.

In order to effectively engage with the mix of participants, multiphase mixed methods were employed (Creswell, 2014). I combined deductive and inductive enquiry, using online survey, open-ended interview, and participant observation. As discussed in the literature review, a range of values are proposed to underpin environmental citizenship and for some of these quantitative measures have already been devised and tested, particularly Schwartz Human Values, place attachment, and place and environmental identities. Together with demographic and behaviour data, these provided a quantitative overview of key influencing factors. However, the ways in which values and other variables interact to produce marine citizenship is complex and qualitative data was collected to tease out factors in individual marine citizenship experiences and motivations. Previous qualitative marine citizenship research has tended to focus on single case studies (Ram-Bidesi, 2015; Vasconcelos *et al.*, 2013) or

attitudes of marine professionals (McKinley and Fletcher, 2010; Rees *et al.*, 2013). More quantitative studies have tended not to provide additional qualitative context. This methodology therefore provided a greater scope of findings, enabling a better understanding of how different variables interact and their relative importance, and how these relationships change across types of citizenship participation.

The research was deductive and inductive. It incorporated design to examine factors known from previous research to be influential on pro-environmental behaviour and marine and environmental citizenship. The design additionally and purposely made space for new themes or factors to emerge. The design was informed by Cox's (2015) summary of methods for empirical environmental social science. Cox discusses the usefulness of a large range of methods from which choices could be made for methods most suitable for answering the research questions.

3.3.1. MIXED METHODS

I used a mixed methods approach to data collection and analysis in order to maximise the evidence contribution of the research. Johnson *et al.* (2007) describe mixed methods research as "*an approach to knowledge (theory and practice) that attempts to consider multiple viewpoints, perspectives, positions, and standpoints (always including the standpoints of qualitative and quantitative research)*" (p113) and argue that we are living in a post-normal, three paradigm methodological world – quantitative, qualitative, and mixed methods. This perspective aligns with my post-normal science approach to the problem of human impacts upon marine environmental health. I embed the post-normal science approach within the methodology by including different ways of knowing into the design. The mixed methods design enabled a sweeping investigation of marine citizenship from a breadth of perspectives and disciplines, with particular scope for deeper investigation of emergent variables and exploration of relationships between participant attributes and qualitative findings.

Within an online survey, I used a series of established or standard quantitative measures for demographics, basic human values (Schwartz, S., 2012), environmental attitudes (Dunlap *et al.*, 2000), environmental identity (Clayton, 2003), place attachment/dependency/ identity (Devine-Wright, 2013; Devine-

Wright *et al.*, 2015; Scannell and Gifford, 2010a). Some were adapted, such as place attachment, to be directed specifically at the ocean as a place, and I introduced some novel scales to measure intention towards marine citizenship and marine citizenship depth or thickness (See 3.4.2.2 below). The literature relating to environmental citizenship, sense of place, and human values provided the starting point for these key research themes (see Chapter Two). It was both practicable and reliable to draw on these recognised quantitative measures in this research. Metrics provide a broad overview of the sample population and allow for statistical tests of relationship with one another and other data.

I additionally collected qualitative data on these and other relevant factors through open survey questions, open-ended interviews and observation of participants doing a marine citizenship activity. The qualitative component of the study design adopted a multi-sited ethnographic approach which followed the concept of marine citizenship, as a small piece of the world system, rather than a small population, as is commonly the case in ethnography (Marcus, 1995). It can most closely be described as following the biography, by drawing conclusions from juxtaposed life histories, and following the concept across the public and private at multiple sites in order to "get at the 'white noise'" which surrounds marine citizenship (Marcus, 1995). The ethnographic position of the researcher was more of ethnographer activist than objective researcher, embedded in the sites and engaging with the participants alongside them in their marine citizenship activities. The shared position of being a fellow marine citizen enabled trust to develop between participant and researcher and an openness of dialogue in the interviews. This approach meant I was able to get close to interview/observation participants and they felt confidence in sharing their beliefs and views with me. Given the politicisation of environmentalism, it could be the case the participants might not feel able to share views as openly if I was not perceived as being sympathetic.

Neither qualitative nor quantitative data was privileged in the collection of analysis stages, what might be termed 'pure mixed' (Johnson *et al.* 2007). It was apparent that investigation of certain aspects of the research questions yielded more useful findings from either quantitative or qualitative data or a

mixture of both datasets. This was done in a responsive and sometimes iterative way, led by the analyses and findings as they emerged.

3.3.2. CASE STUDIES

In this research I used three UK case studies: one national citizen science project and two local/regional marine groups. Embedded case study analyses are common in the field of social ecological systems and are therefore a reliable method for this research (Cox, 2015). The UK is an interesting setting for marine citizenship research because it has an active environmentally engaged community, active marine recreation communities and marine industries, and is an island nation, therefore has a reasonably accessible coast. There is also a policy framework governing public participation in marine decision-making (see 2.4.1). The advantage of using a case study approach was three-fold.

1) I wished to include marine citizens who were participating at the coast and inland; collectively and independently; for scientific research and in local places; a range of demographics; and at a range of geographical locations, which was facilitated by this approach.

2) The case studies acted as sites, in the context of multi-sited ethnography, enabling me to observe marine citizenship in a range of settings and institutional structures. The two marine groups offered access to sited-marine citizenship at the scales of town and coastal region and with differing membership and structure. The national project provided access to marine citizens sited within a structured citizen science scheme, who might also be engaged in marine groups or marine citizenship at their locations around the UK.

3) The case study choices improved access to active marine citizens. The national citizen science project enabled access to many hundreds of registered active marine citizen scientists across the whole UK (Figure 3.2). Additionally, the embedded case study analysis allowed qualitative data to be taken at the scale of individuals and groups, and also enough quantitative data to perform correlational analyses. The contribution of each case is considered below.

Figure 3.2 Geographical distribution of online survey respondents.

3.3.2.1. Case Study 1: Citizen science project

Only a small proportion of citizen science projects are focused on marine and coastal environments (14% in a sample investigated by (Roy *et al.*, 2012), most likely for reasons of practicality as these are mostly on a local scale or focused on a single species. The Heritage Lottery funded Capturing Our Coasts

(CoCoast)[12], which began engaging volunteers in January 2016 and concluded in September 2018, was unusual as a national project aiming to document biodiversity around the whole of the UK's rocky shoreline. It was a partnership between a multitude of universities and environmental NGOs[13], working with marine science across the UK. Volunteers signed up to the project then were allocated to regional training and management centres. Once signed up there was an initial training session, which I attended in the Marine Biological Association in Plymouth, and distribution of equipment (quadrat grid, clipboard, and measuring tape). Volunteers then selected one or more species packs and performed as many transect surveys as they wished until the end of the project. As well as the citizen science, hubs provided social engagement such as science talks and networking opportunities. Some regions, such as in the south west, continued to engage with volunteers after the project finished, and sought additional funding to maintain a presence. This project provided a unique opportunity to investigate how marine citizen science integrates into the citizenship identity of participants. It also enabled access to people not living near the coast and in different parts of the UK, and those who might be performing marine citizenship activities independently from any organised group.

3.3.2.2. Case Studies 2 and 3: Grassroots community groups

Grassroots groups offer marine citizens the opportunity to work together on coordinated projects and also enable collective participation in policy and decision-making. Marine groups were included in this research to explore the added dimensions of how group-based citizenship is coordinated and the ways groups interact with policy and the public. The two groups included in the research attracted different demographics, worked at different scales, and

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[12] www.capturingoutcoast.co.uk
[13] https://www.capturingourcoast.co.uk/our-partners

engaged in formal marine policy in different ways. The inclusion of two groups was therefore both practicable and enabled a wider evidence base.

Coastwise North Devon[14] is a voluntary grassroots group in North Devon which since 2006 has delivered members' lectures and participated in local marine conservation action and consultation. It was initially set up to fill a perceived gap in marine understanding and engagement locally, and can be considered as developing local ocean literacy. It attracts largely (but not exclusively) older demographics. Alongside local activities such as beach cleans, or the programme of talks, it runs public engagement events and during the course of this research supported the public education Coastal Creatures Project[15] in partnership with the North Devon Area of Outstanding Natural Beauty. Coastwise is embedded in the marine policy network of North Devon. North Devon has a particularly large number of marine and coastal areas of environmental protection designated under UK, EU and international law. It is a pilot area for the UK Department for Environment Food and Rural Affairs Marine Pioneer Project[16] which investigates the natural capital approach to inform the UK Government's 25 Year Environment Plan. This local nexus of marine policy-making has afforded ample opportunity for this group to participate in formal marine policy activities. As a case study therefore it provided access to marine citizens engaged in a wide range of actions, including formal marine decision-making.

Newquay Marine Group (NMG)[17], established in 2013, developed out of a perceived need for coordination of marine activity in the town of Newquay and surrounds, in Cornwall, South West England. Having initially spent a year talking with stakeholders to establish local need, the group developed into a community organisation with full constitution and elected committee. It has

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[14] https://www.coastwisenorthdevon.org.uk/
[15] https://www.northdevon-aonb.org.uk/our-work/projects/coastal-creatures
[16] https://www.northdevonbiosphere.org.uk/marinepioneer.html, and
https://www.gov.uk/government/publications/marine-pioneer
[17] http://www.newquaymarinegroup.com/

forged a relationship with the local Further Education College, providing volunteering opportunities for students on relevant courses via the Beach Rangers programme, which engages the public in discussion about coastal impacts on the popular tourist beaches at Newquay. Though there is a wide range of ages of members, the presence of the students reduces the average age and creates a transience to membership. The Group has run various initiatives aimed at reducing marine impacts, such as championing plastic-bag-free, regular beach clean-ups, and challenging local takeaway food outlets to go polystyrene free. In addition it has developed a reputation with local organisations and statutory bodies as an organisation of expertise and action, and in 2017 secured a £40,000 local authority grant to regenerate a coastal area in the town. It is very focused on the town and local stakeholder and public engagement. Though it does sometimes put on education events, the main outputs of the group are direct action locally and the members are often quite independent in their choice of actions. This grassroots action and organic growth is quite different to the more formal and policy-engaged Coastwise.

Together the groups offer an opportunity to compare and contrast the ways group-coordinated marine citizenship is structured, how it is embedded in different local and national policy frameworks, and the types of citizenship participants engage in. The groups have broadly different demographics and face different local-scale environmental issues, whilst sharing common national policy. Together with the national citizen science project, this research had access to a wide range of marine citizens acting in different ways through different structures.

A selection of photographs taken during the ethnographic stage with the marine groups are presented in Figure 3.3 below. These illustrate the local marine and coastal environments where marine citizenship activities explored in this research were situated. They also illustrate some of the marine citizenship activities occurring.
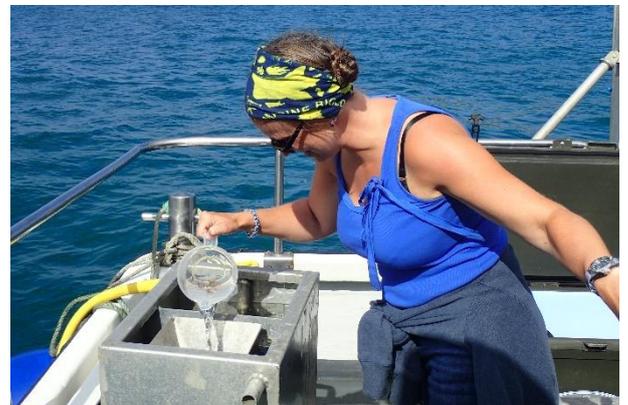
Figure 3.3 Images taken during ethnographic observation of marine citizenship actions. a) Surfers enjoying the waves at Seaton in North Devon where litter-picking was done. b) Public engagement in coastal life and the stranding at Westward Ho! c) The harbour at Newquay where the public can leave for boat trips. d) Myself releasing juvenile lobsters into the wild. e) One of the beaches in Newquay where litter-picking as done. f) Seal recording at Morte Point in North Devon.

3.3.3. SYNTHESIS

In order to make sense of the conceptual frameworks, data types and case studies, the findings are organised according to the three themes identified as key from the literature review and in line with the research questions:

Citizenship (and its policy context), People and Place. These three themes are broad and elastic. Considering the person and the physical and sociological places where citizenship happens, emergent factors were anticipated to fit within these broad themes. It must be acknowledged however, that these are not finite categories and there is a blurring between them. For example, identities meet at the intersection of place and people and policy. For this reason I signpost across the results and discussion chapters to highlight where there is overlap. This three-stranded framework therefore is simply a utility for providing structure to the findings and thesis. Table 3.1 illustrates the sources and types of data that were used to answer the empirical objectives of the research questions.

Table 3.1 Mapping of empirical objectives, case studies and data types, to illustrate how these will be organised.

Research theme	Quantitative data	Qualitative data
Marine and general citizenship	Questions about frequency and type of participation in marine and other citizenship activities	Ethnographic observation of participation in marine citizenship activities Interview questions about participation choices and experiences
Policy	Demographics Socio-economic data revealing indirect effects of policy, e.g. educational opportunity Attitudes towards marine environmental policy-making and perceptions around influence of governance levels	Survey and interview questions relating to participation in decision-making Barriers and opportunities afforded by policy, directly and indirectly Engagement with policy and institutions Knowledge of environmental participation legislation
People	Basic human values Environmental attitudes Environmental identity	Individual motivations and barriers In-depth ethnographic work revealing individualised aspects of participation Individual and collective participation compared – social role of groups
Place	Measures of place attachment, place dependency and place identity Proximity and visits to the sea Plurality of scale built into other survey questions	Interview questions that contextualise the relationship with place and explore identity at an individual level Open survey questions

3.4.   METHODS

3.4.1. DATA COLLECTION

Data collection methods used in this research were online survey with closed and open questions, open-ended interview, and participant observation. Interview sampling was purposive. Figure 3.4 summarises the order of data collection and process of iteration between stages, which used sequential triangulation, with each stage informing the next (Morse, 1991). Initial key-informant interviews informed design of an online survey; survey findings informed subsequent interview design and participant selection. In total there were 280 respondents to the online survey, of which ten participated further in interviews and shadowing. The open-ended interview sample size enabled in-depth consideration of individual feelings, views and experiences, and a smaller sample in qualitative research can be an effective means of uncovering thematic dimensions (Crouch and McKenzie, 2006). This was particularly important for the inductive aspects of this research and for gathering data that captured a diversity of individual journeys into marine citizenship.
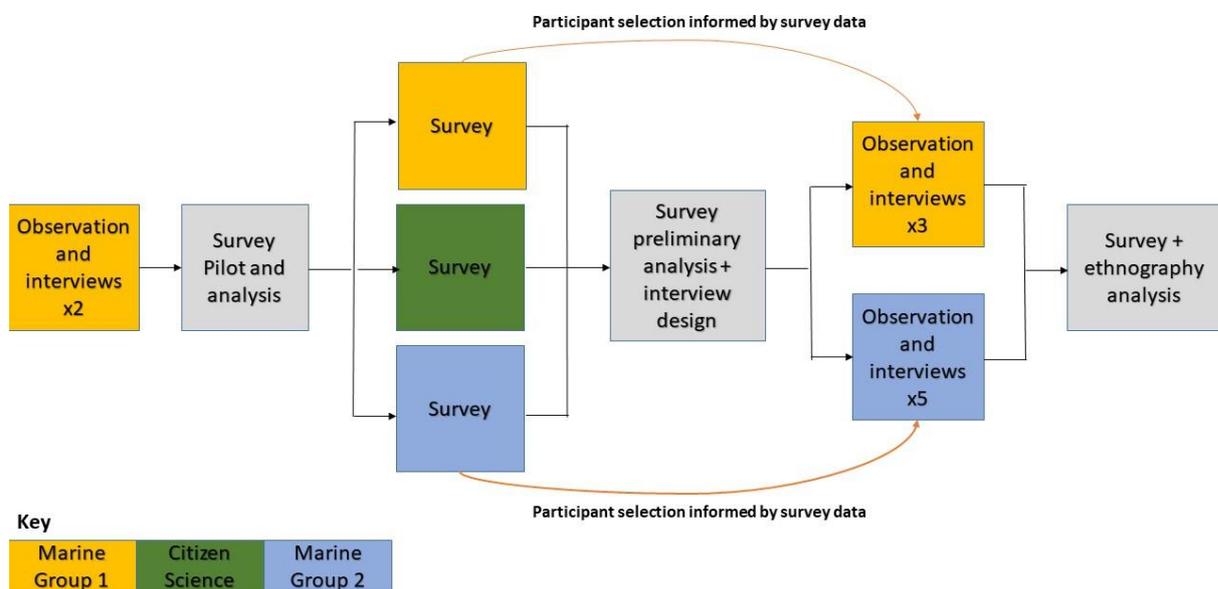
Figure 3.4 Diagram of methodological process, illustrating temporal order of data collection and connections between different data sources and how they informed design. The survey elicited 280 responses. Ten participants additionally completed interviews and observation. Following ethnographic work, the survey was further analysed in response to emergent themes in the interview data.

3.4.1.1. Initial interviews

Having first observed two interviewees leading a marine group meeting, I conducted with them two open-ended, key-informant interviews. These interviews and observations were used to support the question design in the subsequent survey, enabling the survey to be responsive to early emergent themes. (See Appendix 2 for consent form and participation information.)

3.4.1.2. Survey

I developed an online survey distributed using Bristol Online Survey (BOS) software which was first piloted with a small group of people from a range of backgrounds, both within and without marine environmental professions, to check for typing errors, question clarity and organisation, and emergent findings that might shape the final survey. Minor amendments were then made to question design before distribution to all members of the three case studies. The survey began with participant information and consent forms. See Appendix 1 for survey.

Separate links were used for each case study to allow for minor tailoring (naming the case study). The link was sent to case study gatekeepers for distribution, together with supporting text from the researcher. A paper based version of the survey was made available to any respondents without internet access, and three respondents returned a hard copy by post. This was manually entered on to the survey software exactly as returned, so that all data could be extracted together in a consistent format.

Sampling was single-stage, non-probability (Creswell, 2014). As the survey was predominantly quantitative, a high number of responses was both manageable and desirable for analytical rigour. The population of each case study was finite, therefore the entire group could be sampled. The survey was delivered to registered volunteers in all case studies, who then opted-in to participate. Approximately 120 Coastwise members received the survey on 9th October 2017, noting that meetings generally attract a core set of members of around 40-50 people, and 30 responses were received (~25%). Approximately 120 NMG members received the survey on 14th October 2017, noting that there is high turnover of members each academic year due to a large number of

students getting involved with the group, and 22 responses were received (~18%). Approximately 2800 CoCoast members received the survey on 7th November 2017, noting that not all of these trained members went on to participate in the CoCoast programme, and 228 responses were received (~8%). Response rates are provided as cautious estimates as in all cases mailing lists contained members no longer participating in the group or project. For each case a follow up email was sent to encourage participation.

I expected the response rate for Coastwise and NMG would be higher than CoCoast due to the more intimate researcher connection with the groups. To improve CoCoast volunteer response rate, the survey was preceded by communications marketing the survey as an additional way to participate in marine research. Since this research is investigating those who choose to participate, self-selection was potentially advantageous as those most engaged may be more amenable to respond to the survey and more willing to give up time to do so. Survey participants are referred to as respondents throughout.

3.4.1.3. Metrics and variables

I designed the data collection to enable examination of relationships across variables and how they influence marine citizenship intention and action as dependent variables. The survey provided a key data set of information which I will briefly describe.

Citizenship

Both general and marine citizenship were measured through multiple choice questions with a range of citizenship actions (see survey in Appendix 1 for the full citizenship list, and Table 3.5 in the next section for the marine citizenship list). These were not intended to be exhaustive lists but to give a broad indication of different types of citizenship activity. An additional seven point Likert scale question measured the intention to be an active marine citizen through how much the respondent considers their impact upon on the marine environment. This enabled analyses that inform understanding of the value-action gap (Blake, 1999). Marine policy knowledge and experiences of both citizenship and participation in marine decision-making were examined through open questions.

Demographics

Basic demographics of the 280 respondents were 60.4% female, 37.9% male, and 0.4% were transgender. Four respondents did not answer this question. Age ranged from 19 – 82 years. Data was also collected on educational level; income; relevant professional and educational experience; geographical location; and party political alignment.

Place relationships

The place identity measure used was adapted from Devine-Wright *et al.* (2015) to incorporate not only scale but also environmental and social identity. This reflected work by Scannell and Gifford (2010) which identified differences between natural and civic place identities. I also adapted the place attachment and dependency items to focus specifically on marine elements. For example, "*I depend upon this place for my livelihood*" was modified to "*I depend upon the sea for my livelihood*"; and "*I miss this place when I am not there*" modified to "*I miss the sea when I am not there*".

Schwartz Basic Human Values

This study utilised the Schwartz basic human values theory, as an empirically tested metric that has been shown to describe basic values across culture and nationality (Schwartz, S., 2012). The Portrait Values Questionnaire (PVQ) was adopted as this is the shortest version of the metric survey, can be used to understand both individuals and groups (Schwartz, S. H. *et al.*, 2001), and can be used effectively when the researcher is remote from the respondent. Methodological guidance was followed in the use of the PVQ (Schwartz, S. H. *et al.*, 2015). In the PVQ, respondents are provided with a set of 21 descriptions and the instruction "*Below some people are briefly described. Please read each description and say how much each person is or is not like you.*" The original PVQ descriptions were followed as written, but '*they*' replaced '*he/she*' in the descriptions to make them more gender neutral. Each item relates to one of ten values (Table 3.2) and a set of Likert responses ranged from 'Not at all like me' (score = 1) to 'Very much like me' (score = 6). A mean score for each value is calculated and used in subsequent analyses in either raw form or centred around an individual respondent's overall mean to give a set of relative scores.

Table 3.2 Schwartz Portrait Values Questionnaire items and relation to basic human values. Gender-adapted from Schwartz et al. (2015)

No.	Item	Value
1	Thinking up new ideas and being creative is important to them. They like to do things in their own original way.	Self-Direction
2	It is important to them to be rich. They want to have a lot of money and expensive things.	Power
3	They think it is important that every person in the world should be treated equally. They believe everyone should have equal opportunities in life.	Universalism
4	It is important to them to show their abilities. They want people to admire what they do.	Achievement
5	It is important to them to live in secure surroundings. They avoid anything that might endanger their safety.	Security
6	They like surprises and are always looking for new things to do. They think it is important to do lots of different things in life.	Stimulation
7	They believe that people should do what they're told. They think people should follow rules at all times, even when no-one is watching.	Conformity
8	It is important to them to listen to people who are different from them. Even when they disagree with them, they still want to understand them.	Universalism
9	It is important to them to be humble and modest. They try not to draw attention to themselves.	Tradition
10	Having a good time is important to them. They like to "spoil" themselves.	Hedonism
11	It is important to them to make their own decisions about what they do. They like to be free and not depend on others.	Self-Direction
12	It is very important to them to help the people around them. They want to care for their well-being.	Benevolence
13	Being very successful is important to them. They hope people will recognise their achievements.	Achievement
14	It is important to them that the government ensures their safety against all threats. They want the state to be strong so it can defend its citizens.	Security
15	They look for adventures and likes to take risks. They want to have an exciting life.	Stimulation
16	It is important to them always to behave properly. They want to avoid doing anything people would say is wrong.	Conformity
17	It is important to them to get respect from others. They want people to do what they say.	Power
18	It is important to them to be loyal to their friends. They want to devote themselves to people close to them.	Benevolence
19	They strongly believe that people should care for nature. Looking after the environment is important to them.	Universalism
20	Tradition is important to them. They try to follow the customs handed down by their religion or their family.	Tradition
21	They seek every chance they can to have fun. It is important to them to do things that give them pleasure.	Hedonism

Environmental identity and attitudes

Clayton's Environmental Identity (EID) Index was used as a straightforward means of investigating environmental identity. Given the inclusion of the full PVQ set of items amongst many other questions, I felt the full 24 EID Index was too long to be included in full. I condensed the items into key themes and included a single question from five of the themes in the survey (Table 3.3).

Table 3.3 Clayton's (2003) Environmental Identity Index items organised into key theme. Items in bold italics were included in the survey for this study.

EID Theme	EID index
Operationalised salience	***I spend a lot of time in natural settings (woods, hills, countryside, lakes, ocean). NB. Amended from (woods, mountains, desert, lakes, ocean) for UK context.*** I like to garden. I really enjoy camping and hiking outdoors. I would feel that an important part of my life was missing if I was not able to get out and enjoy nature from time to time. I take pride in the fact that I could survive outdoors on my own for a few days. I keep mementos from the outdoors in my room, like shells or rocks or feathers
Self-identification	Engaging in environmental behaviours is important to me. I think of myself as a part of nature, not separate from it. I feel that I have a lot in common with other species. ***Being a part of the ecosystem is an important part of who I am.*** In general, being part of the natural world is an important part of my self-image. Sometimes I feel like parts of nature – certain trees, or storms, or mountains – have a personality of their own.
Group-identification	***I have a lot in common with environmentalists as a group.*** My own interests usually seem to coincide with the position advocated by environmentalists.
Ideology	If I had enough time or money, I would certainly devote some of it to working for environmental causes. I believe that some of today's social problems could be cured by returning to a more rural lifestyle in which people live in harmony with the land. ***Behaving responsibly toward the earth – living a sustainable lifestyle – is part of my moral code.*** Learning about the natural world should be an important part of every child's upbringing.
Positive affect	When I am upset or stressed, I can feel better by spending some time outdoors "communing with nature". Living near wildlife is important to me; I would not want to live in a city all the time. I would rather live in a small room or house with a nice view than a bigger room or house with a view of other buildings. I have never seen a work of art that is as beautiful as a work of nature, like a sunset or a mountain range. ***I feel that I receive spiritual sustenance from experiences with nature.***
Autobiography	I feel that I have roots to a particular geographical location that had a significant impact on my development.

The items were chosen to give a broad sense of that theme, addressing core environmental values. It should be acknowledged therefore that reduced items per theme reduces the power of the index to fully represent each theme. Autobiography as a theme was excluded in light of the investigation of the sea as a type of place rather than specific coastal locations. Additionally, place attachment questions covered local roots.

A further nine questions were included to investigate environmental attitudes (informed by Devine-Wright *et al.* (2015) and Dunlap *et al.* (2000). These could be grouped as *'humans abuse'* [the environment] (four items); *'non-materialism'* (three items); and *'climate change concern'* (two items). Means of these three themes plus the mean of the Environmental Identity Index questions were all computed.

3.4.1.4. Participant observation and interviews

Within the survey, respondents could volunteer for further participation in interview, to enable a more penetrating investigation of the factors investigated and emergent in the survey. Of these, a sub-sample was purposefully selected to include key informant marine group leaders, and a diverse representation of key factors emergent in the online survey. This was done manually by tabulating key data from each participant volunteering for interview and identifying a sample which reflected a range of ages and genders, incomes and education/profession; high/low place attachment, environmental identity, citizenship and marine citizenship scores; a range of basic human value scores, particularly low *universalism* or high *power* values which were atypical in the group (see discussion in 2.4.2.1); and variation in proximity to the sea and frequency of visit. Ideas or experiences expressed in the qualitative survey answers were also considered for anything striking or unusual, particularly around policy, a knowledge of which was consistently minimal in the participants' responses. Not all those respondents selected were able to participate in the interviews. The process resulted in a total of ten interviews (including the initial key-informant interviews) and Appendix 3 gives a summary of the key factors associated with interviewed participants. Interview participants are referred to as interviewees throughout.

Each of the ten participants interviewed was also shadowed as they participated in a marine citizenship activity chosen by themselves as being meaningful to them or typical of their marine citizenship. These activities were beach cleans, marine group meetings, lobster hatchling release, commercial boat nature trip, citizen science recording, and a public engagement event. The shadowing typically lasted 1-3 hours. As well as investigating individual citizenship factors, the combined body of data for the marine groups was incorporated into an ethnographic approach, adding context through observation of a shared group-culture for each case (Creswell, 2014). Field-notes of the activities were kept, in terms of public engagement, citizen activities and engagement, and perspectives of the participant. In some cases photographs were taken to preserve perceptions of the experiences.

Interviews were conducted subsequent to the shadowing on the same day. They were open-ended to fully allow for new variables to emerge; and guided by a flexible protocol covering general marine citizenship practice; motivating and influencing factors; relationship with the sea; place, identities and values; and role and activities within the case study group. Interviews were also the primary tool for developing an understanding of group history, structure and procedure from a policy and social perspective. The two key-informant interviews and shadowing took place in July 2017 prior to survey distribution; subsequent interviews and shadowing took place between July 2018 and December 2018. Interviews ranged from 1-2 hours in length and were audio-recorded with permission from participants. The recordings were transcribed for coding and analysis.

3.4.2. ANALYSIS

I downloaded survey responses from Bristol Online Survey Software into Microsoft Excel and IBM SPSS 25. I used both programmes for manipulation of the data and transformation of, for example, raw responses into metric scores. I used SPSS for statistical analyses, and Excel for certain charts, e.g. radar plots which could not be done on SPSS. I imported both raw data (e.g. demographics responses) and transformed data (e.g. metric scores) into NVivo 12 and assigned case attributes to respondents to enable mixed methods analysis with

the interview transcripts, and coding of the qualitative survey responses. Raw transcripts were imported into NVivo for coding and subsequent analyses.

3.4.2.1. Qualitative analysis

I performed initial coding of transcripts by hand on hard copy. I used common coding and thematic analysis procedures, as described by Creswell (2014) and Saldaña (2016). The first round of coding was for pre-determined codes according to the examined themes of place, values, identity, and scale. At the same time, any emergent codes were noted. These included references to senses and emotions, which were prevalent, and references to policy themes such as education and NGOs. Once all transcripts had received this treatment, codes were visually arranged in hard copy to determine relationships and themes. Some codes were merged. Codes were then transferred to NVivo as nodes and transcript coding was transferred to the electronic transcripts. This served as a second round of coding, checking consistency between codes and refining the coding structure. A code book is provided in Appendix 5.

3.4.2.2. Quantitative analysis

Quantitative data was obtained through the survey. This was descriptively analysed across the whole population using SPSS. Descriptive statistics were used to understand basic demographics of the group, providing overall averages and range of responses within the sample population which informed interview participant selection. This also allowed comparison with national statistics to understand in what ways this sample is at variance with the national population. Descriptive statistics were also used to understand basic data such as frequency of sea visits, and Likert scale questions. Table 3.4 summarises the quantitative measures used in this research. I provide additional information about the more complex transformations and analyses of the data below.

Table 3.4 Summary of quantitative measures used in this research and the thesis chapters they are predominantly deployed in.

Chapter	Metrics		Data type
All	Demographics	Gender	Categorical
		Age in years	Ratio
		Highest educational attainment	Categorical
		Gross household income	Categorical
		Political alignment	Categorical
	General citizenship	Number of actions participated in (max 10)	Ratio
	Marine citizenship	Number of actions participated in (max 10)	Ratio
		Marine citizen score (depth of marine citizenship)	Ratio
	Marine citizenship intention	Seven-point Likert scale	Ordinal
Four	Educational experience	Graduate or postgraduate in marine or environmental field	Qualitative transformed to categorical
	Professional experience	Professional work in marine or environmental field	Qualitative transformed to categorical
	Scales of decision-makers	Five-point Likert scale	Ordinal
	Participation in marine decision-making	Yes/No	Nominal
		Open question on type of participation	Qualitative transformed to categorical
		Open question on outcome of participation	Qualitative transformed to categorical
Five	Environmental attitudes:		
	Humans abuse	Mean of four item five-point Likert scale	Ratio
	Non-materialism	Mean of three item five-point Likert scale	Ratio
	Climate change concern	Mean of two item five-point Likert scale	Ratio
	Environmental Identity	Mean of five item five-point Likert scale	Ratio
	Basic Human Values	Twenty one items for ten values**	Ratio
Six	Residence time	Years at current residence	Ratio
	Geographical location	First half of postcode (shortest time to travel to sea; number of postal districts away from the coast)	Ratio
	Frequency of visits to the sea	Multiple choice	Categorical
	Scale of place identity	Five point Likert scale	Ordinal
	Global:local relative place identity		Ratio
	Place attachment	Mean of nine* items on five point Likert scale	Ratio
	Marine dependency	Five point Likert scale	Ordinal

Notes: *Number of items reduced for refined marine place attachment score as described in Chapter Six. **Analysed according to the (Schwartz, S. H. *et al.*, 2015) protocol.

Citizenship (Chapters Four – Six)

General citizenship was measured by summing the number of actions selected to create a score e.g. six actions participated in. This was used to give an understanding of the spread of citizenship activity across the group, and individual scores were used as a variable in statistical analyses.

A sum score for each respondent was also calculated for marine citizenship. As marine citizenship is the primary subject of this research, I wanted to additionally account for the depth of marine citizenship actions. For example, there is a qualitative difference between litter picking and running a political lobbying campaign. To develop a better sense of the depth of commitment to marine citizenship activities I grouped the options into five categories reflecting depth of commitment and lifestyle modification. Each category was given a score from 1-5, with five being thick, or deep, marine citizenship action. This was verified by checking against the percentage of the sample who had selected this activity, on the assumption that more people will do the easier activities (Table 3.5).

Table 3.5 Marine citizenship scoring metric. Marine citizenship activities are categorised according to level of commitment and modification of life and give a score which increases with 'thickness' of the citizenship activity.

Score	Category	Marine citizenship activity	Percentage of sample participating
1	No action	Don't drop litter	97.5
2	Active choice, fairly incidental	Consumer choices	91.1
		Pick up beach litter	83.6
		Taking paths to avoid erosion	77.9
3	Active commitment of time/money	Supporting marine conservation	72.9
		Participating in marine citizen science	68.6
		Lifestyle choices (indirect) e.g. energy saving	64.6
4	Active commitment of time/money with modification specifically for marine environmental health	Lifestyle choices (direct)	47.9
		Recreational choices	43.6
5	Proactively making change	Organising activities	23.6

Participants were then scored for the responses they gave and a mean was calculated for each category, meaning respondents were not penalised for actions which they could not take part in, such as specific recreations they may not engage in. The mean of each level was then summed. Where a participant took part in each depth of activity, the hypothetical maximum marine citizenship summed score (MarCitScore) was 15.

Professional and educational experience (Chapter Four)

The qualitative question on professional experience was transformed to categorical data. Participants were categorised by professional experience past or current, and by general environmental or specifically marine sector. These four categories were then used in further analyses.

Basic Human Values (Chapter Five)

The Schwartz Basic Human Values metric responses were transformed into value scores according to the standard protocol (Schwartz *et al.*, 2015). This requires calculation of a mean for each of the ten values (two question responses for all values except for universalism which has three) to create the raw value scores. A transformation is then used to centre each value score around the mean for that participant's score, producing centred value scores for which each value is then relational to the others within an individual participant. The centred score was used for all analyses unless otherwise specified.

Multi-item Likert responses (Chapters Five and Six)

For both place and environmental identity questions, Likert responses were collated for each respondent and a mean calculated in which high scores indicated a high place attachment/environmental identity/environmental concern. Kurtosis and skew were used for scale of place identity. Means were grouped to produce a frequency distribution bar chart.

Geographical location (Chapter Six)

Respondents to the survey provided the first half of their postcode. This was used to calculate proximity to the sea in two ways. 1) Number of postal districts between the postcode and the sea and 2) shortest time (minutes) to travel to the sea from the centre of that postcode area, as determined by the use of

Google Maps car travel (or foot where this is very close to the sea and car travel isn't feasible). Whilst a full postcode would provide a more accurate measurement, it was felt this would provide enough information whilst preserving more privacy for respondents who might feel concerned about disclosing their location.

3.4.2.3. Mixed methods analysis

This research involved analyses that crossed between qualitative and quantitative data. The qualitative survey responses informed interview design and individual interview participants' scores were used to inform discussion on key themes and gather data explaining the scores. Quantitative measures were used as respondent attributes when exploring patterns within the qualitative data. Findings from the qualitative stage of research were used to inform statistical analyses across the whole survey sample population. Relationships and themes identified in the qualitative data guided quantitative analysis between factors.

Standard and appropriate statistical tests were used to investigate the strength of relationships within and between the data sets and the online Laerd Statistics[18] resource was utilised throughout to assist with analysis and ensure all assumptions were checked for each test (Table 3.6). Principally these were Chi-square for frequency analysis according to class; Pearson's or Spearman's correlation for associative relationships; and ANOVA or Mann-Whitney U for tests of difference (Creswell, 2014). Where statistical tests have been used these are indicated in the empirical Chapters Four-Six.

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[18] https://statistics.laerd.com/

Table 3.6 Application of statistical tests used in this research according to research question and data type. Choice and application was informed by Creswell (2014) and the Laerd Statistics online resource.

Research question	Data type	Test(s)
Differences between samples	Interval / ratio (parametric)	ANOVA
Differences between samples	Ordinal (non-parametric)	Mann-Whitney
Associations between samples or variables	Nominal / ordinal (non-parametric)	Chi-Square
Relationships between variables	Ordinal / parametric assumptions not met (non-parametric)	Spearman's correlation
Explanation of relationship using one predictor	Interval / ratio (dependent variable) (parametric)	Linear regression
Explanation of relationship using more than one predictor	Interval / ratio (dependent variable) (parametric)	Multiple linear regression

I note here that there is mathematical debate about the use of Likert scales as interval data and thus their applicability for parametric tests. In these analyses, where other test conditions are met, Likert data has been treated as interval. Most Likert questions were combined into multi-item measures according to standardised approaches as described above, creating a more robust interval scale. The Likert question on intention towards marine citizenship – how much the respondent considers their impacts on the marine environment – had a greater seven point range allowing for more range in responses and therefore was also treated as interval data. Additionally for all findings reported, the reader should recall the largest sample size for tests is N=280 which reduces the power of all tests. With this research I do not statistically test pre-established hypotheses, but explore a wide range of variables and their possible influences upon marine citizenship, using quantitative and qualitative findings to guide further analyses in the project. As a result, this research project is exploratory and analyses are not intended to be confirmatory of research hypotheses. The reported findings however, act as signposts for areas of interest in further qualitative, quantitative or mixed methods research designed to test specific hypotheses.

3.5. RESEARCH QUALITY

3.5.1. ETHICS

The research upholds the pillars of ethical research: Autonomy; Beneficence; Non-maleficence; Confidentiality; Integrity. The research was approved by the

University of Exeter ethics board and the form for approval is located in Appendix 7. A number of texts were consulted in making ethical consideration of this research (Creswell, 2014; Denscombe, 2002; Iphofen, 2015; Johnson, B., 2014).

Autonomy: Informed consent was obtained for both the survey and interviews/shadowing indicating the purpose of the research, nature of participation, use of data, right to withdraw (including limitations of doing so once the data has been anonymised or incorporated into the work), and publication.

Beneficence: The research is worthwhile and important. It contributes understanding to a pressing environmental problem which causes harm to humans and non-human life. The findings of the research support efforts to address marine environmental problems.

Non-maleficence: No apparent harm came from involvement in this research. Only adult participants were included in this research. Participation was entirely voluntary in both survey and interviews/shadowing. Researcher notes and recordings during interviews and shadowing were only related to participants, not any other members of the public who conversed with participants or who were present during the observed activity when it was in public.

Confidentiality: Data were anonymised and care taken to redact quotations of locations or specifics which might indicate who respondents were to people known to them. Names and contact details were only requested for participants who volunteered to further participate in interviews. These personal data were removed immediately from the raw dataset for analysis. Survey responses were therefore only connected with names where those participants continued on to the second stage. Anonymity was maintained in all cases of survey response and interview, the only exceptions were where participants chose to self-disclose participation to other members of their group.

Integrity: The research was conducted with honesty and integrity. Data collected were only that which were deemed relevant to the purposes of the investigation. Sensitive demographic questions, for example about sexuality, were not deemed necessary and therefore were not included in the survey. Wherever

possible questions were optional so participants could choose not to answer if they felt it was sensitive. The only exceptions were the scales which required a full complement of responses to sub-questions in order to be useable.

Conflict of Interest: There were two possible areas of conflict of interest. The first was my former role as trustee of Sea-Changers, a marine conservation charitable trust which has previously funded Newquay Marine Group. This research project and Sea-Changers share a common aim of facilitating improved marine environmental health through participatory action of others and it was via Sea-Changers that I first heard about NMG. However, there was no relationship between NMG and Sea-Changers at the time of fieldwork and Sea-Changers were not involved in this research. I abstained on subsequent grant applications made by NMG to Sea-Changers. Visits to the group prior to release of the survey enabled an open introduction to my research and my role in Sea-Changers.

The second issue arose somewhat unexpectedly when I was selected as a Plymouth City Council candidate and subsequently elected in May 2018. This was during the period of fieldwork. The role of Plymouth City Councillor is unrelated to any of the case studies in that they were not situated in Plymouth, however as a political representative there was the possibility that this might influence the interviews. For this reason I did not disclose this role prior to interviews but disclosed afterwards so participants were aware of it. There was one exception to this, where one participant had looked me up online and my elected role was referred to during the interview without concern. There was no indication of concern from any participant, and it was not considered relevant to the research at hand.

In accordance with university guidelines all personal data was destroyed after completion of its use for interview stage respondent correspondence. Electronic and paper primary data will be securely stored for five years after completion and publication of the research, after which it will be destroyed. Audio data was transcribed and the audio subsequently deleted. Stored data was anonymised. Data was handled and stored in accordance with the *Data Protection Act 2018*.

3.5.2. SCOPE AND LIMITATIONS

This study is concerned with active marine citizens and therefore generalisability in the findings is limited in the wider population. One aim of the study was to retrospectively identify factors which contributed to a participant's becoming an active marine citizen – a person is not born a marine citizen. Such factors are not intended to be understood as a rule to be followed to 'create' marine citizens, but as part of a suite of factors and conditions which might enable people to adopt marine citizenship. The marine citizenship score devised in this study as a quantitative measure of marine citizenship depth is novel and therefore would benefit from replication and future modification to make more generalizable.

The interview and ethnographic data for this research project were collected from participants recruited via the two community group case studies. The more disparate nature of the national citizen science case study made it difficult to recruit interview participants within the time frame of the project, a factor exacerbated by the completion of the national citizen science project. This meant it was not possible to recruit interviewees who currently live inland or who exclusively participate in citizen science. However, participants interviewed included those who had formerly lived inland for varying lengths of time and who participate in citizen science, therefore some light is still shed on the nature of marine citizenship in people living away from the coast and the particular characteristics that are attracted to citizen science.

This research is based on data obtained from a limited number of case studies and so the applicability of the findings may be limited to those populations. However, the project seeks to integrate data from across a spectrum of public engagement and citizenship activities and demographics, going beyond the initial gateway projects in order to draw more generalizable conclusions. The case studies themselves reflect the UK marine management, policy and cultural background, but some participants provided a more global perspective in their marine citizenship, a scale effect which was actively investigated within the research. Internationally recognised theoretical frameworks, such as the Schwartz basic human values theory and place identity scales, have been used

in order to provide confidence in the validity and applicability of the findings at a more international scope.

3.5.3. RESEARCH RELIABILITY, VALIDITY, AND GENERALISABILITY

As discussed above, this research draws on mixed methods and theory from a range of disciplines. Though this demonstrates an innovative approach to the investigation of marine citizenship, providing opportunity for novel emergent themes, there is a need to maximise quality and rigour in the methods applied.

I addressed reliability by ensuring each case study received the same survey questions and for each interview I had a standard template of themes that I would address in all interviews as a minimum. Interviews were recorded on audio equipment and transcribed verbatim to ensure an accurate and complete transcript was produced for analysis. Interview participants were given the option of receiving the complete transcript for checking though only one participant requested their transcript. Coding was done both by hand and using coding software in sequence providing opportunity to reflect on, review and refine coding structures. The use of software for the final analyses meant that all codes could be used reliably through automated interrogation and potential human error, for example missing a coded datum, was reduced.

With a view to ensuring validity, replicability, and generalisability, I employed standardised quantitative procedures for factors which have previously been investigated in related research. This includes the Schwartz basic human values theory which has been widely, internationally, investigated and replicated (Bilsky *et al.*, 2011; Schwartz, S., 2012), and scales relating to scale and nature of place identity, place belonging, and place attachment (see review by Lewicka, 2011). Typical measures of demographics were also employed and use was made of Likert scales. Use of standardised measures was particularly useful for generalisability, since my sample population were not representative. To support the validity of my qualitative analysis, I developed coding through the themes described in the wording of quantitative measures. For example, there are 24 items in the full Environmental Identity Index and though I did not use all the items in the quantitative survey I was able to use the wording of all the items to identify expressions of environmental identity within the qualitative data.

The integrated use of quantitative and qualitative methods allowed for a triangulation across themes through interrogation of how different aspects emerged in the different data sets. Where there were inferences in the qualitative data about relationships between factors, I was often able to run statistical examinations of those factors in the quantitative data, and vice versa. Additionally I was able to add richness and depth to quantitative findings by interrogating the qualitative data. In this way the mixed methods approach enabled more confidence in the findings than would have been possible had a different methodological paradigm been adopted.

3.5.4. REFLEXIVITY AND POSITIONALITY

Reflexivity can be defined as: "*The regular exercise of the mental ability, shared by all normal people, to consider themselves in relation to their (social) contexts and vice versa.*" (Archer, 2009, pg i). In the case of research, this includes the contexts of the research and position of the researcher.

Given the subjective component of my research, it is pertinent to report, as a researcher, on my own position and values on this subject. My academic experience originates in a positivist discipline – marine science – which has rendered me with a positive attitude towards conservation of the marine environment both for its intrinsic worth and through belief that humans are dependent upon and are an integral part of the Earth's ecosystem. As such I believe we have a moral duty towards our future selves to leave an inhabitable planet, and towards other living things to not drive them to extinction through our economic and social impacts. It is from this perspective that my interest in this topic arose and it is with an aim of increasing marine citizenship that I seek to understand it.

In contrast to the rigid natural science of my early academic years, I have held a career in science communication which seeks to bridge science with the public. That has tempered the rigidity of values I was instilled with, to recognise more the social context of environmental conservation and develop a plural epistemological approach towards environmental questions. My practical professional experience in science communication highlighted to me a propensity of science as an institution to adopt a technocratic and knowledge-deficit approach towards the public. Additionally, I have strong political beliefs

that support democracy and an increase in public civic participation as both a right and a means of producing a better society. I view this as being at the heart of citizenship. The framing of post-normal science lends itself well to my view of environmental problem-solving. These, in some ways conflicting, values and experiences afford me scope to engage with a range of beliefs and perspectives in the ethnographic methodological process.

Significantly, I also consider myself to be a marine citizen. Well-educated, female, middle-class, I certainly fit the bill of the 'typical' environmentalist, and I have been mindful of this position through the study. I am critically aware that I cannot claim a binary between activist and researcher in this study (Maxey, 1999). Whilst my research is of marine activism, my research becomes my own marine activism. As an activist ethnographer I brought legitimacy to the meaning and goals of my research, participants were able to trust me as 'one of them' (as related in Maxey's (1999) research) and share values and feelings that might not have come as easily were the researcher suspected as not sharing their views for environmental wellbeing. I have continued to engage with the two marine groups, presenting findings from this research and keeping in touch as fellow marine citizens. My interpretations are informed both by the observations of marine citizenship in practice, and the experience of interviews shared with fellow marine citizens.

My positionality also meant that my efforts to find marine citizens who were different might be more difficult; that I might not recognise less familiar values and routes into marine citizenship, or that those who felt they were outside 'typical' environmental activism might, conversely, feel less able to trust me as a researcher. Mixed methods helped address some of these challenges. For example, the use of standardised quantitative methods helped me understand the wider population of marine citizens and identify those with a range of investigated characteristics, rather than more subjective means of selecting the interview sample. But I would reiterate here that the study is approached from a position of acknowledged uncertainty via the post-normal science framework. I hope that my findings will contribute to a textured understanding of marine citizenship as a potential solution to the problem of unsustainable use of the marine environment.

3.6.   SUMMARY

In this chapter I have described how in this study I take an interdisciplinary, holistic approach to investigating marine citizenship in order to understand its role in promoting good marine environmental health. I describe how the research design is both inductive and deductive, drawing on what is known to connect marine or environmental citizenship, or the specifically pro-environmental behaviours, across a range of disciplines. I outline my approach to data collection, where I have modified standard metrics and how I have devised my own novel metric to measure the depth, or thickness, of marine citizenship.

Having outlined the methodological approach, I then discuss the quality of this study in terms of ethical consideration, the scope and limitations, and what considerations I have taken to ensure validity and reliability. I reflect upon my own positionality as a researcher and the impacts this has had upon the research in practice.

In the next three chapters I move on to present the findings and discussion that respond to each of the three research questions in turn. And in the final chapter I synthesise the findings and discuss how they respond to the overarching research question.

4. CHAPTER FOUR: CITIZENSHIP

Table of contents

4.1. INTRODUCTION

This research approaches marine citizenship from an holistic perspective and was designed to collect data pertaining to what marine citizenship looks like in practice, including: how marine citizenship is situated in a societal and policy context (this chapter); the internal, personal characteristics and demographics of marine citizens (Chapter Five: People); and, viewing the ocean as a place, the place-based influences upon marine citizenship (Chapter Six: Place).

This chapter answers the following research questions, a) *What is marine citizenship and who participates in it?* And b) *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants*? The two questions are interlinked because understanding how marine citizenship might be a policy channel for promoting good marine environmental health requires first an understanding of what marine citizenship is and who currently has access to participate in it. Both questions are therefore responded to in this chapter.

To respond to these questions, I present findings that examine who marine citizens are in socio-demographic terms; what actions, in their view, their marine citizenship constitutes; what marine citizens see as the value of marine citizenship; and how environmental policy at present responds to the right to be a marine citizen. In this chapter, the institutional and policy framework is understood to be a broad construct which incorporates not only the direct influence of legislation relating to public participation in marine environmental decision-making, but also softer policy influences which surround and may indirectly impact upon either the nature of marine citizenship, or the ability of members of the public to participate in it.

This results chapter begins with describing the demographics of marine citizens. I then move on to examine the nature of marine citizenship in practice, comparing and contrasting it with the prevailing understanding of marine citizenship as a set of pro-environmental behaviours motivated by information and environmental education, and I consider the barriers and enablers of those actions. I next consider why marine citizens do marine citizenship, what value they feel it has in the wider picture of marine policy and good marine environmental health. Finally, in order to add a 'rights' element to the 'rights and

responsibilities' framing of marine citizenship in the literature, I examine the right to participate in marine environmental decision-making, reflecting views of citizenship as a right to construct and transform the world we live in (Schild, 2016). This section includes data on acts of citizenship which are directed at informing policy formation and implementation.

To date, as discussed in 2.3.2, the literature relating to marine citizenship has tended to focus on public understanding and perceptions of marine environmental impacts and pro-environmental behaviours; and understanding of the marine environment via ocean literacy. Prior research has been particularly influenced by environmental education, and the perspective of marine scientists and practitioners. In contrast, this research situates marine citizenship as a form of citizenship, more in line with green political theory (see e.g. Dobson, 2003; Schild, 2016), and shifts the focus onto marine citizens themselves. In Chapter Five I consider a wide array of important values and identities, which add understanding to who might become an active marine citizen and how, and allows application of existing theories relating more generally to the role of individuals in the functioning of society.

Data discussed here and in subsequent chapters was drawn from 280 online survey respondents, of which ten participated further through observation of marine citizenship in practice and in-depth interview. All participants were active marine citizens identified either through a community marine group or a national citizen science project. Appendix 4 outlines the key characteristics of the ten interviewees according to the key themes of this research. Quantitative and qualitative data is integrated in this section and findings presented include both general conclusions across the researched population, and individual experiences which both adds context to generalised findings and provides insight into the diversity of experiences. (See Appendix 5 for the coding system used in this research.) Where quotations originate from interview data, the interviewees are given a pseudonym to help identify their contributions to this research and reflect the personal and deeper nature of the interviews (Table 4.1). Quotations originating from the survey data are not given pseudonyms as there were 280 respondents and the data related to the more rigid survey questions, therefore all unmarked quotations are from survey respondents.

Table 4.1 Interviewee basic data and pseudonyms used in this thesis.

Marine Group	Pseudonym	Age	Gender	Marine Group	Pseudonym	Age	Gender
1	Sarah	26	Female	2	David	24	Male
1	Jemma	41	Female	2	Simone	37	Female
1	John	69	Male	2	Clare	41	Female
1	Marie	72	Female	2	Elizabeth	51	Female
1	Terry	79	Male	2	Sonia	61	Female

Findings are typically structured to give first an overview of the survey results, followed by contextualisation of the findings from the interview data. However, as the research is inductive there are some findings which emerge only in one dataset or the other. In both cases, findings are analysed across themes and datasets to understand interconnections between them. To enable connections to be made between pro-environmental behaviours and marine citizenship as an identity, this chapter also includes a more instrumental overview of marine citizenship actions, which is used, here and in subsequent chapters, as an outcome measure (marine citizenship score – see 3.4.2.2) against which to test other variables.

4.2. RESULTS

4.2.1. BASIC DEMOGRAPHICS

This section reports on the demographics of the participants (N=280), providing a basic description of who the marine citizen respondents were, with which to compare with other research, the general population, and for analyses in this investigation.

4.2.1.1. Gender

In total, from all three case studies, 280 marine citizens responded to the online survey. Of these, 276 provided their gender giving a breakdown of 61.2% women, 38.4% men, and 0.4% transgender. Examination of mean marine citizenship score (i.e. depth of marine citizenship, see 4.2.2.1 below and 3.4.2.2 for more details) showed differences in each gender group with women engaging in deeper marine citizenship (Female 7.876; Male 7.434; Transgender 7.000), but these were not found to be significant (ANOVA: $F=0.533$ (2,275), $p=.588$), and nor were the distribution of scores (Mann-Whitney U: U=8455.00, z=-0.783, Asymp. Sig.-.483). Despite this, the higher proportion of women

respondents (and their marine citizenship scores) is in keeping with other work examining gender and pro-environmental behaviour or environmental attitudes (Desrochers *et al.*, 2019; Gifford and Nilsson, 2014). However there would be a compounding effect if women were more likely to respond to this survey, which has been shown in other research (Smith, 2008).

4.2.1.2.   Age

The age of respondents ranged from 19-82 years with a mean of 53. Using Office of National Statistics data for population per age bracket in 2017, and the age bracket participation rate for informal and formal volunteering in the past 12 months (from 2015 Community Life Survey), it was possible to compare the proportion of 25+ year olds in this survey with expected proportions (Table 4.2). Across the full survey population, there is a much higher than expected proportion of over-55s, and an under-representation of under-55s. It has been found that environment online surveys may attract higher response rates from older people (Gigliotti and Dietsch, 2014) and it is also common for older people to be more participatory in voluntary activity, however this data indicates the age distribution of these marine citizens is older than the national volunteering population. Each marine group case[19] study showed varied age distributions, mean age: Marine Group 1 (MG1) 61 (range 22-72); Marine Group 2 (MG2) 39 (range 19-62); and Citizen Science 53 (range 20-82). MG2 supports a local college degree programme with volunteering opportunities so contains a significant cohort of young people amongst its members, but also attracts a section of retired and working age people. MG1 is particularly dominated by retired people, in part due to its weekday, morning meetings. Age data for all participants of the national citizen science project was not available for comparison with what was the largest cohort of this research. It is unclear why my sample population is older than population average.

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[19] See Chapter Three, Methodology for details about each case study and the two marine groups.

Table 4.2 Comparison of proportion of survey respondents in each age bracket, with formal/informal volunteering rate of national 2017 population age statistics. Data sources: Populations data - Mid-2017 population estimates for the UK, Office of National Statistics; and volunteering participation rates from *Changes in the value and division of unpaid volunteering in the UK: 2000 to 2015*, Office of National Statistics.

Age	National population in 2017 (in million people)	Formal/informal volunteering in past 12 months participation percentage (in 2015) (No. people in millions)	Proportion of total participated in volunteering per age bracket	Percentage of survey respondents	Difference between survey and national volunteering participation
25-34	8.96	38.30% (3.43)	18.61%	11.24%	-7.37
35-44	8.34	45.68% (3.81)	20.66%	11.63%	-9.03
45-54	9.24	42.50% (3.93)	21.30%	17.83%	-3.47
55-64	7.78	36.14% (2.81)	15.25%	32.17%	16.92
65+	11.99	37.19% (4.46)	24.18%	27.13%	2.95
Sum	46.31	(18.44)	100.00%	100.00%	

Despite the prevalence of older respondents in this population, when a regression was run to predict marine citizenship score from age, a negative linear relationship was found, $F_{(1, 275)} = 39.078$, $p < .0005$, adj., $R^2 = 0.121$. (Unstandardised regression coefficient B = -0.83, standard error of the coefficient $SE_B = 0.013$, standardised coefficient $\beta = -0.353$, $p < .0005$.) A regression using age to predict the marine citizenship intent ("*As a marine citizen I consider the impact I have on the marine environment*") had an adj. $R^2 = 0.019$ and was not significant. Age therefore, has some relationship to the specific activities a marine citizen performs, reducing depth of activity with increasing age, but not with the extent to which marine citizens are conscious of their impacts on the marine environment.

4.2.1.3. Education and professional environmental experience

Respondents were asked their highest level of education (Table 4.3). 78.5% of respondents were educated to at least undergraduate degree level. In 2017 42% of 21-64 year olds had a degree (Office For National Statistics, 2017) so higher education is clearly over-represented in this population of marine citizens which presents a question about the risk of elitism in marine citizenship.

Table 4.3 Educational attainment levels of a population of active marine citizens.

Educational level	Frequency	Percent
O Level / GCSE / NVQ Level 1-2 or equivalent	11	4.0
A Level, AS/A2 Level, NVQ Level 3-4 or equivalent	38	13.7
Undergraduate degree (e.g. BA, BSc)	115	41.4
Postgraduate degree (e.g. MA, MSc, PhD)	104	37.4
None of the above	4	1.4
Prefer not to answer	6	2.2
Total	278	100.0

Using qualitative data, respondents (n=273) were identified as having environmental education or not. 24.2% had a relevant undergraduate degree (general environmental 19.4%; marine 4.8%), and 14% had a relevant post-graduate degree (general environmental 5.9%, marine 8.1%). Though higher than would be expected in the general population, marine higher education did not dominate the survey population.

Similarly, respondents (n=277) were identified as having related professional experience or not. The majority of respondents did not indicate any professional experience (79.8%). 5.8% of respondents had in the past worked in environmental or marine profession (2.9% each); and 14.5% were currently working in the fields (environmental 7.6%; marine 6.9%). Current marine or general environmental professionals were much more prevalent in MG2 (18.1% and 4.5% respectively) than in Citizen Science (6.6% and 8%), and MG1 had only 6.9% current professionals. Neither format therefore is exclusionary to non-professionals but each project evidently attracts specific groups of people.

4.2.2. WHAT IS MARINE CITIZENSHIP?

Through a citizenship lens, marine citizenship can be considered as a responsibility towards society and environment, valuing the marine environment as a provider of wellbeing and resources for humans and the wider ecosystem. In this context pro-environmental behaviours and choices made with the health of the ocean in mind can be considered as acknowledging personal responsibility. This section considers the nature of marine citizenship as an expression of responsibility and will first give an overview of the pro-marine environmental behaviours considered in this research.

4.2.2.1. Marine and general citizenship

Marine citizen respondents were given two non-exhaustive lists of general citizenship and marine citizenship actions to provide an indication of how active they are in each way. Respondents typically reported being generally active citizens with 91% (n=256) participating in elections and 85% (n=237) stating that they signed petitions. This compares with a turnout in the 2017 UK general election of 68.7% (UK Political Info, 2019) suggesting a particularly politically engaged cohort. An indicator of a connection between political engagement and

environmental issues was the disproportionately high number of Green Party voters as compared to the wider population (22.9% (n=64) as compared to a 1.6% Green Party vote share in the 2017 UK General Election). The Green Party was the most supported party amongst the survey respondents. The number of general citizenship actions was summed to give a simple citizenship score, which had a normal distribution, as assessed by visual inspection of Normal Q-Q Plot, skewness of -0.135 (standard error = 0.146) and kurtosis of -0.391 (standard error = 0.290). The mean number of actions was 5.67, from a maximum 10 actions. Though it's a possibility that respondents report in a socially desirable way, viewing the frequency of citizenship actions (Figure 4.1) it can nonetheless be seen that the more effort or cost (financial or time) to an action, the fewer people report participating in that action.
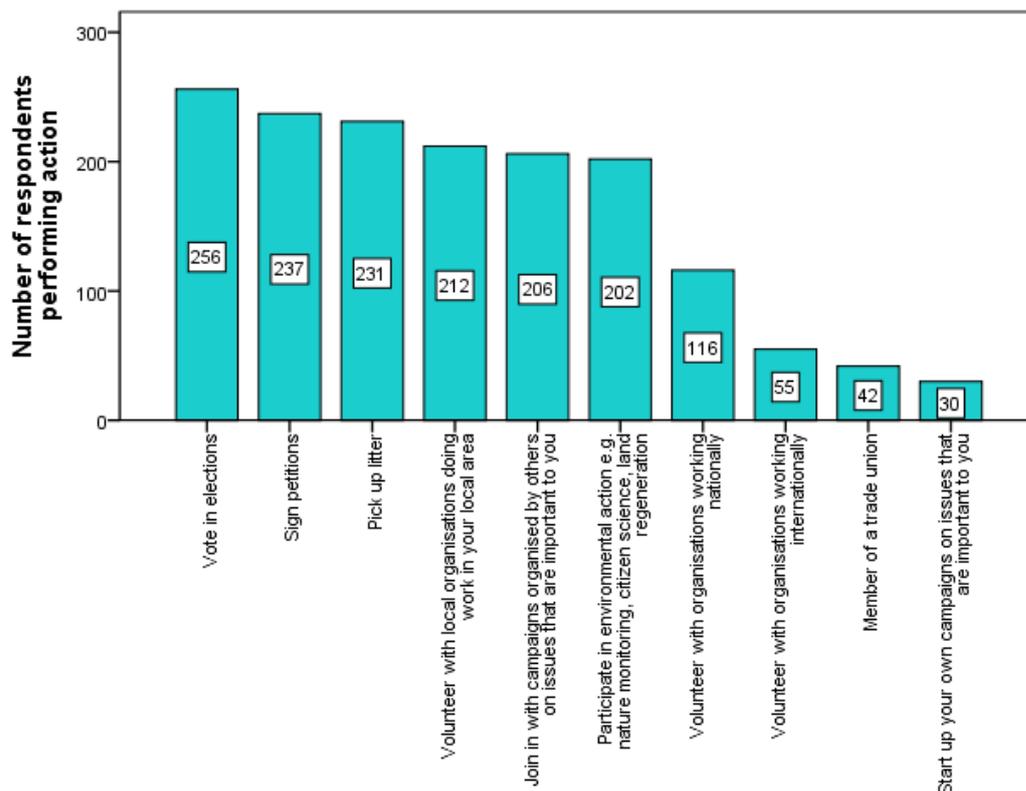
Figure 4.1 Number of respondents performing a range of general citizenship actions. n=280 NB. Rate of trade union membership may be lower than might be expected due to the high proportion of older, retired people.

A similar pattern was produced for marine citizenship activity (Figure 4.2). The sum of marine citizenship activities was calculated for each respondent which had normal distribution, as assessed by visual inspection of Normal Q-Q Plot, skewness of -0.101 (standard error = 0.146) and kurtosis of -0.417 (standard error = 0.290). The mean number of marine citizenship actions was 6.71, higher

than general citizenship, suggesting that the marine element may be particularly motivating for these respondents. The maximum number of actions done by an individual was eight, but in some cases the actions may not have been individually applicable, e.g. recreational choices because the respondent didn't do that recreational activity.
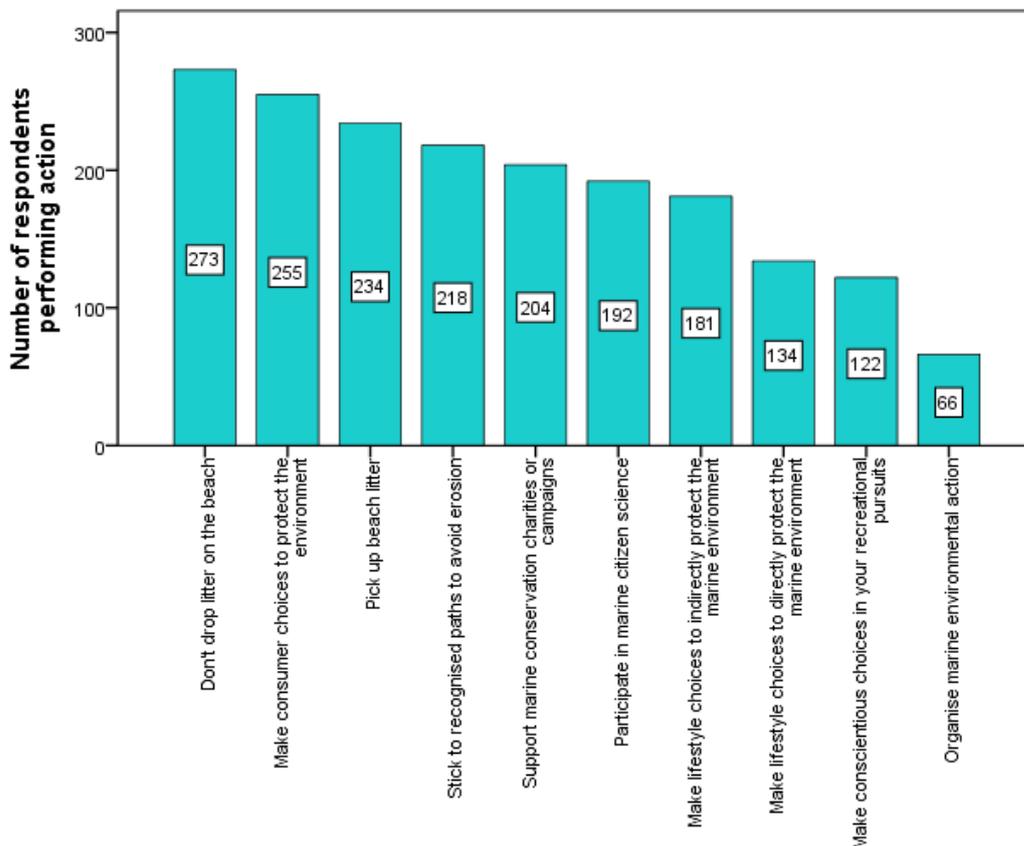
Figure 4.2 Number of respondents performing a range of marine citizenship activities. N=280.

Within the interviews, the most common actions described were beach clean and citizen science recording (seven out of ten interviewees) and these were highly cited across the survey responses. It was no surprise that beach cleaning came up high on the list of actions, due to its relative accessibility: "*Beach cleaning you get every age. You'll get little tiny kids, teenagers, retirees, people*

who are working" (Sarah)[20]. Beach cleaning connected with plastic reduction/packaging related consumer choices: "*all the litter, all the beach cleans that we go on, the rubbish we pick up. So I went plastic free for a month*" (Sarah); and enhanced connection to wildlife: "*If I'm picking stuff up I'm actively thinking of a turtle would think that was a jellyfish or something could get their head stuck in the stretchy things that hold the cans together*" (Sonia). Beach cleaning was also accessible alongside recreation and family time: "*once every two months we'll go and do a beach clean. I'll try and drag some friends out and possibly members of my family, while also walking the dog in your kind of precious free time and wearing a child out*" (Clare). And it was an empowering act of citizenship: "*it's nice to be able to do something productive about it rather than just complain about everybody else's rubbish*" (Sonia).

230 survey respondents were recruited via a citizen science project, so it was expected to see citizen science scoring highly. References to citizen science recording across the survey and interviews related to mammal and wildlife sightings and distribution; nurdle hunting; waste litter types and origins; and strandings. Specific projects and databases were also cited: the Shore Thing; MARLIN; iRecord; iSpot; National Biodiversity Database (NBD); Great Nurdle Hunt; Seaquest; Seawatchers; Cornish Seal Trust seal survey; Seawatch Foundation mammal survey. Recording was highly regarded by the interviewees who discussed it from a personal interest point of view and from the perspective of creating longitudinal local data for research purposes. There was a belief that scientific data had more legitimacy in the eyes of decision-makers, than perhaps anecdotal local knowledge. A need was expressed for sustainability in funding and recording schemes to enable data to be comparable and reliable. Terry spoke passionately about long term recording, not in the context of the scientific research, but in terms of creating an historical record to show the changes we are experiencing: "*But the degradation, nobody*

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[20] As a reminder, interview participants' quotes are accompanied with a pseudonym, whilst survey qualitative data is not.

remembers what things were like before it was degraded… because at one time we used to see bottle nosed dolphins here, and now we don't. Can I prove it? No. Because I didn't write anything down at the time."

Qualifying the high proportion of survey respondents citing making consumer choices, these were mentioned by six interviewees, and included engaging with the public to influence their consumer choices; changing plastic consumption; making agricultural choices; buying local; and eating less meat. These choices reflected broad environmental citizenship as well as marine specific issues. Such marine and environmental conscience was part of a conscientious lifestyle approach, suggesting that the action of consumer choice is an expression of a deeper marine consciousness (see 4.2.2.2 below).

Using the survey responses, I developed a marine citizenship score designed to reflect the depth of marine citizenship activity, taking care not to discount engagement hampered by accessibility of actions presented (described in 3.4.2.2). A regression found that the sum of **general** citizenship actions was positively predictive of **marine** citizenship score: $F(1,277) = 18.962$, $p<.001$, B=0.161, adj. $R^2 = 0.061$ (Figure 4.3), though general citizenship didn't account for a lot of the variance. Higher participation in general citizenship actions positively correlated with more active marine citizens, but depth (thickness) of marine citizenship activity must also be influenced by other variables.
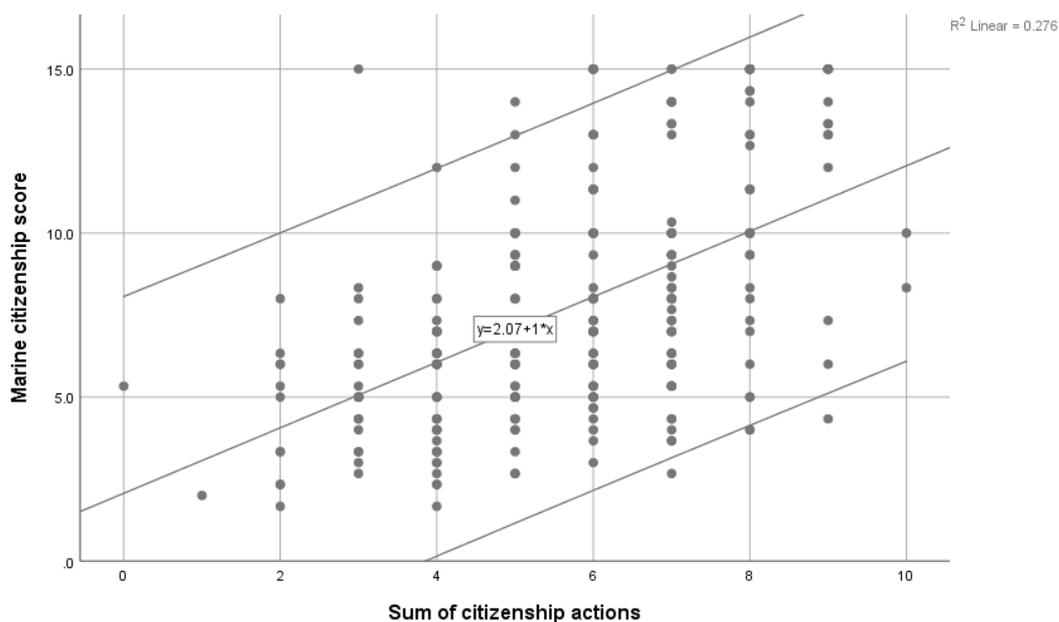
Figure 4.3 General citizenship as a predictor of marine citizenship in a population of marine citizens. N=280.

Respondents were asked to consider how active a marine citizen they are by self-reporting how much they consider the impact they have on the marine environment using a 7-point Likert scale (Figure 4.4). This was distinct from the marine citizenship score, which measured actions participated in, and aimed to represent the moral and value-based conscientiousness that exists towards the marine environment, before the action of any barriers contributing to the value-action gap (Blake, 1999) take effect. In this way, the measure can be understood as a proxy for intention to do marine citizenship, as based on values. 85% of respondents rated a 5 or above, meaning these marine citizens often considered their impact on the marine environment.
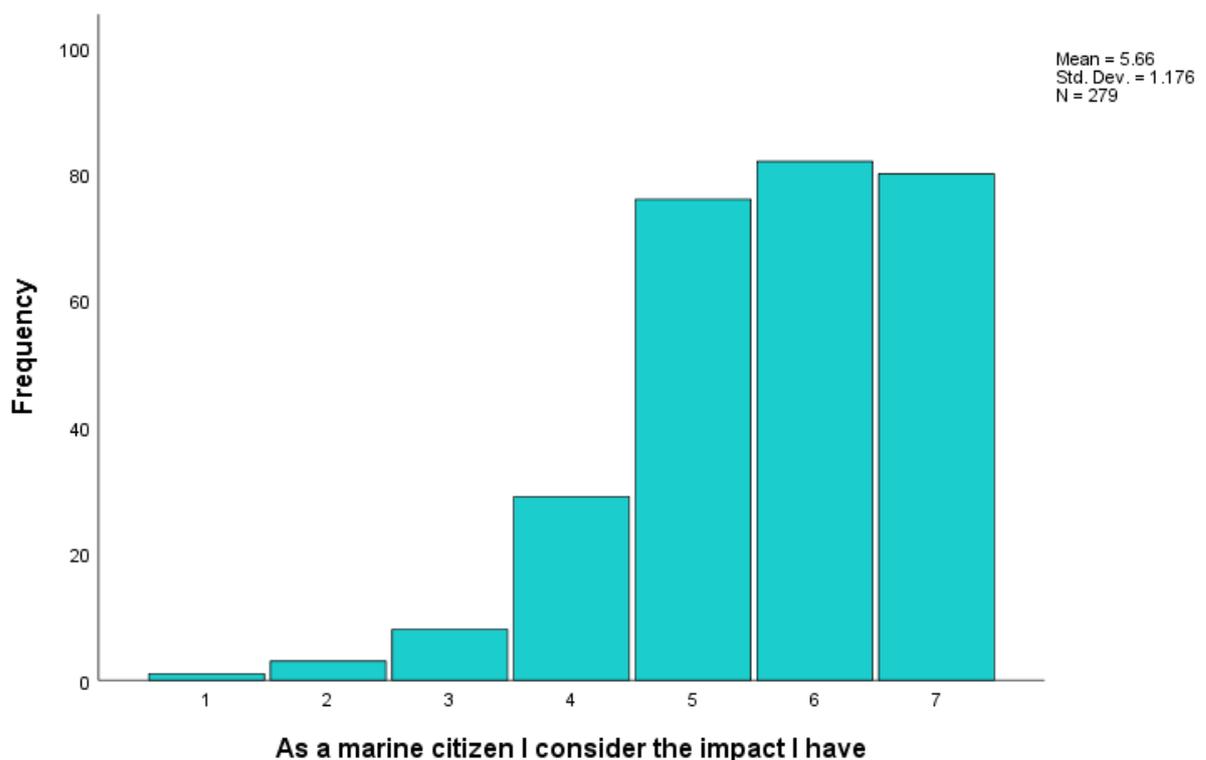
Figure 4.4 Respondents were asked to rank on a seven point scale "how active a marine citizen you believe you are". 1 = I never consider the impact I have on the marine environment, 7 = I always consider the impact I have on the marine environment. Skewness =-0.795. Kurtosis = 0.622.

The interviews yielded more texture around the general and marine citizenship actions that interviewees participated in, and distinguished some of the motivations. For example, John held a strong sense of citizenship responsibility, yet felt his actions with the marine group were distinct and more interest based: "*the citizenship bit, the volunteering, the contributing, the noblesse oblige, is really not a lot to do with the marine world…[Marine Group] is, if you like, in a different compartment. That's something I'm very interested in, but, if you can*

do a little bit like clearing up rubbish and contributing data to what might be a useful scientific cause then I'm very happy to do it". However for Jemma "*marine citizenship is just a part of like world citizenship*", representing her strong *universalism* value. Clare recognised citizenship as being inherently connected to interest, and, unlike John, brought these perspectives together: "*that's the thing that stops you being a citizen isn't it. Not feeling like you have any recourse to things that interest you or likeminded other people.*" This indicates that marine citizenship can connect with divergent perspectives and values.

Marine citizenship was expressed in terms of a sense of personal responsibility or moral duty: "*Well I think it's become addictive… I think if I don't pick it up then who will?*" (Sonia). The responsibility was complex, directed towards the environment, nature, other people (colleagues, family, the general public e.g. Terry: "*See the fascination [of viewers on the path]. I get a sense of duty…for these people*"), or as a way to assuage guilt and negative emotions about humans causing harm. Interviewees felt a duty to learn and take informed personal choices, and facilitate informing others via public engagement. E.g. "*I think citizenship is about taking part, keeping your own knowledge up to date, sharing that with other people, helping reach out to different groups of people*" (Clare). Formal volunteering was mentioned by seven of the ten interviewees, some environment related and some not, and others talked of civic occupations, such as Coastguard, or participating in church communities. It was clear that there was a general ethos of voluntary civic participation amongst the sample, which was based on inherent sense of duty towards society and the wider environment. Citizenship responsibility was part of life lived, infiltrating social media use, and professional lives, even where there was social expense: "*I think I annoy loads of people on it*" (Clare), and sometimes providing future direction through voluntary actions. Together these findings suggest that participation in citizenship is connected to identity which is based on personal responsibility, but that the extent and intended beneficiary of duty varies from person to person.

4.2.2.2. Other types of marine citizenship

As well as the multiple selection list of marine citizenship activities, an open text box in the survey allowed other kinds of marine citizenship activity to be stated. There were 185 coded references to these other activities. Many of them fit within the bounds of the list forming the basis of the marine citizenship score, however some emergent actions did not easily fit and will now be discussed, together with a figure both for the number of coded references and the number of respondents coded (n). These emergent actions could not be included in the marine citizenship score as it would be difficult to quantify the degree of effort required to perform them, and most were not expressed by a large number of respondents.

Champion (91 references, n=89) – There were three aspects to marine citizenship as the act of public engagement as a champion of the ocean: 1) Ambassadors (78 references) engaged in a range of activities such as public engagement or talking with friends and family, "*spreading the word*" or sharing knowledge; 2) Engaging specifically with children (11 references), particularly the respondent's own; 3) Artistic output (2 references). Being a *champion* incorporated *changing attitudes* e.g. "*I think it's something about changing attitudes, you know changing my attitude as well as expecting other people's attitudes to change*" (Sonia); and "*make people eat sustainably and change their habits sustainably, because of the marine environment*" (Clare). Due to the prevalence of public engagement and raising awareness as a form of marine citizenship in both interview and survey, this is given additional attention below, in Section 4.2.2.3.

Professional output (19 references, n=14) – Some respondents considered outcomes of their professional life to be marine citizenship actions, because, for example, they worked at a marine or public organisation that enabled them some form of influence. This included collaborative working, teaching, artistic output, and professional participation in decision-making. E.g. "*As an educator I try to have an influence on others*"; "*I also help to write international environmental laws with UN organisations*". Such a career trajectory meets values and needs: "*I sort of feel like my enthusiasm for trying to save the marine environment, globally or whatever, has actually kind of landed in a home* [at

work]" (Clare). This framing distinguishes citizenship from volunteering, as payment/career as a reward becomes involved, and situates labour as a social good. Younger interviewees talked particularly of the role marine environmental volunteering had played in developing their professional environmental careers, but despite this, indications were given that volunteering went beyond professional development: "*I do feel like it's an important message. I wouldn't still be doing the volunteering at events or whatever if I didn't think it was*" (David).

Stewardship (10 references, n=10) – Respondents reported taking an active role as a steward of the marine environment by reporting incidents or challenging others on their actions. E.g. "*I would challenge someone who is acting irresponsibly on the beach, i.e. leaving litter or dog fouling.*"

Learning (6 references, n=6) – Acquisition of knowledge was considered by some as being an act of marine citizenship in order to make informed decisions and be a responsible citizen. This was distinct from sharing knowledge with others (*champion*).

Marine Conscience (4 references, n=4) – Some respondents reported marine citizenship as development or presence of a conscience about the marine environment rather than specific actions. E.g. "*Just being generally conscious and mindful of how everything you do affects the environment.*"

Via the interviews, another emergent theme of *lobbying* arose which was used to represent political and civic action on behalf of the environment. It crossed over with themes above such as *stewardship* and *marine conscience.* For example, John explained how his participation in the marine group had enabled a transition from "*an interest just in the sea, marine life, into having to become a sort of natural science, national organisation person*", by which he meant engaging in larger scale policy activities. Elizabeth said "*You have to be logical, think of solutions, and hand them back to government*" exemplifying a proactive approach, working to facilitate policy-making. This included signing petitions and online campaigns which, as an act of citizenship, was second only to voting in elections (Figure 4.1).

The next section provides a particular focus on public engagement as a marine champion, as this was the most prominent of the emergent themes. It also draws in the findings that related to knowledge and awareness raising, as the qualitative data above was particularly focused on education and "*spreading the word*".

4.2.2.3. Knowledge, public engagement and the marine champion

As introduced in the literature review in Chapter Two (2.3.2) there is a tendency within the marine citizenship literature, to view marine citizenship as participation in discrete pro-marine environmental behaviours, and as driven by filling gaps within the public in relation to knowledge, understanding or awareness. In my data, explicit reference to knowledge deficit approach was made by multiple respondents, e.g. "*People having an understanding of the marine environment ensure[s] they are likely to help it."* It was not surprising then that knowledge was a strong emergent theme in this research. However, the data evidenced a much more wide ranging role for knowledge in marine citizenship. As a thematic code in the survey data (N=280), knowledge was referenced as follows:

- Public engagement, including environmental education
- Policy
- Barrier/enabler of marine citizenship
- Motivator for marine citizenship (both own and others' knowledge development)
- As part of the importance and value of marine citizenship
- Collection of applied and community knowledge
- In decision-making, connecting policy-making with local knowledge
- Marine groups were thought important for knowledge exchange and facilitating many of the above.

Though respondents talked abstractly about knowledge as important to motivate themselves or others in marine citizenship, and it was a significant theme in the data, it did not appear to directly drive participation in their own marine citizenship. A distinction could be made between possessing knowledge

and the stimulating process of learning – certainly this fits with the high level of *stimulation* value seen in this population of respondents, as discussed in 5.2.1.

Within the interviews local environmental/place knowledge arose as a theme; encompassing geological, biological and geographical features of local coast, the dynamic character of the sea, access to it, and the inspiration, interest and enjoyment that it promoted. Nine of the ten interviewees demonstrated and/or discussed local knowledge and there was pride and interest in their local environments. Local knowledge was perceived to generate place attachment and local pride: "*It's probably about living in place isn't it, and getting to know the people. And getting to know a bit about the shores and what lives on them and what lives in the waters.*" (Sarah) And promote emotional responses: "*Teach them about passion in the area that they live in first and then explore further afield.*" (Elizabeth). Local knowledge was valued for marine decision-making: "*I think recognising different groups' expertise and knowledge is really important. Giving them respect.*" (Clare). And was believed to promote wider ocean literacy[21]. Interviewees identified a pathway for engaging others, beginning with local knowledge, generating emotional connection to place, and in turn generating interest and awareness of marine issues.

Some interviewees identified knowledge deficit in the general public: "*most people are completely unaware of marine [issues/environment]*" (Marie); "*I'm also amazed at how little is known.*" (Clare); and "*They've got some weird ideas. I stand by them and listen to them and they really don't know what they're talking about.*" (Terry). Addressing such a deficit, together with local place attachment and pride, was seen by interviewees as a pathway to caring and action by others.

The higher than expected levels of survey respondents' educational attainment and professional connection to the environment (Section 4.2.1.3) may be

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[21] While this currently has a moving definition, it has recently been defined as "understanding of the importance of the oceans, the human-ocean interactions, and opportunities to act sustainably and reduce human impacts on marine ecosystem" (Borja et al., 2020).

contributory factors to the value placed upon knowledge and the desire to see the public more informed on marine issues, despite possessing information not emerging as a particular driver for their own marine citizenship. It was clear within the data that many respondents subscribed to knowledge deficit approaches to generating awareness and pro-environmental action, but also that knowledge and learning were valued much more widely, and developing one's own understanding of the marine environment and human impacts upon it, was seen as an important part of marine citizenship itself. Being informed can therefore be understood as being responsible and an act of marine citizenship.

If being informed oneself is an act of citizenship, then engaging the public and family/friends is a natural extension of that. Approximately one third of the survey respondents (n=89) cited this as an action they considered to be marine citizenship. 19 respondents additionally cited this as one of their motivations for participating in their marine group/citizen science project. This was more prominent for those from a marine group (n=11, 21.2% of marine group respondents) than the citizen science project (n=8, 3.5% of citizen science respondents). These are small figures, but it may be that marine groups are more public facing than the citizen science project and therefore actively sought by those wishing to engage the public. The goals of public engagement were invariably expressed as educating/sharing information; raising awareness; encouraging pro-environmental behaviours; and sharing/creating enthusiasm for the marine environment. This engagement was performed through voluntary actions at public events such as talks or family events; educational events for school groups/clubs; and generally talking to people including family, friends, and passers-by.

These exchanges of information reflected themes of environmental identity and values and marine place attachment (that are investigated in this research, Chapter Five: People and Chapter Six: Place). They related to a range of qualities of the sea (Table 4.4).

Six of the ten interviewees talked at length about public engagement. Discussion ranged from operational aspects of public engagement (such as job availability, outreach and engagement practices) to how individuals had themselves become active marine citizens through public engagement, such as

via the marine group or local aquarium. The ways interviewees worked to engage the public showed real diversity and innovation both as individuals and the marine groups. Engaging the public was valued and seen as a positive way of effecting behaviour and attitude change: "*I think most people do want to help...I'd say a good 90% of the people on the boat leave wanting to do something, change something*" (Elizabeth); "*if you come and start chatting then they'll start asking you questions and that is much more like likely, I think, to make them make a different decision...and make them think*" (David). Public engagement was viewed as the beginning of a process towards broader civic participation and ultimately political action, as exemplified by changes in the UK in 2018/19 about marine plastic pollution "*the more people get together, and the more people talk about things, the plastic has gone mental and look at what's happening, then they have to listen because it's the power of the people*" (Simone).

Table 4.4 Examples of qualitative data relating to public engagement as an action of marine citizenship, as cited by a population of active marine citizens.

Public engagement purpose	Example data
Aesthetic qualities of the sea	"Sharing the beauty of the coast on social media in regular photos" "I record photographically the sea scape so that others will not forget what we are fighting for"
Wildlife protection	"Have put up posters alerting public/dogwalkers to ringed plover nesting site on our local beach"
Wildlife as intellectually interesting/beautiful	"Help to educate others about the seashore life" "Just posting photos on Facebook of the amazing sea creatures I find, to show my friends what's out there"
Marine citizenship actions	"Encourage others to make more eco-friendly life choices about food, types of cleaning products, recycling, picking up litter etc." "pass on information that isn't widely known to friends and family to influence their consumer and lifestyle choices"
Human threats to the sea	"Teaching children about the marine environment and about the dangers of marine litter."
Environmental values	"Inspire others to value the sea and become involved in marine conservation activities"
Environmental education	"educating my kayaking customers about the place and environment as well as the activity they're doing"

The data on public engagement paints a picture of active marine citizens working to develop an informed, interested public, who are engaged in civic participation and political action to collectively create change for the marine

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environment. This understanding is furthered in the discussion on the perceived value of marine citizenship (4.2.3).

4.2.2.4. Barriers to and enablers of marine citizenship

An important aspect of the investigation of marine citizenship is the factors that enable and disable people from participation in marine citizenship. Survey respondents were asked to describe such factors and it was evident from the data that it was largely not the same factors that act as barriers as act as enablers (Figure 4.5).
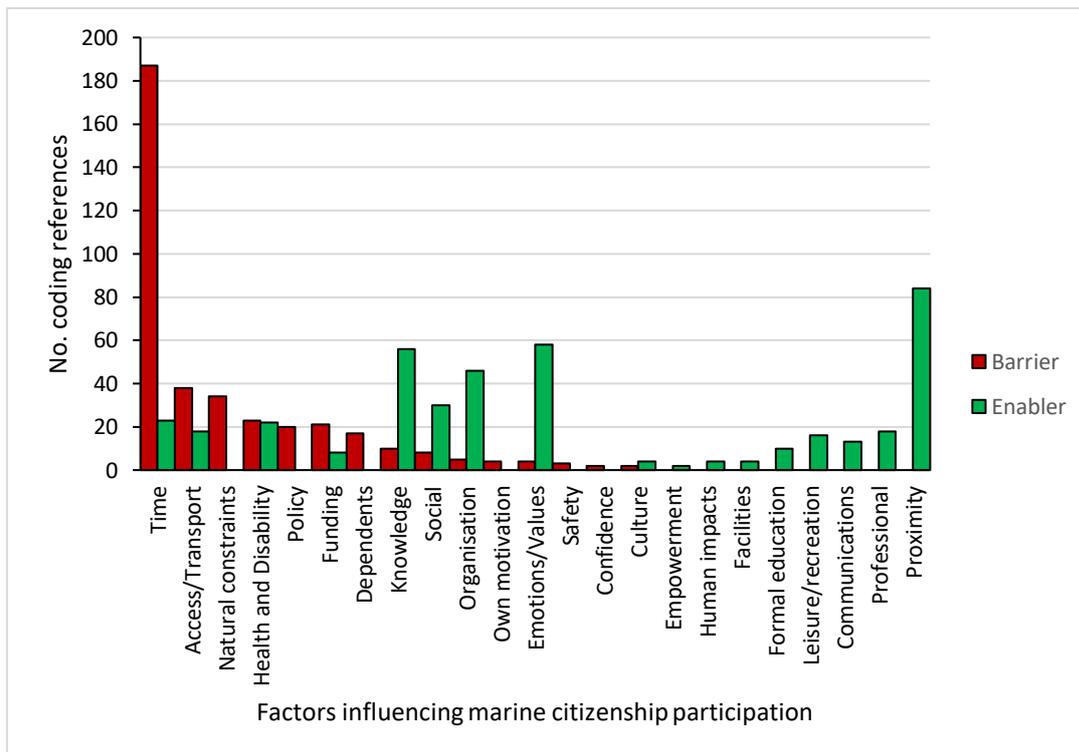
Figure 4.5 Number of coding references from survey responses of active marine citizens (N=278) in relation to barriers to (red) and enablers of (green) marine citizenship. NB. Policy refers to systemic barriers to marine citizenship, for example product packaging, economic impacts, and capitalism.

The most commonly cited barrier is *time*, in both the interviews (13 references) and the survey (187 respondents[22]). When qualified, this was mostly related to

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[22] Typically, in this survey question each respondent was only once allocated to a code, however on a small number of occasions a single respondent has provided two or three distinct comments which have grouped together under one code. Therefore coding references and respondent number are typically the same but occasionally slightly different.

available time to participate in activities, but also timing of organised events that clash with other commitments, such as caring responsibilities. There was belief from older interviewees that younger families have more demands on their time and that the rates of early retirement are going down. All other barriers were cited by fewer than 40 survey respondents and typically related to logistical and practical aspects of marine citizenship, such as *access* to the coast, both in terms of transport to the coast and physical access to the shore; *health and disability*; other constraints such as *caring responsibilities*; and *financial access*. *Access* was the second most cited barrier in the interviews and focused on physical access to beaches and infrastructure such as transport networks. In the survey, private transport and good health were noted enablers. Within the interview data, it was younger respondents and recollections of youth which most featured finances as a barrier/enabler. Cited examples included money for parking, affordability of environmentally friendly consumer options, access to education, and affordability of unpaid work or volunteering. Additionally, self-employment was mentioned both in terms of flexibility of time, and lack of flexibility in financial resources.

As far as practical aspects were concerned, enablers were most frequently expressed as *proximity* to the sea. This was due to easy access to the coast and the opportunity to perform an action whilst visiting: "*for example by regularly visiting the coast I am able to do a litter pick as part of my recreational activities.*" *Proximity* was occasionally expressed as visiting frequently, but most commonly as living or working near to the sea. It was not expressed in terms of transport, the lack of which was cited as a barrier. In 6.2.1.1 the conscious choice to live near the sea is explored and frequency of visits is tentatively associated with increased marine citizenship activity. Certainly this can be understood as a matter of ease and convenience, but, when viewed alongside the conscious choice to live near the sea, one begins to see how marine citizenship can be shaped by policy frameworks that affect capacity for such life choices.

Ten survey respondents believed that lack of knowledge was a barrier to their marine citizenship, whilst 56 believed having knowledge was an enabler. Six of the ten interviewees also referred to *knowledge* from a variety of perspectives. *Knowledge* was expressed as a barrier to public engagement (via language),

"*They all come and talk their private language and alienate the audience before they've even begun."* (Marie); as important for understanding impacts, "*we know that the real deal is what you're seeing out in the sea*" (Elizabeth); as a barrier to own participation, "*I don't know enough to contribute intelligently to that*" (Sonia); and as a barrier to participation in decision-making "*I don't even think they know how best to go 'actually I don't think that's a good idea.' Some people don't know who their MP is*" (Simone). This reflects the importance of knowledge (discussed above in 4.2.2.1) and the diverse ways in which it intersects with marine citizenship.

The next most cited enabler was *Emotion/values* (n=56, 58 references). This could not be adequately split into two codes as there was much overlap between them, for example: "*A genuine interest/concern/passion for the marine environment."* This code included expression of environmental values, emotional connection to the marine environment, and an intellectual or stimulating interest in the marine environment. Only four respondents expressed values as being a barrier, either in respect to the values of others, or their own ethical dilemmas: "*I dislike driving and see driving long distances as counter-productive to my goals to be more economical, ecologically responsible*".

46 respondents made reference to events, opportunities or organisations whose presence has enabled marine citizenship through their events, network, or information provided, grouped as *Organisation*. This was presented as an important enabler of marine citizenship activities. The presence of projects/groups inherently connects with social enablement of marine citizenship through shared interest, morals and values "*Other like-minded people in my area working together, organising events and projects to reduce our impact on the marine environment*"; and through their social capital "*the feeling of community - knowing I make a difference because I am one of many*".

The evidence presents a picture of active marine citizens who are motivated by their internal character of values and emotional connection to the marine environment, and who derive benefit from working with others. At times, the will is there, but the logistics or structures of life get in the way, particularly for actions performed outdoors by the sea.

4.2.2.5. The enabling marine group

As seen above, organisations such as marine groups enabled individuals to become active marine citizens. Marine group case studies in this research were all volunteer established and run, requiring highly motivated marine citizen leaders. Nine of the ten interviewees spoke about the role of the group. Key themes can be organised according to leadership or membership. Membership themes were mostly around the enabling factors provided by group membership as discussed above in 4.2.2.4. Leadership themes related to the aims and organisation of the group, its impact and reach, and networks it connects to. Both themes included knowledge exchange.

Marine group leaders[23] discussed the aims of their group in personal terms. These marine groups arose out of the proactive interest of engaged marine citizens who wanted to create impact where a gap was identified, and engage in the marine issue they were emotionally connected to: "*that's why you've got* [Marine Group], *because* [founder]…*has become passionately interested in the marine world and to the point of really sort of making* [it] *happen*", "*we've always known that the environmental lobby and the commercial lobby are a little bit opposed to each other. And we thought we could totally bring them together*." Leaders from both case study marine groups discussed the constitutional requirements and how they established their groups. Once established, the groups evolved somewhat to meet the needs of members and changing circumstances in the local or policy area.

What was striking from these key informant interviews, was the labour involved in maintaining the marine group, all done voluntarily, and how much interpersonal relationships were embedded in this process. For example, leaders from both marine groups talked about needing to recognise skills and need within the members, "*you've got to scrape away at people and find out*

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[23] No identifier provided for key informants to protect anonymity, due to their senior role in the case study marine groups.

what it is they really know and what they can do"; and the extent of the people management required "*So then you're balancing age, and students, and experience, and capacity, and resource, in one meeting*". Both constitutionally and interpersonally, the leadership of the group was challenging "*there were some pretty horrendous shouting matches at meetings and people walking out and things like that…we sort of felt quite young and inexperienced and not really able to deal with that*". This indicates that running a marine group is a leadership role that, though voluntary, requires considerable skills, time and emotional commitment, and is demanding on leaders.

The need for a specific individual or core group of willing and committed volunteers to get a group going was recognised by the members "*you need a lot of dedicated people to start that up.*"; and this gives a vulnerability to the sustainability of the group, "*this sort of feeling that when* [founder] *runs out of energy* [marine group] *will collapse*". Additionally, leaders described an unstable funding situation where grants must be won to deliver projects and maintain the running of the group. With these issues together, community-led marine groups may be in a precarious position.

Despite this precarity, the value of the marine group, and organised marine projects, are highlighted throughout this chapter and thesis, particularly in relation to access to marine citizenship information and activities, and social, emotional and moral support for marine citizens. Marine groups are embedded in other marine policy groups and processes, demonstrating that participation in a group can develop capacity and skills, empowering members in ways they might not achieve alone. The mixing of people of different backgrounds supports this sort of development: "*our membership, has varied between… complete new, ignorant amateurs, as I was of course once, to fellows of the Royal Society*". There are local, regional and national networks that connect small scale groups to one another and to larger groups and initiatives, for example the participation of both case study marine groups in the marine conservation zone consultations. Joining up local activity was the aim for one of the groups: "*So we started…doing a lot of talking and a lot of meeting people and finding out exactly what was happening in the town. And there seemed to be a lot of things happening but nothing was joined up.*"

One result of this collection of empowered and engaged marine citizens, who are well networked, is that the group becomes a source of knowledge for people and organisations outside of the group or area: "*we've really…enabled other organisations to say there is a focus of activity in the marine world, so people tend to come to us for an opinion on something like marine planning*". And this developed status in the marine world supports the stability and future sustainability of the marine group: *"they're approaching us and we're quite often getting parts of grants, or the whole of grants in order to deliver that bit of the thing."*

In creating change, interviewees were confident that marine groups were effective, with a raft of impacts attributed to the marine groups. This impact was seen as being down to a community of members able to deliver multiple projects or activities; a demonstration of collective action: "*one of the benefits of having a marine group and having a community of people that do that, is you can cover a lot of bases can't you. And that's where the marine group can have as many little projects as they've got going on, you get a broader expanse of reach.*" (David).

As well as being a hotbed for collective action, the groups were understood as being hubs for knowledge exchange. Clare highlighted the barriers to lay understanding of marine issues: "*But on a 'what do citizens know', or…'what can they tap into', absolutely nothing really. So that's again…the paradox of global, local, knowledge exchange and all of this. And knowledge exchange at universities is…it's rubbish isn't it? So I think there is a huge role of people, of groups like this to be the knowledge exchange."* Whilst within the marine environmental community (and indeed in the data for this research) there has been a tendency to focus on addressing knowledge deficit to create change (as discussed in 2.3.2), the interview responses of those embedded in the marine groups gave a much broader picture of knowledge. Knowledge deficit approach was sometimes implied, but alongside that was a more nuanced understanding of literacy and value given to local environmental knowledge and place-based knowledge. Additionally, there was a strong sense that developing one's own knowledge was an act of citizen responsibility and that local marine groups provided access to knowledge, both environmental and political. These ideas feed back to the general discussion on knowledge above in 4.2.2.3.

Via the marine groups and projects, interviewees described a sense of responsibility to address perceived knowledge deficits and nurture awareness and nature connectedness. The groups were understood to confer a legitimacy upon public engagement: "*You realise that you are the point of call of that, so people are asking you and this is an opportunity to really share the deal, but you have to be confident in what you know you're talking about for them to actually listen. And what you're telling them is so important because they're gonna go away and act on that. So knowledge is really important.*" (Elizabeth). That group-based legitimacy empowered the group to create policy change – "*we do in a sense punch above our weight*" (Marie) – and connected to a need for a strong evidence base through, for example, citizen science derived data. Though there was high value placed on local environmental knowledge, this was nonetheless typically perceived as requiring scientific or economic validity to be effective in policy-making: "*they need to have like that hard data, don't they, to be able to effect policy change?*" (Jemma).

In summary, marine groups can be understood to be a medium through which all the key themes of this chapter can be delivered: they were seen as enablers to marine citizenship, engaging the public, providing knowledge exchange, building capacity and developing skills in individuals, gathering hard evidence, providing social capital for marine citizens, and amplifying the voice of marine citizens within marine policy and decision-making. These groups were seen as having a grassroots power derived from collective action, both enabling citizen responsibility and facilitating the exercise of citizen rights, and were bigger than the sum of their parts in policy impact across a range of scales.

It is clear from the extent of marine citizenship participation and the expressions around the value of marine groups that marine citizens see a value in marine citizenship. In the next section I investigate what that value is and how marine citizens see marine citizenship contributing to wider society and environment.

4.2.3. THE VALUE OF MARINE CITIZENSHIP

Academically there are many arguments in favour of public participation, as environmental citizens or in environmental decision-making, such as improved outcomes (see 2.4.1.1). To compare with this literature, I was interested in the

first-hand perceptions active marine citizens hold about the value of marine citizenship.

I asked survey respondents "*In what ways do you think marine citizenship is important for marine environmental health?*" (Figure 4.6). Responses were particularly couched in terms of social exchanges of knowledge, awareness, and shared responsibility, and not focused on specific changes in marine environmental quality. There was an overall sense of contribution towards a cause, for which many felt responsible, in a citizenship sense, and of collective action being both an effective agent of change and a product of engaging the public.
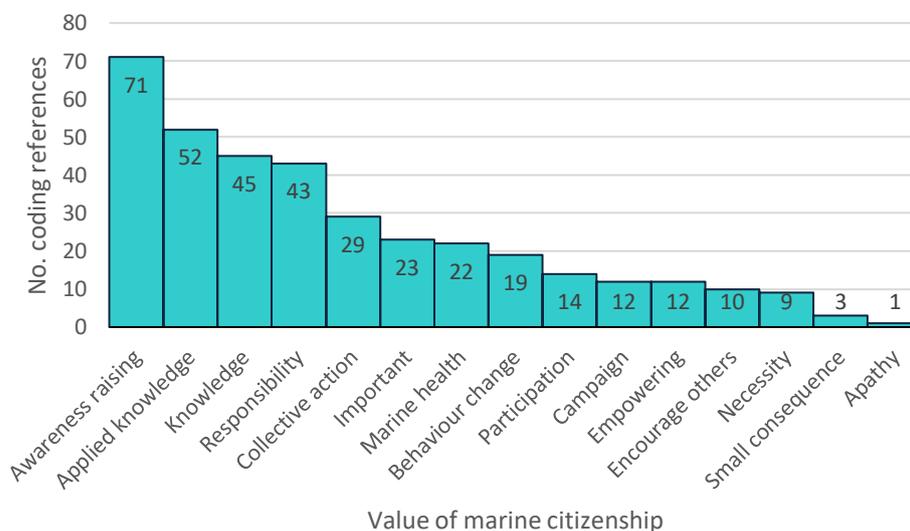
Figure 4.6 Active marine citizens were asked "*In what ways do you think marine citizenship is important for marine environmental health*?" Responses were coded to draw out key themes. (N=249). NB. Within *Responsibility* is included sub codes of *Universalism value, Caring* and *Ownership* which were all connected with an expression of being universally responsible for marine environmental health.

There was an implicit assumption expressed by some respondents that raising public awareness and educating people/sharing knowledge directly influences caring, which in turn promotes pro-environmental behaviour (Table 4.5). For some respondents this was mediated by a sense of responsibility, stewardship and ownership, which were connected with caring.

Table 4.5 Example qualitative data coded for key themes expressing the value of marine citizenship for marine environmental health.

Code	Example data
Awareness raising	"Helps spread awareness of what needs to be done."
	"Greater awareness of factors affecting the marine environment might make changes to your habits."
Applied knowledge	"By understanding our environment better we are more able to protect and preserve what we have and even help with regeneration of particular systems."
	"The more data we can collect the better and more informed the decisions."
Knowledge	"The marine environment is under threat through ignorance of its importance and marine citizenship is a way to understand and get closer to the environment."
	"The more people that know and care about the marine environment, the more likely it is to be protected."
Responsibility	"Community engagement and knowledge makes everyone stakeholders and gives common responsibility."
	"Promoting personal responsibility and changing attitudes is crucial to creating the idea that we are custodians of the environment."
Collective action	"If more people were to be involved, hopefully we could reduce and improve environmental impacts."
	"It is important to be a member of a group or community to make your voice heard."
Important	"Extremely important if members of the public don't get involved in marine citizenship activities then we can't conserve our marine environment."
Marine health	"The more litter picked up, the less there will be on the beaches and in the sea, the less birds and animals will ingest and get caught in."
	"Ocean health depends on people acting appropriately and agitating for politicians to make appropriate policies - this demands an informed populace - marine citizens."

Respondents were additionally asked about the value of marine citizenship to marine decision-making, as the key vehicle by which human actions in the marine environment are managed (Table 4.6). Three themes were particularly prominent: citizen *empowerment*, *informed decision making*, and relative *power balance* of different actors. Only six survey respondents referred to environmental organisations or NGOs, in keeping with marine citizenship viewed as personal empowerment. From these data, a picture of active marine citizenship is formed, as an exercise of citizen rights, as part of (or sometimes in opposition to) the established democratic system in the UK, and as empowered through collective action.

Table 4.6 "*In what ways do you think marine citizenship is important for the process of marine decision-making?*" Example data from sample of active marine citizens (N=207).

Code	No. coding references	Example data
Citizen empowerment	69	"Citizen actions influence decisions Marine citizenship can even instigate decisions" "It gives a voice to those directly impacted by decision"
Informed decision-making	51	"Having enthusiastic and dedicated people who spend a lot of time in the area provides up to date data on the state of the marine environment." "Informed decision making is key to good policy. It isn't always the obvious thing that's best."
Power balance	36	"I think marine environmental groups do not have enough say in marine decision making." "We are more down to earth, less captured by the self-interest, ethos and jargon of the professionals" "The sea and shore belongs to use all… We should all had a say in even the smallest decisions."
Raising awareness	18	"It's the main form of communication to most general citizen about marine policy decisions." "Raising awareness, encouraging active participation."
Knowledge deficit	13	"People are better able to express opinions and have their say if they have a solid understanding of what it is they're trying to protect." "The more the public is educated the more influence they can have"
Local knowledge	13	"In coastal waters, many locals understand the oceans better than those writing the policy, and their views on how proposed changes can effect both the environment and local businesses are vital." "Local people know their area and are directly affected by decisions and so should be a big part of the decision making process"

For the marine citizens in this research, the dominant value of marine citizenship is not through direct action upon marine environments, but through social action and knowledge exchange. This extends the marine citizenship narrative out from the direct impact of pro-environmental behaviours, to include a citizen duty to participate and exercise environmental rights. Here, societal responsibilities are extended into the natural world, reflecting *universalism* basic human value and environmental values (see 2.4.2.1).

4.2.4. MARINE CITIZENSHIP AS A RIGHT – PUBLIC PARTICIPATION IN POLICY AND DECISION-MAKING

In the previous sections I have laid out evidence that challenges the idea of marine citizenship as being knowledge-driven pro-environmental behaviour, and instead made the case for marine citizenship as acting out of a sense of responsibility. Marine citizens indicated their belief that marine citizenship is also about exercising rights as members of society. In the following sections I look at how marine environmental rights are exercised in a formal policy arena. I begin with an examination of who participates and how they feel empowered to participate in marine environmental decision making. I then assess understanding of the formal legislation that confers a right to environmental participation and means of seeking environmental redress.

4.2.4.1. Who participates in marine environmental decision-making?

To see if participation related particularly to demographics and other relevant variables in this research, I ran a series of Mann Whitney-U tests examining various variables from the survey data against whether or not a respondent had participated in a marine environmental decision-making process. Significant variables are presented in Table 4.7. Scale variables investigated that were not significant were age; residence at current location/age; environmental attitudes of *humans abuse* the environment, and *climate change concern*; and *environmental identity index* score. Additionally, all ten basic human values were also tested.

Whilst significant predictors are presented, the statistics do not provide explanation of the relationship between the variable and participation (or not) in marine decision-making. The most significant findings above are the two measures for general and marine citizenship, indicating that those participating in marine decision-making are typically also very active marine and general citizens. Marine citizenship score is statistically associated with all the variables in Table 4.7 except for *non-materialism* and *travel time to the sea* (See 5.2.3 and 6.2.1 for these findings) therefore these variables are likely to act upon participation in decision-making via the act of marine citizenship.

Table 4.7 Participation in marine environmental decision-making (yes vs no) tested against a range of variables with Mann Whitney-U. U score, standardised test score (z), asymptotic significance, and median values for each distribution are provided. Description of the relationship is presented in final column. Only statistically significant findings are included. Underline indicates tests which were statistically significant but for which the distribution does not give difference in the median.

Variable	U	z	Asymp. sig.	Median		Factors associated with participation in marine environmental decision-making
Active citizenship						
Citizenship score	11,827.0	6.520	<.001	Yes No	7.00 5.00	More general citizenship activity
Marine citizenship score	11,360.5	5.680	<.001	Yes No	10.00 6.17	More marine citizenship activity
Marine citizenship intention	9,174.0	2.221	.026	Yes No	6.00 6.00	More consideration of impact (as per distribution)
Attitudes						
Non-materialism	9,062.5	1.976	.048	Yes No	5.00 4.67	Less materialism
Values						
Security value	5,548.5	-3.403	.001	Yes No	-0.67 -0.06	Lower emphasis on security
Stimulation value	9,308.0	2.811	.005	Yes No	0.46 0.10	Higher emphasis on stimulation
Conformity vale	6,344.0	-2.048	.041	Yes No	-0.76 -0.46	Lower emphasis on conformity
Place						
Place attachment	9,439.5	2.515	.012	Yes No	4.69 4.43	Higher marine place attachment
Time (mins) from the sea	6,167.5	-2.242	.025	Yes No	7.00 12.00	Closer proximity to the sea

Higher marine citizenship scores (i.e. thicker marine citizenship) include actions which are time-consuming or costly, therefore it is expected high scoring respondents would be more willing to participate in decision-making. Travel time to the sea was not a significant predictor of depth of active marine citizenship but is a predictor of participation in marine decision-making. Residing close to the sea sets a respondent within a consultation catchment area for specific local development or issues, which may explain proximity having an impact on participation. This is supported by the dominance of local consultation as the type of decision-making activity engaged in, as is discussed below (Table 4.8).

4.2.4.2. Types and efficacy of public participation in marine decision-making

As the main formalised route of participation, I wanted to understand more about the nature of participation in marine environmental decision-making. My aim was to understand the frequency of participation, the ways in which participation occurred, and the perceived outcomes. 80 respondents (28.6%, n=278) to the survey indicated they had participated in some sort of decision-making activity. Of those, 78 provided more details about the nature of that participation (Table 4.8).

Table 4.8 Summary of types of participation in marine decision-making from a group of active marine citizens. N=78. Some respondents detailed more than one activity. Respondent perception of efficacy of the participation is provided for each activity type, where that information was provided, together with a percentage proportion of those data. Bolded figures indicate the majority outcome for each activity type.

Participation activity	No. coded references	Efficacy of participation		
		Positive	None	Unknown
Consultation	52	**17 (42.5%)**	13 (32.5%)	10 (25.0%)
Marine Conservation Zone consultations	(27)	**8 (38.1%)**	6 (28.6%)	7 (33.3%)
Other general environmental consultations	(20)	6 (37.5%)	**7 (43.8%)**	3 (18.8%)
Other marine environmental designation consultations	(5)	**3 (100.0%)**		
Citizen Science	13	3 (33.3%)	3 (33.3%)	3 (33.3%)
Petitions	12	3 (42.9%)	3 (42.9%)	1 (14.3%)
Planning	12	4 (44.4%)	4 (44.4%)	1 (11.1%)
Professional engagement	11	**5 (62.5%)**	2 (25.0%)	1 (12.5%)
Lobbying elected representatives	11	**4 (40.0%)**	3 (30.0%)	3 (30.0%)
National Government	(8)	2 (28.6%)	**3 (42.9%)**	2 (28.6%)
Local Government	(2)	**2 (100.0%)**		
European Government	(1)			**1 (100.0%)**
Campaign (inc. NGO-led)	7	2 (40.0%)	**3 (60.0%)**	
Public engagement	3	1 (50.0%)	1 (50.0%)	
Coastal partnership	2	1 (50.0%)		1 (50.0%)
IFCA Byelaw creation	1		**1 (100%)**	
Marine Education policy development	1	**1 (100%)**		
Total	125	41 (43.6%)	33 (35.1%)	20 (21.3%)

The most common forms of participation are via formal consultation, citizen science (as a contribution to an evidence-based process – expected to be common in this sample given the citizen science case study used to recruit respondents to the survey), signing petitions, and participating in local planning. The findings here suggest that the relatively recent marine conservation zone designation process has increased opportunity for the public to participate in marine decision-making. Some respondents made use of writing to their elected representatives, particularly MPs. There may be cross-over between this action and signing petitions as petitions frequently are sent to MPs, but there is a distinction in time and effort between actively creating a letter or email to send

to an MP and signing a prepared petition. It was interesting that three respondents referred to talks delivered to the public or peers as participation in decision-making. Public engagement could be considered as an indirect means of participation if members of the audience go on to become more active marine citizens who engage in decision-making.

67 respondents provided data that enabled an analysis of whether or not they felt their participation in marine decision-making was effective, which is also presented in Table 4.8. Acknowledging that the sample size becomes very small for each activity, local scale of government was viewed as the most effective activity for public participation. In both case studies these were local issues where local politicians were lobbied and the outcome was known and visibly influenced by the contribution: "*They were listened to*". Marine designation activities (including MCZ) are also viewed as effective, mostly because the designation took place so the respondents knew about the outcome and how it reflected their contribution. The overall picture presented in these data is that direct participation is viewed as a more effective process than participation mediated through others. When engaging elected representatives, the larger the scale of governance, the less effective the outcome and the less likely the participant is made aware of it. This has implications for the current legislative situation in which the right to participate in environmental decision-making is mediated by NGOs.

4.2.4.3. Empowerment in marine environmental decision-making

To understand marine citizens' locus of control, respondents were asked who they believe is empowered to have influence over marine policy (Figure 4.7). Environmental organisations were considered to be the most involved in marine and coastal decision-making and individuals the least. All levels of government and aquatic recreation organisations were considered to be somewhat to fairly involved. The data mirror the legislated role of NGOs to act in this arena, as stipulated by the Aarhus Convention (United Nations Economic Commission for Europe, 1998).

I wondered if perceptions about empowerment in marine decision-making might be influenced by respondents' scale of place identity, for example people with

local scale identity might feel local residents are more empowered to have action. With chi-squared tests I compared the perceptions of empowerment with a global:local place identity ratio, previously shown to be relevant in environmental attitudes (Devine-Wright, 2013) and significantly associated with marine citizenship score (see 6.2.3). However no significant relationship was found, suggesting that perception of governance power isn't influenced by scale of place identity.
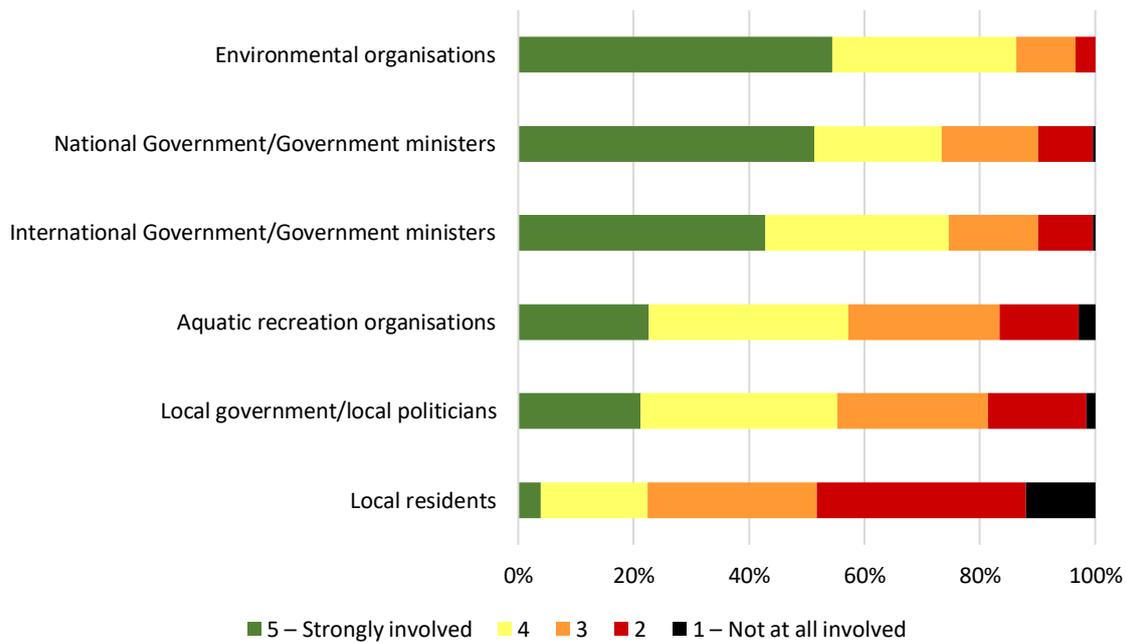
Figure 4.7 Respondents were asked "To what extent do you think each of the following are involved in marine and coastal decision-making?". Chart shows Likert score for each category on a 5-point scale from not at all involved (1) to strongly involved (5).

Rather than through identity characteristics, I wondered if the sense of empowerment could be related to personal experience in participation. I ran a Mann-Whitney U test to determine if there were differences in Likert score for each level of marine governance (Figure 4.7) between respondents who had and hadn't participated in a marine decision-making process. Distributions of the Likert scores for the two groups were similar, as assessed by visual inspection. Median governance scores were not statistically significantly different between those who had and hadn't participated in marine decision-making, with the exception of the role of aquatic organisations, $U = 8895$, $z = 2.021$, $p = 0.043$. (Exclusion of the 'don't know' responses removed the significance of the finding suggesting this was the only difference in distribution.)

A further possibility I considered was that sense of empowerment could relate to how effective the experience of participation in marine decision-making is perceived. This experience was investigated qualitatively through the online survey. Where outcomes were described, these were classified as positive impact (n=29); no impact (n=18); or unknown impact (n=14); where impact was a perception that the contribution was taken into account and participation was worthwhile, even if the outcome of the exercise was not in line with how the respondent would want it to be. Association between positive or no impact from participation in marine decision-making with each level of governance was examined by Mann-Whitney U test (Table 4.9). At the level of local residents the test was significant: $U = 399$, $z = 3.198$, $p = 0.001$. As the median score is higher for the *Positive* group, this test result suggests that perceiving participation to have some impact on marine decision-making increases perceptions of local resident empowerment in the decision-making process.

Table 4.9 Median distribution figures for Likert responses to survey question asking marine citizens to what extent they believed each organisation or governance level was involved in marine decision-making. 0=don't know, 1=not involved at all, 5=very involved. Responses grouped according to whether or not respondent's participation in marine decision-making was considered to have had no impact or a positive impact. Mann-Whitney U test performed to examine significant difference between participation experiences. *Significant test result.

To what extent is each group involved in marine decision-making	Outcome of participation in decision-making			
	No impact	Positive	Total	Asymptotic sig.
Local residents	2	3	3	.001*
Local government/local politicians	3	4	4	.191
National Government/Government ministers	5	5	5	.080
International Government/Government ministers	5	4	5	.169
Environmental organisations	4	5	4	.104
Aquatic recreation organisations	3	4	3.5	.199

Younger aged interviewees (~20-45) and those who had connections with the processes of policy-making through their work discussed empowerment in their interviews. Interviewees believed individual and collective, grassroots action are both effective and necessary for policy change. For example:

"*It's hugely important that people at grassroots level have a voice, and the voice is then listened to, and it's added to, and the momentum continues, because then the politicians have to listen.*" (Simone)

And:

> "*If you could change the policy then that is the quickest way to make a change. But you've kind of got to have people on-side to do that...The policy's not going to change unless people want it to change.*" (David)

Despite direct participation being viewed as more effective (see 4.2.4.2), interviewees nonetheless saw an important role for NGO/marine groups as important for achieving policy change: "*I think that the NGOs…have an effect… they're one of the best ways for the people who care*" (David); "*I don't think [marine policy] is effective at all. I think that's why groups like that, or us, and all the other groups are very important.*" (Simone). By enhancing social capital via moral and logistical support, marine groups support people to create change: "*Doing things in groups is easier, easier to promote, and just out of support*" (Sarah).

There was a real sense of positivity about the power of collective action in effecting change: "*[online petition sites] had a lot of lobbying success with the huge multi-nationals and things, so I think it's the most exciting time…since the printing press! For…global citizenship, finding other like-minded people and forcing governments to effect change.*" (Clare). This sense of empowerment through collective engagement acts as an enabler for individual action. Acting to engage others as a form of marine citizenship (Section 4.2.2.3) can be seen as a starting point for their citizenship journeys, and an important goal:

> "*They start asking well how can we help. Because that's the worst thing, if you give someone an experience and you don't give them the tools to at least explore to go and see what they can do and how they can help. So it really is about setting them on, we're the start of their journey, just the very incentive part; that they didn't even know they wanted yet.*" (Elizabeth).

4.2.4.4. Public participation legislation awareness

There is an international legal framework on public participation in environmental decision-making, which is primarily laid out in the Aarhus Convention (United Nations Economic Commission for Europe, 1998), to which the UK is a party. This Convention has three pillars: access to environmental information, public participation in environmental decision-making, and access

to environmental justice. Given the legislative right to participate in environmental matters, I wanted to understand whether marine citizens had an awareness of this or related EU legislation pertaining to the first two pillars of the Aarhus Convention, i.e. environmental information (*Directive 2003/4/EC,* 2003) and/or participation (*Directive 2003/35/EC,* 2003) and their domestic implementation. Survey respondents were asked: "*Are you aware of any international/EU/national legislation which promotes the processes of citizenship and public participation in environmental and marine decision-making? Please describe what you are aware of?"* and an open text box was provided. 28 individual pieces of legislation/policy/environmental designations were cited, largely without commentary, at a range of levels from UK to EU and international, by 38 respondents (Table 4.10), 26 of whom had a marine or environment/general science degree, and 15 of whom currently or had worked professionally in a marine or environmental field.

Table 4.10 Awareness of environmental public participation legislation and policy in a population of active marine citizens.

Legislation/Policy	No. of references	Nature of public participation
Marine and Coastal Access Act/Marine Conservation Zones (MCZs)	21	Marine planning MCZ consultation
Aarhus Convention (related EU Directives)	4 (2)	Public access to environmental information, justice, and participation in decision-making
UNESCO	3	Involvement of local communities
UK planning law	3	Consultation requirement
Environmental Impact Assessment	1	Consultation
Strategic Environmental Assessment	2	Consultation
SUSCOD	1	Integrated coastal zone management (arguable about how far into the public this reaches)
RIO Declaration	1	Participation of citizens concerned
18 environmental policies	38	Related to environmental protection or conservation

The majority of cited legislation related to environmental protection or quality and not public participation. One respondent cited numerous pieces of legislation, reflecting a relevant professional experience. The *Marine and Coastal Access Act 2009*, which contains reference to public participation in marine planning activities, was cited by 21 respondents, typically in the context of marine conservation zone (MCZ) designation. This was the most highly cited piece of legislation, possibly a reflection of the relatively recent consultation processes around MCZ designation.

Of those who didn't cite policies but expressed a sense of understanding about this right, seven respondents referred directly to consultation, indicating that this is the most recognised form of public participation. Indeed one respondent said: "*all* [policies] *state requirements for consultation with stakeholders, wide dissemination, but in reality most are unclear about who they define as 'public' and 'stakeholder' and at what stage and how they should feed in*". 74 of the 280 respondents left this question blank; of whom 28.4% (n=21) said they had participated in environmental decision-making. 131 respondents stated they were aware of no such legislation at all, of which 17.6% (n=23) said they had participated. Of the 75 who did state awareness (regardless of whether it was public participation related or not) 48.0% (n=36) stated they had participated. Questions therefore emerge: does a public awareness of legislative right to participate in environmental decision-making promote increased participation; or does knowledge of legislation increase via participation? One respondent felt lack of knowledge prevented participation: "*As a diver, I see a number of things that concern me and other members of the diving club I belong to. But I don't know who to voice these concerns with.*"

4.2.4.5.   Environmental legal redress

In considering the right to access environmental justice, survey respondents were asked "*If you are not happy with an environmental decision from a regulatory body and/or law or regulation, which avenues are available to you for legal redress? Please also describe if you have ever used one, or how else you can raise your concerns. If you don't know, please state so.*" 94 of the 280 respondents said they outright didn't know, after exclusion of those who said they didn't know then proceeded to suggest an approach. 69 respondents left the question blank; one gave an answer unrelated to the question; one felt the question was too broad. The remaining 115 respondents provided a broad set of answers which varied from guesses to relating prior or ongoing experience in environmental redress (Table 4.11).

Table 4.11 Means of seeking environmental redress proposed by a sample of active marine citizens. (n=115)

Code	No. of references/ respondents	Example data
Elected officials/government bodies (Local, devolved administration, national, EU)	64	"I expect one can write to ones MP or Minister in charge of a department but would not hold out much chance of success" "Contact and write comments to local council if plans open for viewing. Contact local MP"
Campaign (Petitions, protest, write letters, lobby, social media, traditional media)	38	"I can create a petition for my local councils or to be reviewed in parliament." "Media cover, signing petitions, organising Public meetings."
Regulatory body	15	"The options available depend on the regulatory body / law involved." "Regulators normally have a public complaints system."
Legal advice/action	13	"During our period of fighting the raw sewage proposal I was aware that legal support would be available if the decision went against us." "Judicial review. Currently in the process."
Participation in decision making	6	"Have used all the steps in planning processes up to and including speaking at a public enquiry - at local authority level and at national infrastructure (Development Consent Order) level"
NGO: **Local**	15	"I haven't had to, but if I did my first point of contact would be the most active NGOs in the region, especially if I knew they had already been involved in the consultation process"
National	16	"Probably look to act through organization, e.g. green peace"
International	1	"Local, national; and international environmental organisations"

Survey respondents' first port of call was to contact their elected officials or government bodies at a range of scales. This was particularly so for those who felt they didn't really know how to go about seeking legal redress. Typically this was writing to elected officials or participating in local government level planning processes. Their next choice was to campaign against a decision utilising social media and networks, online petition sites, protests, and general lobbying activities to promote change in the position. Respondents also recognised the responsibilities of regulatory bodies (15); legal routes through court of appeal or judicial review (13); and planning and development processes, participating in these from the outset (6).

Recognising the unique role of NGOs in the environmental justice process (which is stipulated in the Aarhus convention), numerous respondents made reference to them at a range of scales, though particularly locally and nationally. It is clear NGOs are recognised for taking on environmental legal battles on behalf of the public, and acting as strong lobbyists on environmental issues

more generally. For example: "*Surfers Against Sewage…they do quite well with having a loud voice about things… NGOs are really, really good. And they do campaign and they do have a voice.*" (Sarah), adding "*I would say they would represent people…How else would they be represented?*".

Criticisms about NGOs, or their position in policy-making, related to funding instability: "*they just rely on these funding streams. I think it's a shame. I think it should be a core job.*" (Sarah); and problems with working together, potentially due to funding competition "*the sad thing about some NGOs or charities or marine organisations…it can be pretty siloed. If they were all working together they might have a lot more impact… they always are going to be pitted against each other.*" (Clare). The role of the NGO was also expressed as being bidirectional, facing both government and the general public: "*I think it's important for the NGOs to kind of focus on communicating a message, as well as communicating to the government to try and change policy*" (David), offering a platform for public engagement in campaigns, the size of the NGO influencing both funding and reach. This narrative highlights some of the challenges faced by NGOs as the mediators of public participation in environmental matters.

Though barriers to environmental legal redress was not specifically asked for within the question, 16 survey respondents nonetheless brought up a range of barriers. This included practical barriers such as cost of legal representation, and redress being available only to those directly affected by a decision or environmental event. There was also general cynical criticism of existing processes as being limited for individuals, and campaign outputs being ignored by decision-makers, connecting with beliefs around citizen empowerment: "*As with most decisions made by government and their regulatory bodies the views and ideas of the majority of the population are of little interest.*"

In all, respondents did not seem surprised that there are avenues for environmental redress though most did not know what they might be and few had been participatory beyond protest/campaign actions. The role of elected officials and, to a lesser extent, NGOs were paramount as vehicles of accessing environmental justice.

4.3.   DISCUSSION

This first results chapter is concerned with findings that relate to what marine citizenship is, the extrinsic variables that influence marine citizenship, and the public right to shape the ocean-society relationship through participation in marine environmental decision making, and this discussion focuses solely on the results presented in this chapter. I set out to answer the research questions, a) *What is marine citizenship and who participates it?* And b) *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?* The results presented above, when drawn together, relate in one way or another to institutional policy, as understood to be a broad, societal framework which influences our understanding of marine citizenship as a concept, the practice of it, and its role in promoting good marine environmental health.

This discussion, together with those from Chapters Five and Six, are synthesised in Chapter Seven to provide a full picture of this concept of marine citizenship – its nature, origins, and influences are considered holistically. The findings I have presented in this chapter have been predominantly emergent through the qualitative data, with some quantitative findings about pro-marine environmental behaviours and demographics. As largely inductive results, these have presented themselves in such a way as to be usefully examined through a lens of citizenship theory, concerned with rights and responsibilities. Though not actively researched, the data has also produced a compelling theme around knowledge which provokes criticism of the prevailing practise of engaging the public as marine citizens through awareness raising and environmental education delivery, to promote active participation in pro-marine environmental behaviours. The key findings presented in this chapter are summarised in Figure 4.8.

Figure 4.8 Key findings presented in this chapter – how marine citizenship relates to policy.

In this discussion I move the debate on marine citizenship forwards, beyond simplistic understandings of who marine citizens are and how they make choices, to a more complex interpretation of marine citizenship as civic participation. Previous research into marine citizenship has argued that it includes both rights and responsibilities, in a classical understanding of citizenship (McKinley and Fletcher, 2010, 2012), which I agree with. Responsibilities have been well fleshed out in so far as they incorporate pro-marine environmental behaviours, but rights have received much less attention

and typically have not been defined. Marine practitioners engaged in promoting marine citizenship have not frequently acknowledged rights (McKinley and Fletcher, 2010). With a strong focus on the rights aspect of marine citizenship, therefore, this chapter contributes to a significant gap in the literature.

I begin by describing the marine citizens of the study, then proceed to examine what my findings have contributed to our understanding of marine citizenship as participation in pro-marine environmental behaviour and implications for knowledge-deficit approaches to garnering public interest in marine environmental issues. I then examine this new understanding through a citizenship lens of responsibilities and rights. This includes a look at marine citizenship rights in the context of current legislation on public participation in environmental decision-making.

4.3.1. THE MARINE CITIZEN

Whilst there was no significant difference in the marine citizenship score between genders, and notwithstanding any potential bias in the sample due to willingness to participate, the marine citizens participating in this research reflected, as a group, the demographics common to more formal volunteering. Civic participation is higher in people with higher education, both as a consequence of their education and related to their family backgrounds (Egerton, 2002). Women are more engaged in ethical consumerism and pro-environmental behaviours (Kwon *et al.*, 2019; Riley *et al.*, 2012; Stern *et al.*, 1999) and more participatory as both formal and informal volunteers (Egerton and Mullan, 2008). This intersects with education, with more highly educated women being more participatory than equivalently educated men (Egerton, 2002), and lower educated women being more participatory in informal volunteering (Egerton and Mullan, 2008). Retirees spend more time volunteering, and this is related more to age than available time, most notably for over 50s (Egerton and Mullan, 2008; Kwon *et al.*, 2019).

It was interesting that though older people were overrepresented in the population, the amount of active marine citizenship they participated in reduced with increasing age. In some cases this may be connected with the perception of marine citizenship as being predominantly an outdoor activity. Wiernik *et al.* (2013) found older people participated in differentiated pro-environmental

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behaviours (PEBs), favouring proactive nature protection and outdoors actions. The implication of this might be that health and mobility become more of a barrier to participation, and that other forms of citizenship might be less considered. However, this finding could also be a feature of nationality as, for example, UK seniors have been found to be less engaged in ethical consumerism than those in other nations (Riley *et al.*, 2012; Sánchez *et al.*, 2016).

Volunteering is more common in people who come from a professional background, due not to the mobility or type of professionalization, but something around socialisation as children of professionals (Egerton, 2002). Many marine citizens talked about the formative experiences of their childhood in terms of developing a positive relationship with the sea, but there may also be unexplored familial socialisation relating to civic participation. In previous research, I raised the possibility that environmental professionals who are able to make a choice to enter that field, may in many cases do so as an act of civic participation in response to their environmental values (Buchan and Yates, 2019). This notion was supported by the data in this research, extending citizenship from private activities, to the public and economic activities, and has the potential to be implicated in familial influences of professional households.

In this research the overrepresentation of women, educated people, environmental professionals and >50s is, therefore, unsurprising if one views marine citizenship as a form of civic participation – a case that is strongly made in this chapter. Within this framework, our interest should turn to why the choice is made to commit civic participatory time to the marine environment at the expense of time that could be given to other causes. The discussion in Chapter Five: People reflects on the values and identities that contribute to this decision.

4.3.2. PRO-MARINE ENVIRONMENTAL BEHAVIOURS AND ENVIRONMENTAL EDUCATION

In the environmental/marine/ocean citizenship and related literature, environmental citizenship is predominantly viewed as an expression of responsibility towards the marine environment via performance of pro-environmental behaviours which have a direct positive action upon the environment (McKinley and Fletcher, 2010, 2012; Parsons *et al.*, 2014; Rees *et*

al., 2013), in some cases arguing that individual behaviours and choices are the primary cause of environmental impacts (Potts *et al.*, 2012). Acknowledging the influence of individual actions is an important part of empowering individuals and creating collective societal change and is arguably the normative narrative.

This research showed that marine citizens typically participated in a wide range of marine citizenship activities. In common with other forms of citizenship and volunteering, the more time, cost or complexity of an action, the fewer marine citizens participated in it (Egerton and Mullan, 2008). Despite strong desire to change behaviours, barriers presented were typical to general volunteering, being primarily logistical such as time, cost, accessibility, geography, health and competing responsibilities (Buchan, 2016; Egerton and Mullan, 2008). Marine citizens recognised pro-marine environment behaviours (PMEBs), such as clean-up, consumer choices, environmental action, and lifestyle and recreational behaviours as being part of marine citizenship. Such actions strongly align with those discussed as marine citizenship in other literature (Gelcich *et al.*, 2014; McKinley and Fletcher, 2012; Parsons *et al.*, 2014) indicating some consensus as to what actions are understood as marine citizenship. However, respondents additionally referred to civic participation, learning, and public engagement as citizenship actions, indicating that PMEBs alone are not a complete representation of marine citizenship.

Knowledge features widely in the literature as a promoter of marine or environmental citizenship (Fletcher and Potts, 2007; Guest *et al.*, 2015; Hawthorne and Alabaster, 1999; Heck *et al.*, 2016; McKinley and Fletcher, 2010, 2012; Potts *et al.*, 2012; Rees *et al.*, 2013 *inter alia*). Marine citizens tended to believe that knowledge is a driver of marine citizenship in other people – exemplified by participation in public engagement and education activities – however they themselves did not refer much to knowledge when relating their own motivation for marine citizenship nor was it often cited as a barrier to participation. The population of marine citizens in this study were more highly educated than the UK average and therefore may have sufficient knowledge for it to not be a barrier, as compared with other sections of the public, and may also value knowledge more highly because of their own education. Certainly, learning was viewed as an act of citizenship itself, possibly self-educating out of interest. As a group, marine citizens valued knowledge and

education highly, but the ways in which knowledge was valued were more diverse than simplistic knowledge/information deficit framing. Lifelong learning can be understood as a political citizenship response to an increasingly technocratic and de-collectivised society (Freire, 1972; Martin, 2003), and promotes inclusive, pluralistic, reflexive, and active citizenship (Johnston, 1999).

One of the key motivators for citizen science and recording projects was to produce scientific knowledge, viewed as a particularly legitimate way to inform policy-making. In this way scientific knowledge was privileged over local knowledge. (Though Jefferson *et al.* (2014) found that the general public didn't particularly view scientific opinion as a strong indicator of marine environmental health.) This is normative within environmental science, with even the more participatory marine designating processes privileging scientific knowledge (e.g. Marine Conservation Zones: Pieraccini, 2015). Practitioners have expressed concerns about how contributions to marine policy-making are "*quality assured*" (Rees *et al.*, 2013), and citizen science debates question the scientific rigour of the process (e.g. Bird, 1987; Bonter and Cooper, 2012; Garcia-Soto *et al.*, 2017). However, those more deeply engaged in local scale marine groups, in particular, sought to champion local knowledge and facilitate its incorporation into decision-making, and indeed in Environmental Impact Assessment law participation must not be predetermined by the views of knowledge quality held by those in authority (Steele, 2001). It has been argued that integrating local and scientific knowledge produces better marine governance which benefits from the cultural environmental knowledge held by communities (Foxwell-Norton, 2013) and the post-normal science approach advocates utilising a range of knowledges to produce better solutions (Funtowicz, S. O. and Ravetz, 1993).

Additionally, all kinds of knowledge exchange were seen as vital for marine environmental health, which permeated public engagement motivation and method, and characterised one of the key benefits of the local marine group. Knowledge exchange within the marine group promoted legitimacy of the group externally, and empowered group members through learning, sharing of opportunities, and social experience. Groups also had greater capacity for public engagement than most individual marine citizens, and environmental education was a strong component of such activities. Public engagement was

viewed by participants both as knowledge-deficit framed towards promoting PEBs, and as promoting the public's informed civic participation.

These findings provoke deeper reflection on the role of knowledge in marine citizenship, and shift the perception of marine citizens as performing PEBs, to one of active civic participants, engaging the wider public to promote policy and system change. Marine citizens were engaged in citizenship more broadly than marine issues, and marine citizenship actions additionally cited by respondents represented deep citizenship values of stewardship, personal responsibility, marine conscience, and even employment as an act of moral duty towards society and the environment.

4.3.3. EXPRESSION OF MARINE CITIZENSHIP RESPONSIBILITY

In the previous section I have discussed the nature of marine pro-environmental behaviours (PEBs) and how their dominance within understandings of marine citizenship may represent a too-narrow view. In this section I advance the argument that responsibility as only PEBs is a 'thin' form of citizenship and that marine citizenship should be viewed as incorporating more 'thick' actions – terminology chosen to mirror that within environmental law and citizenship theory (Black, 2000; Faulks, 2000; Pieraccini, 2015). It reflects understandings of active citizenship as incorporating civil society, community and political participation (Hoskins, B. L. and Mascherini, 2009) and is broader than individualistic notions of behaviour change. Reframing marine citizenship to situate it within general citizenship understandings broadens the expertise and evidence available to support understanding of marine citizenship, and reflects marine citizenship as part of real life lived.

Whilst experts in the marine environmental sector have expressed marine citizenship as PEBs and consumer choices (McKinley, 2010; McKinley and Fletcher, 2012; Parsons *et al.*, 2014; Rees *et al.*, 2013), Faulks (2000) describes three components to understanding citizenship: the extent (who participates); the content (what rights and responsibilities); and the depth of citizenship (thin or thick). The marine citizens in this research, clearly view all people as should-be marine citizens, reflecting their own strong sense of citizenship responsibility directed towards the marine environment, not limited to state territorial boundaries as is typically considered important in citizenship

(Faulks, 2000), and expressed as a fundamental part of life. Marine citizens thus exhibit an implicit citizenship understanding that aligns with more post-modern citizenship theories such as Dobson's (2003) ecological citizenship which is cosmopolitan and founded on ecological justice, particularly bridging the public-private realms which specifically accommodates public actions such as employment as being acts of citizenship. This global scale citizenship resonates with the strongly held *universalism* value (see 5.2.1). However, as I argue in later chapters, not all marine citizens prioritise this value and there may be less commonly held views of marine citizenship as smaller scale.

As further evidence of a marine citizenship which is 'thicker' than PEBs, marine citizens highly valued education and public engagement as components of active citizenship. Whilst the evidence presented here indicates that education itself does not drive pro-environmental behaviours, nonetheless the commitment to raising social capital on environmental issues is public and comes with personal cost (time, challenging social norms, and the vulnerability of speaking out publicly) and is therefore 'thicker'. (NB. 5.2.2.1 considers the role of conformity in marine citizenship.) Both self-education and public engagement were viewed as a means of creating an informed public (including themselves) which participates in civic matters and political action, and demonstrate that it is the social capital of marine citizenship which is most valued for effecting marine environmental change. Such factors are being recognised in wider citizenship conversations, e.g. the European Commission development of a measure for active citizenship which highlights political literacy (Hoskins, B., 2006; Hoskins, B. L. and Mascherini, 2009).

The findings presented expose the narrowness of the view of marine citizenship held to date in the literature and by marine environmental professionals, where only a portion of the capacity of individuals to act as marine citizens is being acknowledged as marine citizenship. Marine citizenship has rightly been viewed as a policy measure (McKinley and Fletcher, 2010, 2012). Applying the Arnstein (1969) ladder of participation, pro-environmental behaviours (PEBs) could be considered as at the 'therapy' level of participation, in which behaviour must be corrected. This framing misses much of the motivation and identity that produces a sense of duty, and support for collective action. The marine citizen

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participants in this research however, have revealed a much deeper understanding of their own marine citizenship.

'Thick' marine citizenship extends into the decision-making sphere, legitimising citizens' knowledge, values and experiences, and equipping them with agency as influencers of marine environmental health, indirectly through political or social action, as well as directly through PEBs. The authority conveyed on to the local marine groups indicate a belief in a 'partnership' level of participation where the marine group is seen by citizens as having authority in procedure, and by power-holders as a legitimate form of public participation.

Marine citizens described the will to participate as inspired by qualities of the sea and the benefits it confers on people rather than more general social responsibility, yet the evidence was that marine citizens were highly engaged in more general citizenship. Having concrete knowledge of how to participate has been found to be a more significant predictor of environmentally responsible behaviour than the abstract knowledge typically used to inspire an interest in the sea (Hawthorne and Alabaster, 1999). One could go further and argue that a useful policy measure to enable marine citizenship would be to better equip the public with political literacy and empower civic participation both generally and within the marine sector.

4.3.4. MARINE ENVIRONMENTAL RIGHTS – MARINE CITIZENSHIP THROUGH PARTICIPATION IN DECISION-MAKING

I have so far in this discussion argued for a significant broadening of the understanding of marine citizenship responsibilities beyond individual pro-environmental behaviours into 'thicker' citizenship actions, particularly civic participation. In citizenship theory one must also consider the rights conferred upon citizens and how these can be exercised (Dobson, 2003; Faulks, 2000; McKinley and Fletcher, 2010). The implicit understanding of marine citizenship expressed by marine citizens themselves related most strikingly to empowerment of individuals to participate and be involved in informed environmental decision-making in a range of ways, from direct participation to grassroots collective action. In this way it can be understood that marine citizens have both a sense of and desire for procedural environmental rights, insofar as they typically relate to access to information, participation and justice

in environmental matters (Peters, 2018). Despite being active proponents of marine citizenship as civic participation, marine citizens did not perceive individuals as having much power in marine environmental decision-making.

Procedural environmental rights are provided, to greater or lesser extent, through a range of legislation, as described in Chapter Two, but particularly via the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (United Nations Economic Commission for Europe, 1998), which is the basis for much of EU environmental participation law (Peters, 2015). Despite an implicit sense of environmental rights, few marine citizens were informed about such legislation, nor the extent to which environmental rights are legally conferred. This can be contrasted with a strong awareness of legislation, from national to international scale, relating to marine conservation and substantive environmental quality. Given the high proportions of higher education and professional experience in respondents citing legislation, this knowledge may have been acquired through formal means. Marine citizens may not have substantial access to legislative information informally, and students and professionals may not tend to learn about legislation incorporating procedural environmental rights. How significant an impact this has on ability to participate in environmental decision-making is difficult to say from this data, or from the literature, but logically this can be viewed as disempowering to the individual since, without knowledge, access to this right is entirely in the hands of decision-makers.

Given that the Aarhus Convention has been criticised as focusing on direct participation only for the public concerned (Lee and Abbot, 2003; Nadal, 2008) and developers are responsible for producing appropriate information for the public (EC, 2003b; Holder, 2006) there is a clear risk that a public uninformed of its rights is unable to be an arbiter of how well these procedures are being performed, nor know how to initiate the judicial review which would enable independent arbitration of environmental procedures. There may be lessons from other areas of law which would shed light on this issue. From a marine citizenship perspective, marine and environmental professionals learning about civic participation in environmental decision-making might produce a shift in the cultural balance between knowledge deficit and public participatory approaches.

The nature of participation in marine environmental decision-making exemplified in this research highlights the risk posed by empowered decision-makers and disempowered citizens. With consultation forming the bulk of participation and no mention of co-production, it's clear that formal participation opportunities typically fall on the *tokenism* rung of the ladder of participation (Arnstein, 1969). This may explain the relatively low levels of positive experience of participation, and the perceived lack of empowerment of individual citizens within decision-making. Indeed such a perception seems realistic. Participatory experiences were viewed more positively when there was a known outcome from the participation (whether or not it tallied with the views of the citizen) and at more local scales of participation. The good news here is that environmental decision-making is predominantly made at a local scale (Lee and Abbot, 2003) so there are opportunities to improve participation satisfaction within current frameworks through increased feedback on outcomes.

A note is needed on the marine conservation zone (MCZ) consultation experiences, which were the most highly cited specific participatory process in this research, though not a legal requirement of the *Marine and Coastal Access Act 2009*. The MCZ designation process was notable for breaking away from the historical designation by statutory bodies, and was purposefully designed to be participatory with stakeholders in order to recognise socio-economic factors as well as ecological, followed by standard public consultation on the recommended sites, which ultimately resulted in a reduced rate of designation (Pieraccini, 2015). In this research, consultation participation was generally considered to have positive outcomes more often than not, though not more effective than petitions or lobbying of MPs, which may relate to depth of proceduralisation. On the one hand, the increased participatory opportunity in the MCZ process may have enabled more people to get involved than typically do in other designation procedures or local scale planning, and the outcomes were visible as designations were recommended or not. However, on the other hand the more participatory part of the process involved only stakeholders, i.e. groups with an interest and not the general citizenry (Lee and Abbot, 2003),which limits the public involved to those who are already actively connected to a more formalised environmental institution. This has been shown to reinforce divides between groups, language, and culture rather than promote

the consensus called for in 'thick' proceduralisation (Black, 2000; Pieraccini, 2015), and which may lead to less satisfactory outcomes for participants and less inclination to participate in future (Pirk, 2002).

In terms of access to environmental justice, NGO's were noted to be an effective medium, according with previous research (Gelcich *et al.*, 2014; Potts *et al.*, 2012) and the specific participatory rights conferred on environmental NGOs in the Aarhus Convention (Nadal, 2008). However marine citizens most commonly reverted to UK normative political procedures or contacting elected representatives, indicating little awareness of the specific rights afforded in relation to environmental justice. Additionally, with the exception of those who had participated in specific planning procedures and the MCZ process, environmental impact was not described by marine citizens in tangible terms of specific developments, but more in relation to the general relationship between humans and the sea. The Aarhus Convention has not yet been examined for the extent of the public concerned in relation to larger scale impacts such as climate change or marine environmental health (Peters, 2015). There is in this research a clear sense that the broader environmental impacts are not being adequately mitigated in the development approach currently legislated for.

It seems the perceptions of marine citizens are that as individuals they are not empowered to participate in marine decision-making; that access to justice is largely costly and out of reach; and that participation is often tokenistic. These findings therefore support arguments made that there is a lack of empowerment in environmental justice (Nadal, 2008). It is perhaps de facto that ignorance of the legislation conveying environmental rights, and participatory experience that largely fails to communicate outcomes, results in marine citizens not being able to strongly convey what structural changes might improve marine environmental justice, despite the clear sense that there is environmental injustice.

4.4.   CONCLUSION

In this chapter, I set out to examine what marine citizenship looks like in practice, and how it presents itself in society and in a policy context. A full understanding of the role individuals can play in promoting marine environmental health must include an examination of what marine citizenship actually is and how it is supported in society. I asked two research questions, a)

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What is marine citizenship and who participates it? And b) *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?* To answer these questions I began by challenging the concept of marine citizenship as a set of knowledge-driven pro-environmental behaviours aimed at improving the health of the marine environment. Though highlighting that knowledge and learning are important both for marine citizens and as an act of marine citizenship, I also demonstrated that marine citizenship constitutes more than personal behaviours and knowledge.

The evidence presented indicates that marine citizenship is a form of citizenship and that the citizenship lens has not previously been rigorously applied to this concept. By recognising marine citizenship as not just a set of pro-environmental behaviours, but instead an exercising of rights and responsibilities, it becomes clear that more than knowledge is required to promote marine citizenship. At present the demographics of marine citizens conform to wider voluntary activity and environmental participation, indicating that there is work to be done to foster a wider culture of marine citizenship. Whilst there are numerous factors at work in this, including practical barriers, it may be exacerbated by the situation of marine citizenship in a normative environmental science framework rather than alongside other forms of civic participation, moving from a 'thin' to a 'thick' understanding of the concept.

In taking a more sociological than ecological view of marine citizenship, it is clear that research to date has not addressed the rights inherent in that view, particularly those in line with the Aarhus Convention affording access to environmental information and justice, and public participation in decision-making and justice. In this discussion I have raised the question of what the implications might be of a marine citizen population largely unaware of their formal environmental participation rights and whether this needs to be addressed to promote thicker marine citizenship. Where there is public participation in marine environmental decision-making, this can be improved with deeper engagement procedure and improved communication of outcomes. Devolving decisions down to local communities helps connect the public to the issue.

In the next two chapters, I move the focus of marine citizenship on to individuals and argue that incorporation of marine into general citizenship is an expression of the values and identities people hold, and the unique relationship humans have with the sea as a place. I investigate these variables both as drivers of pro-marine environmental behaviours and as motivators for marine citizenship beginning with the intrinsic factors that promote individual motivation. In Chapter Seven: Synthesis I will bring these aspects back together again to give an holistic overview of marine citizenship.

5. CHAPTER FIVE: PEOPLE

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5.1.   INTRODUCTION

Chapter Four: Citizenship considered the extrinsic factors influencing marine citizenship as a set of actions performed. It looked at the institutional role of marine groups and projects in facilitating marine citizenship, the legislative and policy landscape of public participation in environmental matters, as understood by marine citizens, and the role and understanding of knowledge in marine citizenship. This chapter shifts the analysis to intrinsic factors related to marine citizenship. It responds to the research question: *How do motivational and value-based factors influence marine citizenship choices?*

To answer this research question, the results from online survey and interviews in this chapter are organised into themes that examine the personalities of marine citizens, the values, attitudes and identities they hold, and emotional responses they have towards the sea and marine issues. In 2.4.2 I provide an overview of the literature indicating that these psychological factors connect with pro-environmental behaviours (PEBs). Different measures of environmental identity are shown to promote PEBs, some of the basic human values have been shown to be common or uncommon in those who engage in PEBs, and environmental attitudes and concerns are well-researched. It is useful therefore to examine the influence of these factors more specifically on marine citizenship participation. Both commonalities and diversity of experience are evidenced within this chapter, as one aim of this work is to evidence whether or not people who deviate from the typical characteristics identified in environmental citizens in other research can also be motivated to marine citizenship.

Developing further our understanding of how innate values influence pro-environmental behaviour, I then provide an extensive examination of the distribution of Schwartz's (2012) basic human values, both using the standard portrait values questionnaire and through qualitative analysis of interviews. In my research I look at all ten values to interrogate the ways in which they relate to marine citizenship and uncover evidence that though universalism/biospheric value is typically considered to be most important for pro-environmental behaviour (de Groot and Steg, 2010; Katz-Gerro *et al.*, 2017; Prati *et al.*, 2018), there are also qualitative connections between other values and marine citizens' relationship with the sea and marine citizenship.

The chapter then moves on to the environmental attitudes and identity of this population of marine citizens, drawing on Clayton's (2003) Environmental Identity theory, which is found to be more important for participation in marine citizenship actions than the environmental attitudes investigated, though climate change concern was also significant.

As well as these directions of research, which were purposefully tested in the research design, a number of novel themes emerged within the data and are discussed in the final results sections. These relate to emotional response to the sea and marine issues, and the social and formative experiences that connect with the act of marine citizenship. These findings demonstrate that marine groups and projects hold social capital that benefits marine citizens in ways they would not experience when participating in actions alone. They also show that there are key events or experiences that help people to develop emotional connection to the marine environment, underpinning the desire to protect or preserve.

Together, the findings in this chapter create a picture of the person who is an active citizen. They add to the body of environmental psychology research, by relating marine citizenship as a specific activity/identity to established psychological frameworks. They also add to the research on environmental citizenship by broadening out from narrow understandings of the general values typically associated with it, and adding contextual depth to the more complex relationship between marine citizenship and basic values. Collectively, I argue, the findings suggest that marine citizens hold a kind of marine identity that allows them to relate to the marine environment, and incorporate it into the strong sense of citizenship duty which was outlined in 4.2.2. In Chapter Six: Place, the specific relationship with the sea is probed to add the final piece of the puzzle and understand why the sea has particular power to drive environmental citizenship.

As in Chapter 4, both quantitative survey and qualitative survey/interview data are analysed in this chapter. Interviewees are given identifying pseudonyms to assist with individual narrative across the results chapters; quotations from survey respondents are not. (See Table 4.1 for basic interviewee details, and Appendices 3 and 4 for overview of data from survey and interview samples.)

5.2. RESULTS

5.2.1. BASIC HUMAN VALUES

As discussed in 3.4.1.3, this research incorporated the Schwartz (2012) Basic Human Values theory. The value distribution of this marine citizen population was validated against the theoretical circumplex (Figure 5.1a) by plotting raw mean scores in two-dimensional space using multi-dimensional scaling in SPSS 25 (Figure 5.1b). The relative positions of the values broadly match.
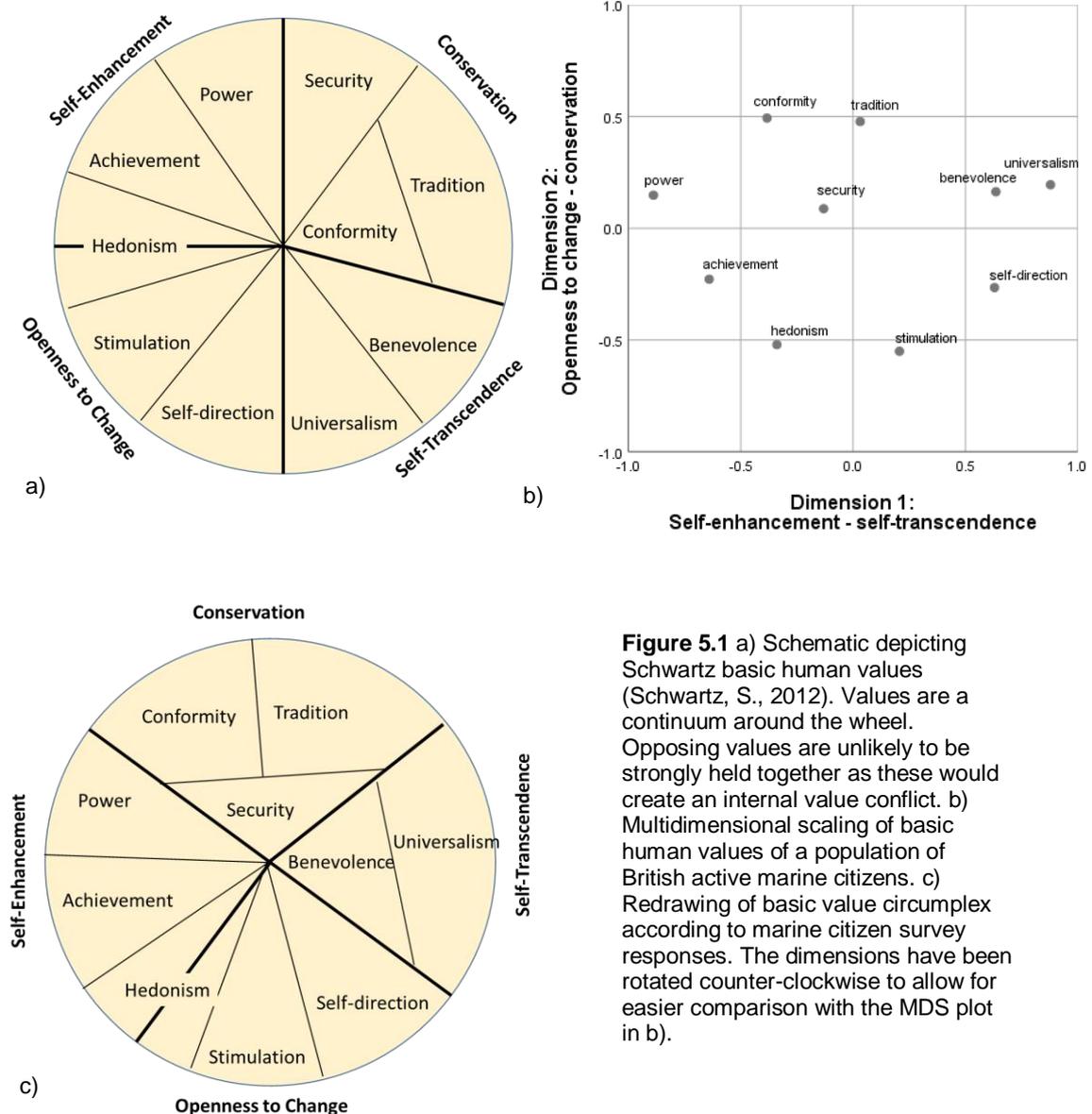
Figure 5.1 a) Schematic depicting Schwartz basic human values (Schwartz, S., 2012). Values are a continuum around the wheel. Opposing values are unlikely to be strongly held together as these would create an internal value conflict. b) Multidimensional scaling of basic human values of a population of British active marine citizens. c) Redrawing of basic value circumplex according to marine citizen survey responses. The dimensions have been rotated counter-clockwise to allow for easier comparison with the MDS plot in b).

Values of *power, security, conformity, tradition, benevolence* and *universalism* all sit above 0.0 on the y axis (Figure 5.1b) which places them positively in the

conservation dimension. This is expected for all except the self-transcendent value *universalism.* This location is rationalised if one considers the contemporary threat to the world's ecosystems and conservation of this being required to provide future sustainability for both humans and the wider ecosystem. Indeed, *universalism* is slightly more conservation-aligned than *benevolence*, a reversal of the standard circumplex, and both are closely situated, suggesting a blurring of the line between these two values. *Security* is particularly centrally situated, only slightly into the conservation-self-enhancement quadrant (Figure 5.1b). This fits a narrative of values aligning in marine citizens to produce a secure future for humans and the world. A redrawing of the circumplex according to these findings is provided (Figure 5.1c).

Using scores centred around an individual's means, Figure 5.2 gives a visual display of the distribution of basic human values in the full survey and case study subset populations. In all cases, the mean values can be seen to 'bulge' around self-transcendent values with highest positive scores for *universalism* first, then *benevolence* and *self-direction*, then *stimulation*. Conversely, self-enhancing values on average score negatively with *power* the lowest. This fits with other investigations of environmental citizenship, which indicate the universalism value to be associated with pro-environmental behaviour. However, the minimum and maximum values indicate that there is nonetheless a broad range of values within this population. Therefore my data suggest that, though common, high self-transcendent values are not pre-requisites for active marine citizenship.

I was interested in whether or not participation in marine groups or citizen science might be related to basic human values. The overall survey population is strongly influenced by the large CoCoast cohort (Figure 5.2d) but some variation in value range and distribution can also be seen within the two marine groups (Figure 5.2b-c).
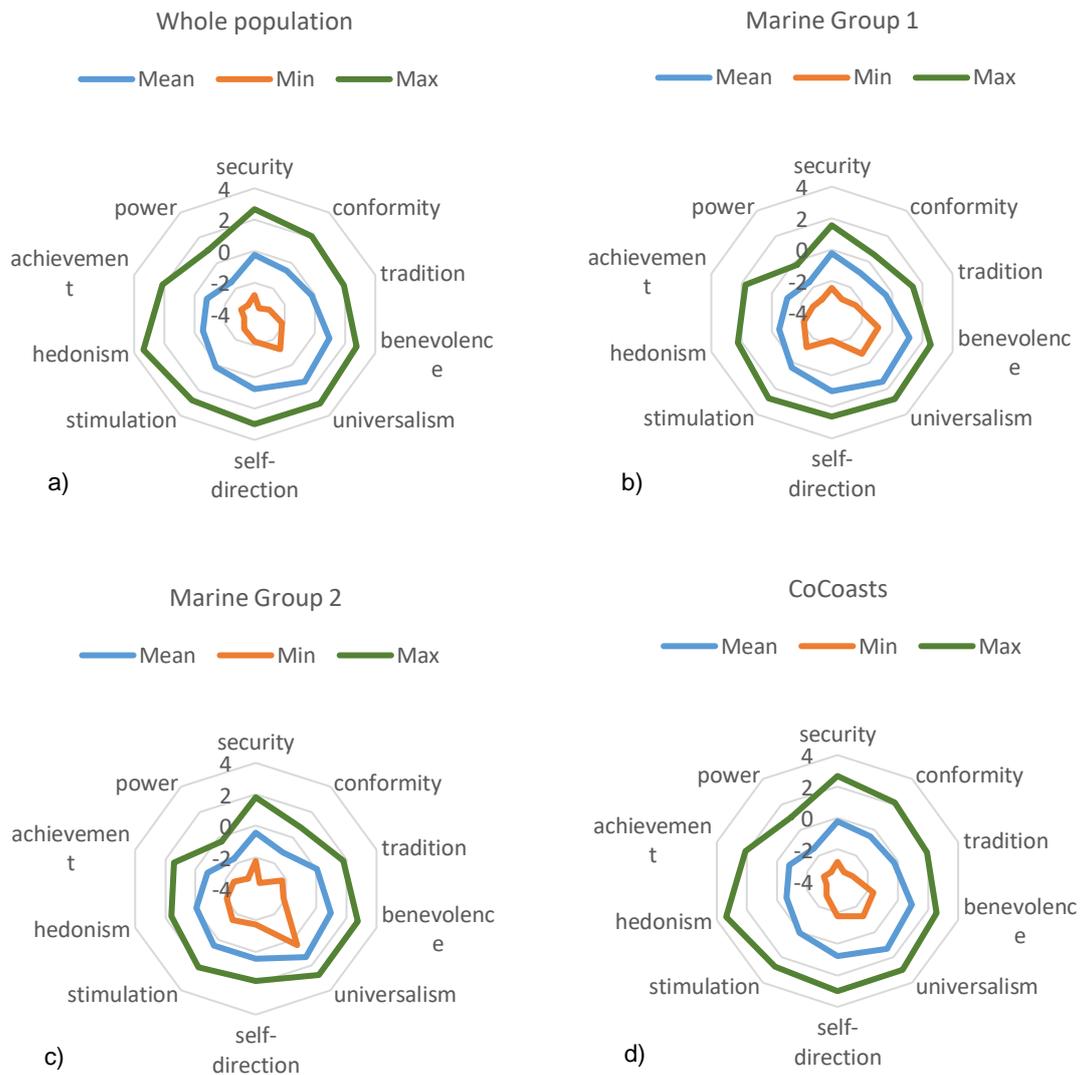
Figure 5.2 Distribution of Schwartz portrait value questionnaire scores (Schwartz, S. H. et al., 2015), centred around respondents' means, for a) survey population; b) Marine Group 1 (n=29); c) Marine Group 2 (n=22); d) Capturing our Coast national citizen science project (CoCoast) (n=225). Values are grouped into dimensions as: conservation (security, conformity, tradition); self-transcendence (benevolence, universalism); openness-to-change (self-direction, stimulation, hedonism); self-enhancement (hedonism, achievement, power). NB. Hedonism bridges two dimensions.

The marine groups showed slightly less range overall, suggesting more like minds have come together. As a sample, MG2 respondents show less range in *universalism*, which may be an association with geographical scale, since MG2 covers a town, the smallest scale in these case studies. MG1 covers a region of a county, and CoCoast is a national project. The second stage of fieldwork purposefully sampled respondents with a broad range of scores across all ten values in order to add context to this picture. This is discussed below in section 5.2.2.

To examine statistically what effect basic human values have upon the depth, or thickness, of marine citizenship actions undertaken by the survey respondents,

a series of regressions were performed for the whole survey population, and on subsets according to case study marine groups or national citizen science project cohort (Table 5.1).

Table 5.1 Linear regression results examining predictive power of basic human values upon marine citizenship score of a population of marine citizens; a subset population of marine citizens engaged in two local marine groups; and a subset population engaged in a national citizen science project. For ease, significant findings are bolded. *p<.05 **p<.001 Underline indicates near-significant finding. NB. It is not possible to run a multiple regression with all ten values.

Value	F (df)	Sig.	Adj. R^2	B
Security	11.454 (1,273)	.001**	0.037	-0.686
Marine Groups	2.826 (1,49)	.099	0.035	-0.943
Citizen Science	8.085 (1,222)	.005**	0.031	-0.600
Conformity	9.139 (1,273)	.003**	0.029	-0.621
Marine Groups	3.379 (1,49)	.072	0.045	-1.038
Citizen Science	3.512 (1,222)	.062	0.011	-0.412
Stimulation	20.486 (1,274)	.000**	0.066	0.863
Marine Groups	3.514 (1,49)	.067	0.048	1.023
Citizen Science	14.946 (1,223)	.000**	0.059	0.769
Power	0.956 (1,274)	.329	0.000	-0.267
Marine Groups	3.850 (1,49)	<u>.055</u>	0.054	1.470
Citizen Science	4.448 (1,223)	.036*	0.015	-0.591

Few of the values showed significance. Across the whole population and within the citizen science group, s*timulation* was a positive predictor of deeper/thicker levels of marine citizenship. However it was not statistically significant in the marine group samples alone. The nature of citizen science may particularly appeal to those who value stimulation from learning and discovery. *Security* was a negative predictor but not in the marine group sample. Marine groups being tied to place may attract members relatively more concerned about security. Within the citizen science group only, *power* was also a negative predictor, but was very near to being a significant positive predictor in the marine groups. Marine groups may attract leaders with stronger power values, or members who are motivated to have authority locally. *Conformity* negatively predicted marine citizenship actions across the whole population, but was less powerful at case study level. *Universalism* was not a predictor of marine citizenship actions.

Performing this same process with marine citizenship intention yields different results (Table 5.2). *Stimulation* is most consistently, positively predictive, accounting for 10.3% in the marine groups, for which it is the only significant value, suggesting the groups offer people 'something to do' and are viewed as

gateway for marine citizenship activity. *Benevolence* and *universalism* are both positively predictive for the whole population of respondents and the citizen science case, likewise *power* is negatively predictive. Once again my data show that while self-transcendent values have importance, these are not the only values that influence marine citizenship actions or intention. The role of stimulation needs further exploration.

Table 5.2 Linear regression results examining predictive power of basic human values upon marine citizenship intention of a population of marine citizens, measure on a seven-point Likert scale; a subset population of marine citizens engaged in two local marine groups; and a subset population engaged in a national citizen science project. Likert data is treated as interval. For ease, significant findings are bolded. *p<.05 **p<.001 NB. It is not possible to run a multiple regression with all ten values.

Value	F (df)	Sig.	Adj. R²	B
Security	4.608 (1,272)	.033*	0.013	-0.147
Marine Groups	1.552 (1,49)	.219	0.011	-0.182
Citizen Science	2.848 (1,221)	.093	0.008	-0.128
Benevolence	5.253 (1,273)	.023*	0.015	0.211
Marine Groups	0.032 (1,49)	.858	-0.020	-0.030
Citizen Science	6.550 (1,222)	.011*	0.024	0.274
Universalism	8.545 (1,273)	.004**	0.027	0.303
Marine Groups	1.689 (1,49)	.200	0.014	0.280
Citizen Science	6.327 (1,222)	.013*	0.023	0.292
Stimulation	14.547 (1,273)	.000**	0.047	0.246
Marine Groups	6.764 (1,49)	.012*	0.103	0.355
Citizen Science	7.452 (1,222)	.007**	0.028	0.197
Power	16.107 (1,273)	.000**	0.052	-0.356
Marine Groups	0.495 (1,49)	.485	-0.010	-0.140
Citizen Science	15.190 (1,222)	.000**	0.060	-0.381

5.2.2. CONTEXTUALISING BASIC VALUES

This study takes the approach of investigating all ten basic human values and seeking to understand the ways in which they can be connected to marine citizenship. The aim of this is to uncover personal stories that exemplify how all values can be tapped into to promote pro-marine environmental attitudes and behaviours, not limited to values which statistically associate with marine citizenship depth. This section situates the centred human value scores of the interviewees within an interrogation of the qualitative interview data. Centred scores are relative within an individual and interviewees were chosen to obtain a range of scores in each value. A positive score indicates a value is more strongly expressed relative to other values, and a negative score indicates it is less strongly expressed. Bringing together the scores with qualitative data helps provide a much deeper understanding of how values are influenced by, and in turn influence, marine citizenship. Fields such as social marketing are focused on targeting messages to values so this section supports those activities by

adding understanding about the connection between all values and marine citizenship.

5.2.2.1. Conservation: Security, Conformity, Tradition

Security: whole population centred mean = -0.23 (-2.79 to 2.67). Interviewees (n=6): -2.07 to 0.76.

Security was expressed in a range of ways. For one interviewee it featured as knowledge and nature security, and the intersection between these. Knowing about wildlife, the local area and who to call in the event of danger gave this interviewee security. And knowing that their own knowledge was confident gave them security as a professional engaging with others on marine environmental matters: *"I've probably spent the last 3 or 4 years learning about all the species in the sea… I feel much closer. I know what they are, I know if they'll hurt me, I know if I can eat them or if they'll kill me."* (Sarah)

Two of the three male interviewees identified the marine environment as a resource for humans both in terms of fundamental provision for life, and economic provision, and as such offering security: *"I think long term it needs to be preserved because it has such an effect on our food sources, plus even the air we breathe"* (David). Expressions of security were felt in different ways – economically and environmentally, and there was an implication of finding a balance between security of the environment and security of the economy: *"I understand that people's livelihoods depend on it or whatever, and again it all comes down to sustainability in those terms."* (David); *"jobs I know are important, but not over this other thing that's happening."* (Elizabeth). Additionally, of the 57 survey respondents for whom *security* was in their top three values, 54 also had *universalism* in their top three. This synergy between the two values adds context to the circumplex distribution in Figure 5.1b-c.

Security was linked to cleanliness of the marine environment, for one interviewee, drawing a distinction between human environments and natural environments, and a belief that one shouldn't really impinge upon the other: *"it feels more damaging to the environment than in a town situation where it is damaging to other town users, so we're directly living in the mess we've made. But the mess here is directly having more of an impact on the rest of the*

planet.” (Sonia). For this person, it was a moment of this incongruity – seeing fishing wire used in a bird's nest – that triggered awareness, concern and ultimately marine citizenship. Cleanliness featured particularly for recreational users who spend time in the water: *"it's just horrible to swim in isn't it, with stuff floating around."* (Sonia)*.*

Conformity: whole population centred mean = -0.59 (-3.57 to 2.14). Interviewees (n=8): -3.57 to 0.96.

Conformity was one of the least expressed values in the interviews, reinforcing the statistical finding of a negative effect on depth of marine citizenship. Coding typically related to *peer pressure* or to a *negative conformity* sentiment – an expression of being different from the norm. This did not mean those interviewees were consistently scoring highly on the opposite, openness to change, side of the spectrum; rather, low conformity had its own identity and was presented as observational, or even wistful, about a lack of conforming to others. Whilst typically viewing themselves as non-conformist, interviewees nonetheless valued peer pressure and conformity as a means of environmental social norming. This applied to regulations for activities, soft-policing of behaviours, and direct manipulation through invoking guilt and creating a positive brand for environmental citizenship, for example: *"Some of them are better at going along with the regulations then, as long as everyone is doing it"* (David)*.*

The most common expressions of *conformity* related to being different from others, e.g. *"I feel like I'm completely niche"* (Simone), not understanding others' motivations for behaviour, and not fitting in. This varied in how generous it was towards others, for example: *"I again am flabbergasted that people don't have the same level of interest, or fascination or wonder or awe in marine and other environmental things, as I do."* (Clare). Only one respondent referenced self-image and fitting in as being influential on their marine citizenship: *"I feel a bit self-conscious about it when I'm walking around. I like to be a little bit inconspicuous when I'm picking up rubbish."* (Sonia).

Those with lower conformity scores indicated a kind of pride in the othering of others and their own non-conformity, like others were more of a crowd whose conformity could be used against their will to change their behaviour. But they

also gave strong expressions of their non-conformity which sounded almost lonely or uncomfortable. A very low scoring interviewee articulated obedience towards parents in earlier life, whilst another with a neutral-positive score, expressed rebellion towards parents in earlier life. Those earlier life experiences might give an indication of changing relative values with life experience.

Though being less conforming is associated with being an active marine citizen, this value was one of the most difficult to relate qualitatively with marine citizenship. Since conformity relates to prevailing social norms, were social norms to change and incorporate more pro-environmental attitudes, it would not be expected that this would inhibit those with low *conformity*.

Tradition: whole population centred mean = -0.23 (-3.02 to 1.93). Interviewees (n=9): -1.02 to 1.48.

Data coded *tradition* clustered into a small number of particular themes: family history and tradition (particularly spending time in nature), seaside holidays, cultural lifestyle/geographical history (and romanticisation of a less impactful human past), and recognition of others' traditions. The themes, however, did not necessarily relate to the tradition value scores of the interviewees, with high and low tradition scorers describing family traditions. For example, two interviewees talked particularly emotively of their childhood/parenthood as being *"free range"* (Elizabeth), and *"it's the way you're raised"* (Jemma), recalling time in nature from their own childhoods and working to shape their own children's childhoods in a similar way, and scored 1.48 and -0.90 for *tradition* respectively.

Though the description of a family tradition of raising children and connecting with the environment was there, it didn't necessarily derive from a general value for tradition in life. Other factors must be related here, for example interviewee, Jemma, has travelled and lived in a different country from childhood, having been 4 years at her current location, and described a cultural heritage of engaging with the marine environment in a recreational way. Whilst Elizabeth has lived in the same town for 35 years, since being a teenager, and expressed a strong understanding of the local marine environment and local relationships with the sea, indicating different types of place and environmental identities may intersect with or be more influential than *tradition* values, in keeping with quantitative findings. Nevertheless, even with a low score for *tradition*, Jemma

was keen to raise her children similarly to her own childhood, suggesting an opportunity for people with a range of values to be engaged in a legacy for future generations.

Others talked about family holidays and parental role models for a way of life, but with less emotive descriptions; again spanning a range of *tradition* value scores. This related particularly to outdoors experiences: *"It was my parents… since we were little we used to go to the Highlands every summer. And go sailing and kayaking and canoeing and everything, just getting stuck in in the lochs."* (Sarah)

Parents played other roles in the lives of the interviewees, relating to professional and lifestyle choices that connected with interviewees' current day marine citizenship activities:, e.g. *"He was a naval man and then he went into marine insurance when he left the navy and so there has always been this sort of marine, marine theme."* (John). These data suggest that upbringing is an important formative experience for marine citizenship, and whilst it may not relate to tradition as a value, it does connect to developing a sense of environmental identity (EIDI *time in nature* and *environment for development*, section 5.2.3.3) and positive marine place attachment (see 6.2.2), which are also statistically positively associated with marine citizenship.

Those who demonstrated a particular recognition of others' traditions both had positive scores (0.26 and 1.48) and both liaised with the traditional local fishing industry: *"tradition plays such a big role in what they do … which is understandable because they've been doing it all their lives and they rely on it for an income."* (David). Valuing *tradition* may, therefore, support those whose marine citizenship actions connect them to sectors where tradition is important.

Reinforcing quantitative findings, it was not clear from the interview data that *tradition* was a particular driver for marine citizenship, but it did not appear to be inhibitory to marine citizenship. Family traditions and a childhood involving nature were most prevalent as potential influential factors, though this acted as a formative experience which mediated development of environmental values/identities.

5.2.2.2. Self-transcendence: Benevolence, Universalism

In this population of marine citizens, the *benevolence* and *universalism* values were closely situated on the openness to change – conservation dimension (Figure 5.1b). This suggests that, collectively, this population value their in-group and others/the environment in a similar way. It's perhaps, therefore, not surprising that the qualitative analysis of these two values saw considerable overlap, which should be borne in mind in the following discussion.

Benevolence: whole population centred mean = 0.95 (-2.19 to 2.76). Interviewees (n=10): -0.93 to 1.93.

Despite the positive statistical relationship between *benevolence* and marine citizenship depth, two interviewees had a negative value score and they tended to discuss benefit of marine citizenship for others couched in terms of the contribution given by the interviewee; or how others could benefit in the same way as the interviewee. Marie said *"I want everybody to have that potential in their lives to find something fascinating for the rest of their lives"*. This could be interpreted as a benevolent and giving sentiment. However in the broader context of this respondent, that is less clear as a motivation as Marie also talks of being perceived as being too present within the marine group, and of pushing her idea of how things should be, by stealth if necessary. Whilst Marie wishes others to be fascinated, she sees this as being fascinated in the same way as she is.

David also scored negatively, and talked about his professional role as "*a way for me to be able to give*" as his role was a platform to "*show other people"*. This limited the amount of giving from a more voluntary capacity: "*now my professional role gives me enough, quite a decent amount of opportunity to fulfil the…community engagement."* Lower positive *benevolence* scoring interviewees also hinted at this professional role of giving "*knowledge and expertise to help the community*" (Clare), very much as knowledge benefactors with a utilitarian approach towards recipients.

Higher scoring interviewees talked particularly about moral duty towards others/society – *noblesse oblige*, volunteering, sharing, and the human aspect of marine citizenship, both as marine group members and as recipients of

nature. There was a sense of generosity towards others and an expression of recognising a need to nurture others' feelings to get the best from them as marine citizens. Volunteering, outside of the marine world, particularly focused on social good through the NHS, housing, or disaster rescue. One respondent had a previous career in nursing and a desire to care for both people and animals could be seen throughout their marine citizenship actions; they had the highest *benevolence* score in the interview sample.

Supporting the finding of *benevolence* and *universalism* being so closely distributed, few interviewees made mention of specific in-groups. Only the marine group leaders did in relation to looking after the group members and finding ways to be inclusive and reflective of their needs. Clare broadened the scope of in-group as doing "*something for my town*", connecting with place identity which is discussed in section 6.2.3.

I was particularly interested in Terry, who had a high *benevolence* score (1.52) and slightly negative *universalism* score (-0.14). The interview gave clarity to the scores as Terry talked of nature and wildlife as being something for people, rather than a thing in their own right, his sense of duty being towards people rather than nature. There was no indication this connected to any kind of religious anthropocentrism. It was a desire for people to be the beneficiary of both marine citizenship outputs and the natural world as a source of enjoyment and human endeavour. Terry had been doing marine citizenship activities since he was a child, sometimes unconsciously, and had brought those experiences and skills to the groups as they emerged into being. He wanted to contribute citizen science outputs to the relevant repositories but performed marine citizenship independently: "*doing something that I want to do, not doing it because I like the group. Collecting the information because I know that's beneficial to the group.*" Terry was interested most in the legacy of knowledge and human experience: "*I'll never see the benefits of what I'm recording. But I know that in future people will have some record of what was here.*"

This final case was of particular interest to me as a researcher, as I wanted to discover alternative value bases than *universalism* that promote pro-marine environmental behaviour. Though still self-transcendent, the *benevolence*

aspect of marine citizenship is a clear way of being motivated that can exist independently of a global ecosystem requiring stewardship.

Universalism: whole population centred mean = 1.34 (-1.24 to 3.00). Interviewees (n=9): -0.14 to 2.48.

Within the interview data, there was a noticeable spectrum of increasing self-transcendence with increasing *universalism* scores. Data from interviewees with scores upwards of 2.00 expressed full integration of humans and the natural world, including empathy towards the texture of human nature; those scoring 1.00-2.00 showed more of an empathy towards either the variety of human nature, or for the wider environmental connections; and those scoring low or negatively expressed a lack of connection with the living things or a broader ecosystem (Table 5.3). Higher scores of *universalism* were associated with a global sense of scale through more focus on global systems of both humans and the natural environment, and their interconnectedness. E.g. *"it's like integral, it's joined together, like it's interlocked with so many other aspects of individuals and communities and world community as well"* (Jemma); *"you're learning that it's pollutants that people have used to spray on the crops that's washed down to the sea. So you can see and understand then why we need to change what we put on the crops."* (Elizabeth).

Some interviewees explicitly expressed citizenship, including marine, in a universalist way. Jemma felt she was not just a marine citizen but "*a world citizen"* with marine citizenship being one piece in a broader world citizenship puzzle. Elizabeth felt she has to "*do everything you can*" in order to address human impacts upon nature. For Clare, the connections between people and the environment were the entire point: "*citizenship for me fundamentally is about connectedness and connections*" underpinning a philosophy that "*citizenship is about taking personal and collective responsibility*". There was a clear pathway in these higher *universalism* scorers between these values and their philosophy, and actions of citizenship generally, which fits with existing research into values and environmental citizenship.

Table 5.3 Basic human values universalism score of interviewees and corresponding qualitative data. High = ≥2.00; Mid = <2.00, >1.00; Low = ≤1.00

Universalism score	Example data
High	"If you connect like the natural world around you, you realise that you're part of something, and also at the same time, you're not the be all and end all" (Jemma)
	"…that empathy for people and understanding their needs. So it's not just about the animal's needs it's about that person's need as well. So we've all got things that we want to fulfil in life." (Elizabeth)
	"then all of a sudden you understand the context, and the politics, and the community side of it. But you can't tell them not to fish, because they're poor. They need food. So then you understand why are they poor." (Simone)
Mid	"Nobody seems to really understand or want to understand where the other person is coming from, what motivates them, and how to work with that." (Marie)
	"I don't understand why people are like, well I don't need to do anything, it's not gonna make a difference, they can do that. Or … they behave badly so I'll behave badly." (Clare)
	"I think it makes me more aware or be more aware of the wildlife. It gives me more of a connection. If I'm picking stuff up I'm actively thinking of a turtle would think that was a jellyfish or something could get their head stuck in the stretchy things that hold the cans together." (Sonia)
Low	"I suppose you still see like things on TV and you know like, that's still part of the world isn't it?" (Sarah)
	"I'm not that sort of person, no. I have been down there this spring when I first started watching in earnest. The first seal that came in is one that's been here a long time and it came in and swam towards me, towards the rocks. I thought, I know you. And I did wonder if she knew me. But no, I don't get them [people who feel they are communing with seals]." (Terry)

5.2.2.3. Openness to change: Self-direction, Stimulation, Hedonism

Self-direction: whole population centred mean = of 0.77 (-2.26 to 3). Interviewees (n=7): -0.84 – 2.07.

Of the openness to change values, *self-direction* was the most highly expressed by the interviewees. This is unsurprising for a group of people who are proactively and voluntarily participating in marine citizenship. *Self-direction* was illustrated in relation to environmental profession and education, volunteering, and marine citizenship directly, with interviewees demonstrating a drive to shape their lives. For example: "*We have power to create our own lives and our own future*" (Jemma); "*If it needs doing, do it*" (Jemma); "*We've got to do something about that*" (Elizabeth).

S*elf-direction* value scores within the marine group leaders, ranged from negative to one respondent's highest value score, which was surprising as a certain amount of drive might be expected in founders of new initiatives. The

interviewee[24] with the highest score showed this value very strongly in their interview. The use of language such as "*I wanted to develop my mind … So I wrote to them … I had got a grant … And so I did … Everything that was done…was done by me … I campaigned … I applied … And so I went*" is littered throughout the interview illustrating a strong drive and application. The establishment of that marine group can be seen as a product of the *self-direction* of this respondent. Though catering to a broader community and marine-related geographical need, the goals and nature of the group were directed by this leader. There is also a connection here with self-enhancing values of *achievement* and *power* which were high in this respondent in relation to the average of this population (see Section 5.2.2.4).

There were also expressions of a lack of *self-direction* in negative and lower scorers, particularly younger interviewees: "*I have an idea and get so far then I don't know what to do*" (Simone). Older interviewees tended to score more highly on *self-direction*, perhaps being something which gets more developed with experience or that in hindsight lived experiences may feel less chaotic. To test this, the centred (therefore individually relative) *self-direction* score was regressed with age. Age accounted for 7.1% of the centred self-direction core, adjusted $R^2 = 0.071$, and was significantly predictive ($F(1,274) = 21.706$, $p<.0005$). This gives significance to the age demographic of this population (mean = 53), if *self-direction* is expressed through actions such as volunteering and citizenship.

Stimulation: whole population centred mean = 0.14 (-2.86 to 2.76). Interviewees (n=10): -1.02 – 2.14.

Stimulation and *hedonism* were two of the more difficult values to qualify as they frequently crossed over when interest and challenge met with personal need and satisfaction, which is important given the low statistical relationship

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[24] No identifier provided for key informants to protect anonymity, due to their senior role in the case study marine groups.

between *hedonism,* and strongly significant relationship between *stimulation,* and marine citizenship. For clarity, data which was more related to sensory, physical, desire or need was coded as *hedonism*. Data which was more related to challenge, change, freedom and interest was coded to *stimulation*.

The expression of *stimulation* in the context of marine citizenship related to a number of factors: knowledge; change; challenge; adventure and the unknown; novelty and difference; creativity; social/political dynamism (contemporary and historical); new opportunities; fascination; connectivity (Table 5.4). Connections to marine citizenship were about learning about the marine environment and wildlife, and marine policy; the marine environment as an experience and modern-day frontier or "*new world*"; the dynamism of the coast or sea; and the geographical freedom of the sea as a connected, limitless space.

Table 5.4 Example qualitative data indicating the basic human value of stimulation in the context of marine citizenship.

Stimulation value	Example data
Knowledge	"I discovered that I was fascinated by marine life, that it was, and the processes of marine life are completely different from terrestrial. And, um, I wanted to know more about that." (Marie) "I'm a [doer] and a reader so I will, I don't like fictional books, I like factual books. So I could just gobble those up so I'll read a book in a night and then I will share that knowledge." (Elizabeth)
Change	"All the time it's evolving so we aren't just rigid. We change what we do, we put new things, we do different things from the directions of influences that come." (Elizabeth) "I think it changes every day as well which is interesting isn't it." (David)
Challenge	"I was looking forward to a new challenge." (Simone) "I was told well if you can come up with another project in a couple of weeks we can keep the grant open. And so I did." (Marie)
Adventure/unknown	"On land you can sort of see everything can't you, you're sort of…a bit stuck here aren't you? Stuck on land. But in the sea you could go anywhere." (Sarah) "I've got this itchy feet thing." (Simone)
Novelty/difference	"There was quite a lot of arguing, just from factions. Really interesting." (Clare) "It's always different. Always interesting." (Terry)
Creativity	"I just like to be creative." (Sonia)
Social/political dynamism	"I think it's the most exciting time, certainly in, since the printing press! For, yeah, for sort of global citizenship." (Clare)
New opportunities	"I have to be very careful not to be suckered in to applying for grants. I'm not successful at [resisting] that." (Marie)
Fascination	"I know enough to know I will find it fascinating for the rest of my life." (Marie) "The ecology, I just find it fascinating, just to watch." (Sarah)
Connectivity	"The love of it. That thing of thrill and your connection, that's what helped me make the choice." "It's kind of nice sort of making connections with things that you learnt."

The highest scoring interviewee, John, scored *stimulation* and *self-direction* equally highest. Though *self-direction* did not feature in John's interview data, *stimulation* was prominent suggesting that it was the desire for *stimulation* that

was more relevant in driving John's marine citizenship. This was evidenced explicitly: "*The marine world was something I really knew nothing about and that was the attraction*". Marine citizenship was just one of the ways John was filling time in retirement, alongside participation in other voluntary roles. For three interviewees the sea was seen to be "*another world*" and marine citizenship was "*opening little doors*" to this novel and unknown world. The interest and challenge of learning about or exploring this other world was an important motivator, supporting the evidence derived quantitatively (Table 5.1 and Table 5.2).

Other high scorers showed particular interest in the political and policy-world surrounding the marine environment. It was stimulating to them to examine the inter-connections between people, policy and the marine environment, and to explore opposing and diverse opinions and perspectives. Two of these were group leaders and this sort of *stimulation* may help underpin the motivation to create a group influential in this sphere.

Hedonism: whole population centred mean = -0.56 (-3.29 to 3.38).
Interviewees (n=9): -2.07 – 1.43.

Hedonism emerged in relation to emotional or sensual feelings connected to the sea or marine citizenship, positively contributing where a need was fulfilled by marine citizenship. This was by allowing more time in nature, experiencing pleasure in, on or near the water or visually by looking at it, or in conjunction with *benevolence* through the fulfilment of sharing a love of the sea, e.g. "*actually this is really serving me, this is the only time I really get out in the rock pool*" (Clare); "*it's always fun at the seaside*" (Jemma); "*that's my drug when I go into the sea and I put my head under, like I feel incredible*" (Sarah). Many of these data brought out the openness to change rather than the self-enhancement aspect of the value.

Hedonism negatively contributed to marine citizenship where laziness or lack of personal pleasure in some aspect limited the amount or type of marine citizenship being done: "*I'm now only really interested in going if…*" (Marie); "*I kind of do it when I feel in the mood*" (Sonia); "*I do what I can that doesn't affect my time or whatever too much of an extent.*" (David). These data amplified the

self-enhancement aspect of this value, where participation was when the respondent would most get something out of it.

The two interviewees who had positive *hedonism* scores described experiences where marine citizenship fulfilled what they wanted to do or was part of a marine experience they valued. For Clare, *hedonism* was jointly top scoring with *achievement* (see 5.2.2.4), spanning the two dimensions of *hedonism*. Clare's personal need and pleasure was derived from time spent in the marine environment and coming together socially with likeminded people, "*trying to surround yourself with a tribe*", which was a support network for someone who felt strongly non-conformist.

For the marine citizens in this research, *hedonism* appears to be wrapped up alongside other values and acts to reinforce them where they meet a need. Within the circumplex of basic human values, *hedonism* crosses the boundary between openness to change and self-enhancement and this position was exemplified in both the metric results (Figure 5.1) and the qualitative data.

5.2.2.4. Self-enhancement: Hedonism, Achievement, Power

Achievement: whole population centred mean = -0.81 (-3.1 to 2.1). Interviewees (n=10): -2.52 – 1.43.

Moving onto firmly self-enhancing values, *achievement* was expressed in a number of interesting ways that had relevance to marine citizenship participation and the establishment or management of the marine groups. Three group leaders expressed pride in the achievement of their marine groups. *Achievement* was felt through credibility of the groups, networks reached, status of collaborators or involved stakeholders, and having influence in policy at local and/or national scale, e.g. "*It's actually working out as quite a good model project that bigger programmes, national programmes, are looking at*"; "*People are coming to us*"; "*I'm quite proud of it*". Two leaders were particularly high scorers for *achievement* and they expressed their personal ambition and pride in their own achievements as leaders developing and running the groups. There was a sense of personal achievement in applying personal skills and experiences to the group.

For some, there was a flip-side to this value through expressions of failure. This was coded as *achievement* as it demonstrated the value placed on achievement and the loss from not achieving as hoped or planned. For example: "*but I don't think I've succeeded at all in that*" (Marie); "*I constantly worry whether I'm doing the right thing in the meetings*" (Simone). Somewhere between the highs and lows of *achievement*, some interviewees connected their *benevolence* and *achievement* values in feeling useful and relevant, or recognising others' need for this: "*I'm still valuable, they still listen*" (John); "*you have to give back something as well to make them feel good and see the sort of the results you know of what they've done*" (Elizabeth).

For some neutral and lower scoring interviewees, their achievement was expressed in a more private way, often connected with knowledge and understanding: "*…rewarding in, kind of, understanding the sea in terms of its conditions*" (David); "*I've recorded it…accurately, with all the details, and it's gone forward and gone in the database. I find that's very satisfying.*" (Terry); "*I think I can talk for ages about the stuff out there and feel really confident about it because I know about it*" (Sarah).

As with all the values, it's clear that *achievement* is not a requirement for being an active marine citizen, but to take pride in one's contribution was important for a number of interviewees, and it's notable that the two high, positive scores were from group leaders who used their expertise and skills from profession and education to apply to their groups and develop group achievements.

Power: whole population centred mean = -1.49 (-3.29 to 1.00).
Interviewees (n=6): -2.52 – -0.43.

Though it was not possible, due to the voluntary nature of the interview stage, to secure interviews with survey respondents who had positive centred *power* scores, who made up 4% of the survey population, *power* was still expressed in the interview data. The higher scoring interviewees expressed *power* in terms of their own ability to influence and their personal role within the group or their professions, e.g. *"I wanted a platform to be able to spread that education"* (Sarah): *"Got to be careful or they'll take over"* (Marie). There was recognition of how other people can be manipulated to create the desired change: *"but what they did have, I discovered, was a kind of commitment towards bringing people*

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into their subject, so if you could tap that they would come up" (Marie) and *"...you've got their sort of undivided attention. It's really nice. You can tell them anything"* (Sarah).

As scores decreased, that sense of personal platform likewise seemed to diminish. Where there was still a desire to have control, it be less overt. For example from Simone: *"I like being behind stage...being bossy"* and *"I can't move it forward in the direction I'd like to move it forward, but I am still trying from behind the scenes"*. There is also an increasing sense of shared power through collective action and empowerment of the public: *"then they have to listen because it's the power of the people"* (Simone); *"...we used the [group] and its partnership connotations to say we are representative of this area"* (John).

Group leaders and those taking other leadership roles within their marine citizenship or related employment had higher centred *power* scores than most interviewees, though still in negative. This power was sometimes expressed in terms of personal actions, but often also in the power of the group and collective action. There is clearly a role within organised marine citizenship for the expression of *power* through leadership and empowerment of others.

5.2.2.5. Basic values summary

Clear pathways could be traced to marine citizenship from self-transcendent values of *benevolence* and *universalism* in some interviewees, and *security* or *achievement* in others. *Stimulation* was a dominant feature within the interview data, whilst *hedonism* was much less so. *Conformity* appeared particularly un-influential upon marine citizenship and similarly *power*. It's the premise of this research that whilst some values are much more prevalent, no one single factor is necessary for a person to be an active marine citizen. For example, the thirteen survey respondents for whom universalism was in the bottom five of their values, a range of other values were instead prioritised including *benevolence, hedonism, stimulation, security and tradition.* Each value therefore creates some opportunity for engagement in the cause of promoting good marine environmental health.

5.2.3. ENVIRONMENTAL IDENTITY AND ATTITUDES

In this section I report on the distribution of environmental attitudes and identity in the survey respondent population, and examine these against marine citizenship actions and intent. The marine citizenship score is derived from actions performed; the intention is derived from a Likert scale of consideration of the impacts a respondent has on the marine environment (see 3.4.1.3).

The survey results indicate that this population of active marine citizens hold strong environmental concerns that view humans as being destructive (Figure 5.3a) and do not value material consumption (Figure 5.3b). They were strongly concerned about climate change (Figure 5.3c). The data show more spread in agreement around aspects of environmental identity obtained from the five Environmental Identity Index (EIDI) items (Figure 5.3d), but are still heavily weighted around higher environmental scores of 4 and 5.
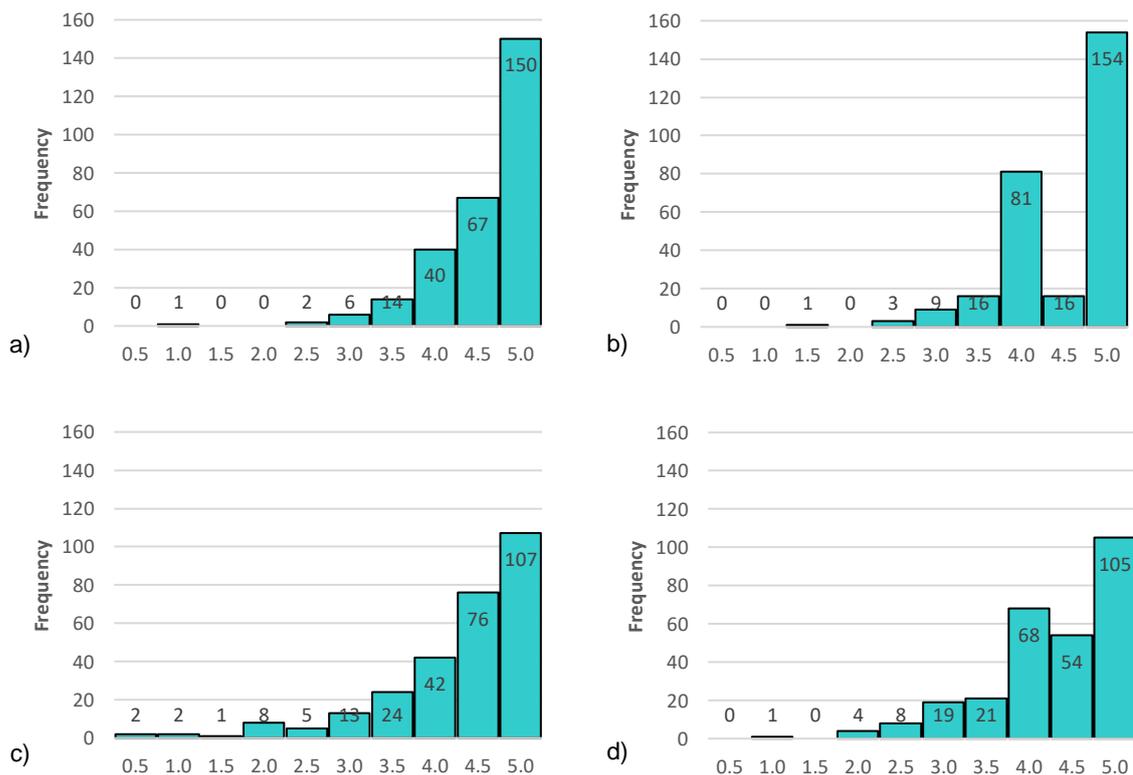
Figure 5.3 Environmental values held by active marine citizens (n=280). Bars include frequency of scores in half point up to **a)** Humans are abusive to the natural environment, four items, Mean = 4.50, Std. Dev. = .587; **b)** lack of personal materialism, three items, Mean=4.36, Std. Dev. = .706; **c)** concern about climate change, two items, Mean = 4.29, Std. Dev. = .883; **d)** Environmental Identity, five items, Mean = 4.10, Std. Dev. = .773 Index. 1=strongly disagree, 3=neutral, 5= strongly agree.

A series of linear regressions on survey data were run to predict marine citizenship score from these four variables. Both climate change concern and EIDI were significant predictors with a slight positive relationship. (Climate change concern: $F_{(1, 278)}$ = 5.254, p = 0.023, adj. R^2 = 0.015; EIDI: $F_{(1, 278)}$ = 12.444, p<.001, adj. R^2 = 0.039.)

To understand the difference between marine citizenship actions and intent, the same variables were run in regressions to predict the response to marine citizenship intention (Table 5.5). All four variables were highly significant positive predictors of marine citizenship intention, however EIDI was much more influential, accounting for 16.2% of the variation. Taking the findings of the regressions together, there is evidence of a value-action gap, with these variables significantly predicting intention, but showing weaker or no predictive power over marine citizenship actions.

Table 5.5 Series of linear regressions examining environmental values as predictors of marine citizenship intention. Survey respondents were asked on a seven-point Likert scale from Never to Always: "As a marine citizen I consider the impact I have on the marine environment". Likert data is treated as interval. N=277.

Variable	F	Adj. R^2	Sig.
Humans abuse	18.530 (1,277)	0.059	p<.001**
Non-materialism	11.545 (1,277)	0.037	p=.001**
Climate change concern	16.833 (1,277)	0.054	p<.001**
EIDI	54.597 (1,277)	0.162	p<.001**

Notes: EIDI = Environmental identity index. Significant to less than 0.001**.

5.2.3.1. Contextualising environmental attitudes and identity

Qualitative data from the survey provided context about the factors, particularly amongst the environmental identity index items, that were prominent in relation to marine citizenship. Survey respondents referred most often to the EIDI elements *environmental citizenship* (58 references) and *time in nature* (36 references), and also to *humans abuse the environment* (27 references). Data was coded for *humans abuse* when it made explicit reference to human activities and harm/abuse/damage/degradation. Related to this code were emergent sub-codes of *pollution* (27 references) and *protection* (51 references). *Pollution* related to factual reference to waste or contamination of human origin, but did not necessarily evaluate this as being abuse or degradation. *Protection* related to protecting/caring/improving the marine environment or aspects of it and explicit that there is some kind of harmful impact to protect against. From this it can be understood that marine citizens are influenced by both factual and

moral understandings of the impact humans have upon the marine environment. These commonly emergent themes were expressed directly by respondents as motivators for marine citizenship action (Table 5.6).

Table 5.6 Example data illustrating environmental values expressed as a motivation for performing marine citizenship. Number of references in survey data in brackets. N=280 EIDI variables relate to items which contribute to the Environmental Identity Index score.

Environmental variable	Example data
(EIDI) Environmental citizenship (58)	"Personal commitment to environmental values and action as a volunteer alongside my paid employment."
Protection (51)	"Protecting our seas and the marine life that lives there from plastics, ghost gear, pollution and other man made problems" "A wish to help to safeguard our coastline and the marine life therein."
(EIDI) Time in nature (36)	"I enjoy spending time at the beach, surfing or days out with my family"
Humans abuse (27)	"the effects we have as a species on the environment"
Pollution (27)	"Concern about the effects of Climate Change, & disposal...accidental or deliberate, of substances such as plastics which cause harm to the marine environment" "concern about marine plastic pollution and what we can do about it"

Additional themes emerged in the interviews such as valuing *environmental aesthetics*, believing an environmental *education/experience is important for development,* and deriving *wellbeing from nature*, and *environmental legacy,* though they had relatively low coverage, suggesting these are not primary motivators. *Non-materialism*, *climate change concern*, and facing *ecological catastrophe* also emerged in the interview data, connecting with the Likert questions previously reported on (Figure 5.3).

Taken together, as key variables of influence upon marine citizenship, from these data marine citizens can be understood as people who enjoy being by/on/in the sea; they have either a moral repugnance towards human impacts upon the sea, or otherwise believe impacts to affect the quality of the environment they so enjoy. Additionally they hold an identity that they are engaged environmental citizens. It is easy to understand how this combination promotes active marine citizenship.

These key themes of environmental citizenship, time in nature, and the others grouped as environmental concerns, are examined in more detail in the following sections.

5.2.3.2. EIDI Environmental citizenship

The prevalence of *EIDI environmental citizenship* as an emergent theme is particularly significant for this research topic as it suggests marine citizenship is situated alongside or within more general environmental citizenship. Though Chapter Six: Place presents the case that the marine environment has a particular power to inspire connectedness and marine citizenship, the evidence presented in Chapter Four: Citizenship shows that marine citizenship has a significant relationship to general citizenship, and it is proposed that for marine citizenship to occur, a person must already identify as an active citizen. Understanding the quality of the environmental citizenship element of the significantly associated environmental identity (EIDI) is therefore important.

Six interviewees referred to specific environmental citizenship actions that reflected a general ethos of taking responsibility for the environment. These included cycling rather than driving (John); plastic free challenge "*because I was so annoyed about everything, all the litter, all the beach cleans that we go on, the rubbish we pick up.*" (Sarah); using sustainable building materials in projects "*Because I was very aware of sort of planet things then.*" (Elizabeth); writing to companies, challenging their policies, and reporting environmental incidents on a day-to-day basis (Simone). Environmental citizenship was expressed as a responsibility and moral duty which for some invoked strong feelings: "*You're…being destructive so you have to then speak up, you have to do everything you can.*" (Elizabeth); "*I've felt I had to, again it's a bit of a calling I suppose, of trying to…save the world.*" (Clare); "*So every time I go out if I see something that I'm not happy with I do it because that is what I'm passionate about…if I don't do something I would feel guilty about that for a long, long time.*" (Simone). Given such strong feelings, it's not surprising that many of these environmental citizens are committing multiple areas of their lives to this cause. (Emotions are discussed in more detail in Section 5.2.4.)

Clare, David and Elizabeth talked passionately about public engagement activities; all three of whom have marine/environmental professions as well as voluntary roles. For example, Clare said "*for this job here I'm trying to persuade people to change their individual collective behaviours, and behave more sustainably.*" This was an important part of her marine citizenship: "*I think*

citizenship is about taking part, keeping your own knowledge up to date, sharing that with other people, helping reach out to different groups of people". For Clare there was a blurred boundary between her professional and her voluntary activities because they were both an expression of her environmental identity and values and she "*always felt miserable when I'm just doing a job for money.*" Possibly reflecting his early career stage, David was keen to be able to perform his marine citizenship, including public engagement, as part of his employment: "*I do feel like it's an important message. I wouldn't still be doing the volunteering at events or whatever if I didn't think it was. But even better if you can do it five days a week plus as your job.*" Viewing occupational field as an active citizenship choice sheds some light on the numbers of survey respondents who had a related career. This is also raised in 4.2.1.3.

The role of individuals in tackling climate change and environmental degradation was seen as important – a perspective one would expect to find expressed by those acting as environmental citizens themselves and indicative of a belief that there is impact within their locus of control. Clare connected this responsibility directly with the harm that humans cause, referring to a cultural attitude towards the human relationship with the environment: "*I think how you behave individually as a citizen is hugely important… I feel like everyone should do their bit and try and influence the most positive outcomes and, I don't have the phrase, like share commons communally, mindfully, rather than exploiting and pillaging.*" Simone referred to her group as "*guardians, it's up to us to go no-no-no-no-no, you're not gonna get away with that*". Terry recognised the challenges to individual responsibility due to systemic barriers, and lamented the lack of interest in many people in pro-environmental behaviour. Despite recognising barriers, it was felt by Terry that others should be more interested in participating in this way.

A love of animals, nature documentaries, becoming independent in adult life, and having access to the right tools and facilities, including a supportive network, were all mentioned as enablers or motivators for marine citizenship in adult life. Enablers and barriers to marine citizenship are examined in 4.2.2.4.

There was also some explicit crossover with basic human values and place identity (see 6.2.3). Jemma showed an intersection between EIDI environmental

citizenship, universalism and place identity: "*I think marine citizenship is just one piece of wider citizenship but then without that, if you took away marine citizenship and you just had the rest of it, environmental and world citizenship, it would be incomplete.*"; "*environmental consciousness for me I think is being part of the place wherever it is that you happen to be standing at that moment*". Jemma's place identity connected to the globe, perhaps because of having moved and lived around it, and connected to wherever she was at the time. Her environmental citizenship – which was broader than marine – reflected this universality in place identity and basic values. Elizabeth demonstrated a much more local scale of EIDI environmental citizenship which intersected with *benevolence* basic human value: "*A lot of children in [coastal town] have never even seen the sea and that's just horrible to think that it's, it's so true, and you learn about these things and you think right we've got to do something about that*". Elizabeth was strongly connected to her local area and marine environment, feeling a duty to facilitate marine experiences for others. Elizabeth's environmental identity index score was maximum and, with high benevolence and universalism, seemed to incorporate both values.

5.2.3.3.   EIDI Time in Nature and factor intersections

EIDI time in nature was almost as prominent as *EIDI environmental citizenship* (49 and 54 references respectively). Data coded as *time in nature* reflected a sense of value to being in nature, both marine and terrestrial, rather than lists of outdoors activity. All ten interviewees were engaged at some stage in their lives in some sort of outdoors pursuit, and nine discussed these activities as being part of life or providing some sort of relief or emotional gain due to their environmental connection – there was a quality around time actively being spent and this being valued. Distinction was made between expressions of *hedonism* or *stimulation* that were not explicitly driven by time spent in nature so much as the experiential quality of that activity, and these are discussed under sensory experience (see 6.2.4.3) and basic human values (Section 5.2.1).

Time was spent in nature performing specific activities, such as rockpooling, walking on the beach, rock-climbing, surfing, exploring, observing for artistic creation, and the marine citizenship activity of beach cleaning. Some interviewees talked of these activities as being innate, for example: "*we've*

always been a bit sort of outdoorsy" (Jemma); "*I'm a fish…I love being in the water.*" (Simone). *Time in nature* was described as being happy and free, interesting, and making interviewees "*feel better*" (Simone) and "*bring life back*" (Elizabeth). Others related a variety of ways in which *time in nature* could be rewarding such as being a social experience, particularly with family, "*I'll try and drag some friends out and possibly members of my family, while also walking the dog in your kind of precious free time.*" (Clare); or a welcome lonely experience "*I also think that's healthy because the people that want to escape, can escape.*" (Sarah). Elizabeth explicitly connected marine environmental responsibility with time in nature: "*So I think that's really important. Getting people out on the water.*" For these marine citizens who value time spent in nature, marine citizenship can support this aspect of environmental identity, as well as this aspect promoting engagement in outdoors marine citizenship activities.

There was an intersection between these specific environmental factors and the basic human values discussed above. For example EIDI *time in nature* and EIDI *environment for development* (in three interviews) via formative experiences in childhood, as discussed above in Section 5.2.2.1. The context here however offers potential explanation for the observed disconnect between wider traditional values and valuing these childhood experiences. Rather than being about the tradition, this is about valuing time in nature and believing lack of time in nature as children is potentially harmful: "*Especially with like more kids using tablets and iphones and disconnecting with the natural environment, I think there's a huge gap for sort of health and wellbeing for people to re-engage.*" (Sarah). All three of these interviewees made reference to formal environmental education as being important and welcome. These beliefs were almost expressed as being environmental rights for children, linking to citizenship theories about rights and responsibilities, further situating marine citizenship within a citizenship framework.

It was an explicit intention of this research, through the interviews, to uncover the formative events or experiences which triggered the pathway to active marine citizenship. All ten interviewees had a story to tell about their experience which connected strongly to the EID *time in nature* theme. These formative experiences intersected with other factors investigated in this research

particularly around place, emotions and values. Table 5.7 summarises these and signposts to the relevant discussions elsewhere in this thesis.

Table 5.7 Active marine citizens (n=10) were interviewed to learn about influences upon marine citizenship participation. Table presents a summary of themes that emerged in connection to formative experiences.

Type of formative experience	Details	Connections to other themes	Location of further discussion
Growing up with water and/or living by the sea	Family experiences on or in the water, or generally in nature Childhood seaside holidays	EID time in nature EID environment for development Tradition Coastal residence Visits to the sea	5.2.3.3 5.2.3.1 5.2.2.1 6.2.1.1 6.2.1.2
High quality direct environmental/wildlife experience	Pristine international ecosystems Human-animal direct connection Aquaria	EID time in nature Emotions Stimulation	5.2.3.3 5.2.4 5.2.2.3
Indirect environmental experiences	Nature documentaries Aquaria	EID time in nature Emotions Stimulation	5.2.3.3 5.2.4 5.2.2.3
Human impacts	Pollution Loss of wildlife	Emotions Stimulation Universalism Security	5.2.4 5.2.2.3 5.2.2.2 5.2.2.1

5.2.3.4.   Environmental concerns

Environmental concerns, as discussed quantitatively above, were emergent in the interviews. The most prevalent was that humans abuse the environment, with seven interviewees sharing this concern. *Humans abuse* was expressed in a range of ways including in relation to litter "*the mess here is directly having more of an impact on the rest of the planet*" (Sonia); pollution "*I'd been aware actually for a long time you know you looked at the amount of soot and pollution that came out of vehicles even in the 60s and 70s*" (John); and overpopulation: "*the challenge for the world is not energy but is population control*" (John). Terry drew a distinction between the natural processes of biodiversity change and human impact: "*I don't care about extinctions. I care about manmade extinctions*". Elizabeth's high basic value *benevolence* was reflected when she compared harm to marine mammals as "*like someone's just grabbed your child and run and thrown it over the cliff*".

Collective action, stewardship and ownership were proposed as solutions to anthropogenic environmental damage. These are all acts that are considered in this work as being marine citizenship – i.e. taking personal responsibility for shared problems. All of these examples demonstrated a sense of separation

between human activity and nature, which could be seen to contradict the generally high levels of *universalism* value. As individuals these marine citizens felt part of the natural ecosystem, yet they viewed humans as an act of harm against it. This is rationalised by viewing the harm being rooted in a separation of humans from nature, the solution to which would be a stronger environmental identity.

The code *facing ecological catastrophe* was emergent in five interviews and was applied where the human impact wasn't explicitly raised. Jemma expressed a somewhat fatalist perspective: "*We let our seas get too much more fucked up, then our land is gonna start dying. We won't have a world in which to live in*" and was moved to tears discussing it, indicating a high level of emotional engagement. Clare referred to saving and protecting the world. Terry believed that the world is in a condition that is beyond human understanding "*They're saying we're walking into something that we don't understand. Worldwide*." And Simone was overwhelmed by the catastrophe: "*All of it makes me sad. The amount makes me sad."* These interviewees felt the weight of an ecological catastrophe and a fear that it was runaway. Only two interviewees explicitly referred to *climate change concern*, instead there was an overarching concern of human impact on the environment, inclusive of climate change, but broader.

Whilst these are the thoughts and feelings of a small number of people, they are presented to provide insight into the complexity and depth of environmental concerns and identities held by marine citizens. These factors are not uniform, and they are arrived at through a range of personal journeys, but they are contributory to the desire to pursue acts of marine citizenship.

5.2.4. EMOTIONS

Emotions emerged as a theme within the data from the survey (n=100) and each of the interviews (Table 5.8). Emotions were connected to marine citizenship activities, the sea as a living place, and impacts upon it. Within the survey, emotional data emerged in the question about motivation for

participating in marine citizenship[25], centring around enjoyment and love. Most survey respondents coded for emotions agreed or strongly agreed that they were dependent on the marine environment for their wellbeing (78%) and recreation (73%). Conversely, 74% disagreed or strongly disagreed that they were dependent on the marine environment for their livelihood. They also largely had positive place attachment mean scores (mean = 4.37, range = 1.14 – 5.00, kurtosis = 5.332, skewness = -1.782). Emotionality about marine citizenship seems to be associated therefore with connection to the sea as a place which is depended upon for wellbeing and health.

Emotional data from the interviews had more breadth than in the survey and *love* (26 references by eight interviewees) and *passion* (14 references) were central emotional themes. The richness of the interviews elicited a wider set of emergent themes with less focus on the more negative *concern*. On the other hand, *shock* emerged in the interviews, particularly through recitation of triggering formative experiences.

Table 5.8 Emotion coding in online survey (n=100) and interviews with marine citizens (n=10) in rank order of coding frequency.

Survey	Interviews
Enjoyment	Love
Love	Passion
Concern	Sad
Passion	Calm
Calm	Shock
	Enjoyment
	Guilt
	Concern
	Regret
	Pride
	Frustration/Annoyed
	Envy
	Cry

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[25] References to simply caring for the environment were not coded as emotions as this was understood more as an expression of environmental identity or benevolence/universalism values rather than emotional expression. It was the quality of the caring that was coded for.

5.2.4.1. Enjoyment

Enjoyment was the most common expression of emotion in the surveys, inclusive of *happiness*, *pleasure* and *fun*. *Enjoyment* mostly came from spending time in nature and outdoors (connected with environmental identity and *universalism*): "*enjoy contact with the natural world*". Others enjoyed satisfying their *stimulation* value: "*Excitement of finding 'something new'.*", particularly so for citizen science participants. For some, the enjoyment came specifically from marine citizenship: "*I enjoy being part of meaningful and useful projects like this as I feel it is a way for me to contribute to helping the environment and animals around me.*"; and it was seen as an enjoyable social activity: "*I also enjoy spending time with other volunteers*".

In the interviews, enjoyment was particularly focused on happiness derived from enjoying the sea: "*it's always fun at the seaside, it's ice creams and stuff*" (Jemma); "*you know I'm so happy…I get to go to the sea every day and that means so much to me*" (Sarah). This contrasted with the survey respondents who talked more about discovery, hobbies and interests. The survey had a prevalence of respondents involved in citizen science which might indicate that these interests are a specific motivator for that kind of action, or alternatively it could be that the nature of the interviews led interviewees down a deeper introspection that went to more fundamental emotions beneath those of stimulatory interests.

5.2.4.2. Love

Love was referred to in the survey with similar frequency to *enjoyment*. 78.8% of the respondents coded for *love* were female (61.2% of all respondents were female). Respondents loved the ocean, coast, nature and marine life, their local environment, being outside and beach combing, "*doing things to feel helpful towards our planet and our oceans*", and learning. One survey respondent, who engaged in public outreach, made explicit connection between love and environmental protection: "*fall in love with it so that they care and change their practise*". 27 of the references to love were explicitly about the sea or engaging with the sea, and 6 were about love of nature, ecology or wildlife more generally, indicating that in many cases it is the unique relationship humans can

have with the sea that is a motivator for marine citizenship, rather than a general environmental or universalistic motivator.

The interviews exposed that, love was experiential: *"…it's the feeling of being in the sea and being on the waves and being underwater. I absolutely love it"* (Sarah); and about what lives in the sea "*I've always, always loved animals*." (Simone). Wildlife was a pathway to understanding and learning: "*it was the love of animals and then understanding that actually it was wider than that and then you learn don't you when you get older."* There was a tangible depth to the relationship interviewees have with the sea: "*I'm involved with the sea, I love the sea.*" (Marie).

Love was also place-based, respondents showing place attachment to their local coast and its specific features for example from the interviews: "*I love this little place here."* (Terry). And *love* was felt for water in general: "*I think I'd always loved the water, whether that be rivers, lakes, lochs, the sea.*" (Sarah); "*I'm a fish."* (Simone). In keeping with her high *stimulation* value, Clare loved the unknown of the sea: "*I love anything to do with adventure and not-knowing a whole realm, a whole sphere of sea. Adventure."* These data help us to understand more about the marine place attachment held by marine citizens (see 6.2.2).

Finally, there was a social dimension to the *love* felt by marine citizens, for example towards the marine group and the social connections made by it. For one group leader, the group was like a family and the leader was proud of the group cohesion: "*I'm quite proud of it, and I love it, and I love the people in it, and I love the fact that there is [a member] who's 60 and students who are 18 and they say happy birthday to each other on Facebook."* (Simone). Additionally, Elizabeth wanted *love* for the sea to be shared with others, reflecting her high *benevolence* value: "*we look at how we can entrust to people about what they're seeing so they don't just have that experience, so that they go away and they actually fall in love with it themselves*". *Love* here was understood as a medium for marine citizenship action. This connection was made explicit by Simone: "*So every time I go out if I see something that I'm not happy with I do it because that is what I'm passionate about and it's what I love,*

and that's why I feel responsible". For Simone *love* directly leads to action through a sense of responsibility or moral duty.

5.2.4.3. Passion

Survey respondents who talked about *passion* were female (92.9%), and were predominately passionate about the ocean/marine environment; the coast; marine biology; and contributing. Three respondents expressed a more generalized passion for *"the natural world", "nature conservation" and "the planet".* Some were also passionate about learning or developing skills. Interview data showed that *passion* was closely related to *love*, and both frequently appeared together in the same datum, but distinct in that it held more fervour and dynamism within it. "*Real passionate means I'm going to devote my life to it*" (John). Whilst *love* was a deep connection, *passion* was active: "*I love it, I live here…I always had a passion for it*" (Elizabeth); "*she has become passionately interested in the marine world and to the point of really sort of making [the marine group] happen.*" (John). *Passion* was shared, or increased through social participation: "*I think I've become more passionate and I've become more sensitive to everything because of the group."* (Simone); "*I think in the future a lot of when a government doesn't have funding the only way things will do is, like that, by engaging people to care and have passion*." (Elizabeth).

5.2.4.4. Calm

For four interviewees the sea represented a calming balm. Seeing and hearing it led to relaxation and *calm*. Simone felt this came from associations with holidays and Jemma felt this was a product of cultural upbringing "*if you go to the seaside it's to relax or to get healthy… we're taught them from when we're being read storybooks as children".* Perhaps surprisingly, only one survey respondent referred to calm of being by the sea as a motivation, suggesting that though this might be an experience many people feel, this doesn't necessarily connect with marine citizenship activities.

5.2.4.5. Concern

There were also negative emotions expressed in relation to marine citizenship. In the survey, *concern* as a motivator for marine citizenship was particularly

related to pollution, plastics, and marine environmental health/degradation including specific aspects such as birdlife. This theme included both explicit words, such as concern, fear or worry, and implicit expressions of there being a problem with the environment that needed addressing. There was a desire to share concerns: "*I want others to feel the same, and so I want to share my enthusiasm and concerns*." Others were concerned about future legacy, e.g. "*the quality of the marine environment for my own values and those of future generations.*" Most respondents expressed general concerns centred on human impacts and intrinsic marine environmental health, e.g. "*Concern for the abuse of ocean.*"

Concern was much less prominent in the interviews than in the survey and centred around worry for future generations: "*that feels like it's just…plundering what's there and not caring about…what's going to happen in the long term.*" (Sonia).

5.2.4.6. Shock

Shock related to specific human impacts upon the marine world: "*when we went to the Maldives we were like we'd like to see the real deal, so we hired a little small boat to take us to an island where the locals lived and we wanted to see how people lived. It was quite shocking.*" (Elizabeth); "*I think that was a real sort of shock factor to see a bird nesting with this sort of potentially lethal um piece of stuff in the nest.*" (Sonia); "*when I was working abroad as a diver, I remember one day coming up and not seeing any sharks and the five years before that, sharks. No sharks.*" (Simone). But there was also shock that others do not share attitudes towards the marine environment. And shock could also be a positive experience: "*As you went along it, um it was just like um the, you know the pages in the National Geographic. You would, these sort of little sort of explosions of acid yellow fish and electric blue fish and huge eyes looking out from holes in the rock and this kind of. And sharks sort of you know way down in the clear water sort of moseying along and I thought wow!*" (John). For John and Simone these were formative experiences in their marine citizenship journey.

5.2.4.7.   Sad

The most common negative emotion in the interviews was *sadness*, expressed not only verbally but physically during the interview with Jemma who was close to tears when she said "*I think the world has gotten into such a state*". This fits well with Jemma's high *universalism* and *environmental identity*, feeling harm to the natural world keenly. Elizabeth described how her partner had moved away from commercial fishing "*Because it was netting and you were waiting one day for a by-catch, and he just was coming home really upset*", emotional responses she shared with him. Elizabeth also 'medicated' with the ocean by being physically at the sea "*So you weren't pulled down by the sad stuff.*" For Simone there was an intersection between sadness and guilt: "*then I get really sad on Facebook because there's so many other things that I want to do. And then I get that complete depression about how, what's the point, I'm only this one person doing it. But then I wake up the next day and I think actually if I don't do it then I'll feel even more guilty, so I keep on doing it*". Simone called it "*activist depression*" and learning more fuelled the sadness. For Simone marine citizenship was an outlet to these emotions, preventing feelings of impotence and alleviating guilt.

Overall, emotional expression about marine citizenship was generally very positive in the interviewees. Whether that is because local marine citizenship provides a positive outlet for other emotions and/or because as an action it is derived from positive emotional responses was not clear in this dataset and requires further research.

5.2.5. SOCIAL EXPERIENCE

In the online survey, when asked about why they participated in marine citizenship, although not a consistent theme, 20 respondents gave social explanations. These respondents talked of meeting like-minded individuals, spending time with family and partners, and making friends. It was "*inspiring to be around a group of actively caring marine wildlife enthusiasts so we don't feel so alone in our job*" and there was a "*Sense of community*". For three of these

respondents they were participating to be with somebody else who had an interest.

To understand better how social motivations connect with other aspects discussed in this chapter, a cluster analysis was performed in NVivo on survey data coded as *social* together with qualitatively expressed environmental identity index items, environmental attitudes and basic human values (Figure 5.4). The cluster situates *social* on the same branch as *benevolence* and the environment as good for *wellbeing* and *health*. This branch is distinct from others relating to *environmental citizenship, stimulation,* and *concern*, suggesting there is a distinction between the human aspect of marine citizenship and environmental outcomes.
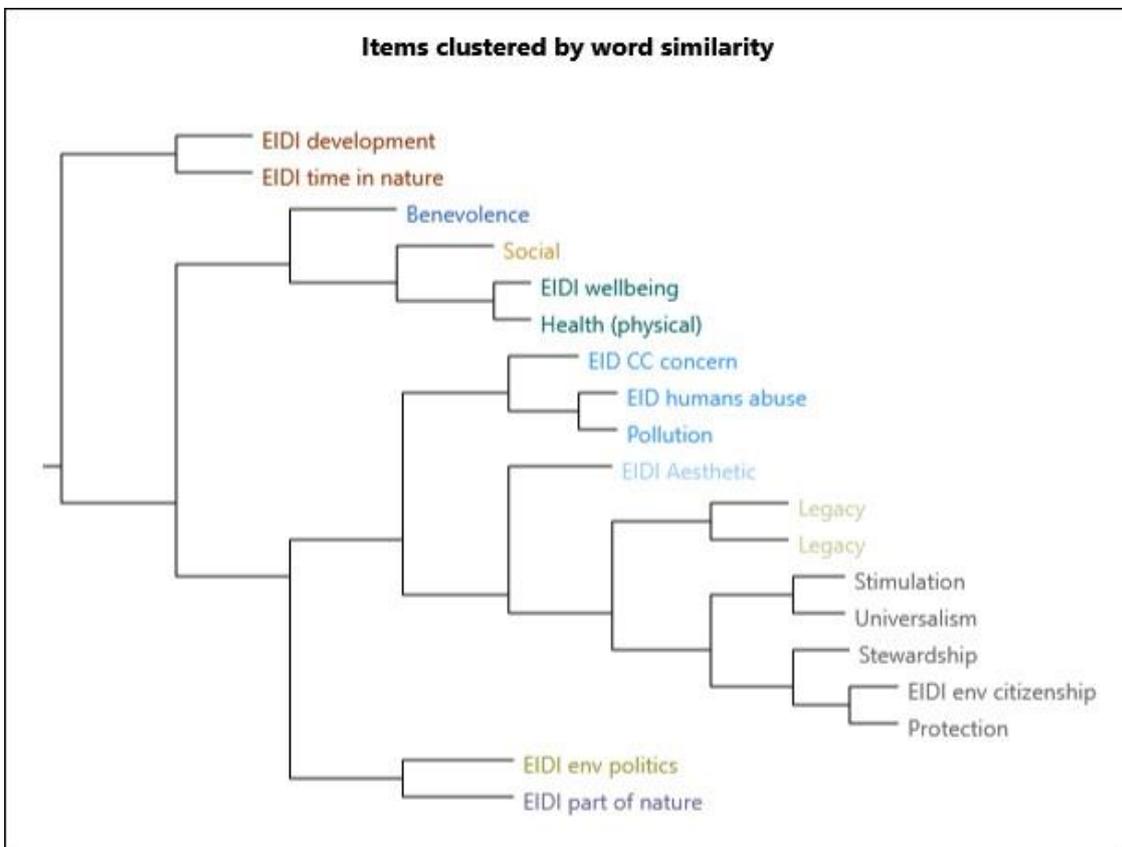
Figure 5.4 Cluster by word similarity of survey responses coded for environmental identity and concern, and basic human values, with social motivations for participating in marine citizenship. Clustering performed by NVivo 12 and uses Pearson correlation coefficient.

The interviews were conducted solely with marine group members, an inherently social form of participation, and the role of the groups as a social experience was referenced by eight of the ten interviewees. Marine groups provided general social interaction and were a ward against loneliness: "*lots of people just do a round of U3A, this, that, Coastwise, they pick and choose, it's*

an event, it's a reason to come into the town, meet friends, have coffee, so it's a social thing" (John). Via social connections, key individuals were able to recruit others: "*a woman…spoke and responded so enthusiastically I felt I could not <u>not</u> go*" (John); "*She's got a good team because she's a good person. And I feel that I wanna be part of that team.*" (Terry). Such loyalty directly motivated Terry to perform citizen science to collect information "*because I know that's beneficial to the group*". The marine groups also developed strength of feeling: "*I think I've become more passionate and I've become more sensitive to everything because of the group*" (Simone).

The social aspect of participating in marine groups created a 'tribe' of like-minded people with shared environmental values, developing into friendships: "*you start mixing with like-minded people in life, don't you, you kind of tend to you know, gravitate to each other…So our friend circles have changed*" (Elizabeth). Clare felt that a lack of a shared network inhibited participation in marine citizenship: "*That's the thing that stops you being a citizen isn't it, not feeling like you have any recourse to things that interest you or likeminded other people.*" and that the marine group was serving a specific social function "*the marine group, the biggest functions it now has is a kind of social function… Environmentally minded people are coming back to reinforce their beliefs, trying to find, desperately reach out to find someone else that feels.*" This observation was reinforced by members. The need for a social connection with like-minded people here mirrored the survey findings.

The marine groups and the public events they ran were an opportunity to extend that social community out into the public realm, facilitating social learning and recruiting new members. Sonia told me how she came to be involved in her marine group: "*Oh it was the fish festival down at the harbour, and they had a stall down there and they had a live critters little thing, so they had some lobsters, things in a tank. Um so we went to look at that and then we got talking…about stuff and plastics*". And for David this connection with others for learning was important for eliciting behaviour changes: "*I think there's still something quite important in a sort of face to face chat with someone … that is much more…likely…to make them make a different decision in terms of what they want*". Participation in the marine groups was both a means to educate

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others and for members to learn through the social connections facilitated by the group.

5.3. DISCUSSION

In this results chapter I have presented my research findings that relate to the internal, individual characteristics of marine citizens, as a way to understand in what ways those characteristics contribute to marine citizenship. In this chapter I set out to answer the research question: *How do motivational and value-based factors influence marine citizenship choices*? The results I have presented are a combination of identities and values that I purposefully set out to explore, plus some emergent findings, particularly in relation to emotional engagement and connection. Having considered the institutional and policy context of marine citizenship, this chapter changes the focus to that of the person, adding to my aim of producing an holistic understanding of this concept.

The findings presented have been drawn from both qualitative and quantitative data, using a mixed methods approach to integrate both data types in the analysis. This has primarily been done through the use of psychometrics and interview coding techniques which allowed theories of environmental identity, basic human values and environmental attitudes to be investigated in multiple ways. Figure 5.5 summarises the key findings presented in the above Results section.

This discussion situates the findings presented in this chapter within existing literature, particularly from the environmental psychology field. I consider the commonalities between the marine citizen participants in this study and other studies into environmental citizenship and pro-environmental behaviours. I also discuss how variables divergent to those commonly understood to be associated with marine citizenship might be connected with and diversify the range of people participating as active marine citizens.

I first reflect on the basic human values held by participants in this study, and then reflect on the emergent variables and their implications. I follow with a discussion about environmental identities and attitudes. Noting the importance of environmental identity together with the emotional connections marine citizens have with the sea, I draw this discussion together by introducing the

possibility of a marine identity as an underlying driver of marine citizenship. As an identity based on a type of place, marine identity is about having a specific connection with the ocean and viewing this as a part of oneself, or oneself as a part of it. As such it connects with the emotional bonds of marine place attachment, which I discuss in Chapter Six: Place. I expand further on this concept in Chapter Six, and in Chapter Seven: Synthesis, Discussion and Conclusions I draw together these ideas under a single model of social place identity and consider if marine identity is an important component for understanding motivation of marine citizenship.

Basic Human Values and marine citizenship
The distribution of *security, universalism* and *benevolence* were altered slightly from the standard basic human values circumplex, reflecting a conservation focus of environmental attitudes and citizenship. Self-transcendence values were high, and are predictive of marine citizenship intention but not of participation. High *stimulation* and low *power/conformity* were most statistically important. Qualitative findings revealed relationships between marine citizenship and all ten values:

- *Security*: knowledge and nature security, marine environment as a resource, cleanliness
- *Conformity*: non-conformist, peer pressure and conformity for social norming
- *Tradition*: family tradition, cultural lifestyle, formative experiences
- *Benevolence*: low scorers think about their own experience, high scorers about duty towards others/society
- *Universalism*: higher scorers have global scale thinking
- *Self-direction*: highly expressed in multiple areas of life, particularly older marine citizens
- *Stimulation*: learning about the marine environment/policy, the marine environment as a dynamic, unbounded frontier
- *Hedonism*: hedonism acts to reinforce other values, for and against marine citizenship
- *Achievement*: pride in own learning or achievements of the group
- *Power*: higher scorers value their own ability to influence, lower scores value collective action and public empowerment

Environmental identity and concern
Marine citizens were concerned about climate change and human impacts, weren't materialistic, and had strong environmental identity, particularly in relation to citizenship and spending time in nature. All four variables investigated predicted marine citizenship intention but only environmental identity and climate change concern predicted marine citizenship participation. Both scientific factual and moral elements influenced participation.

Role of emotions in marine citizenship
An emergent theme of predominantly positive emotions, such as love and enjoyment, motivated marine citizenship. Negative emotions were assuaged by more participation. Emotionality connected with the sea as a place of wellbeing and health.

Social experience within marine citizenship
Social motivations connected with *benevolence* values and wellbeing/health. There was a distinction between the human aspect of marine citizenship and environmental outcomes. Social experiences in the public realm may connect to social capital.

Figure 5.5 Key findings presented in this chapter – how person-based characteristics, identities and values influence participation in marine citizenship.

5.3.1. BASIC HUMAN VALUES – EXTENDING OUR REACH

Whilst much research effort has been applied to values and pro-environmentalism, it has typically focused on commonalities of value structures, particularly around egoistic-biospheric-altruistic (translating into *power / achievement*, *universalism* and *benevolence* respectively) value sets (e.g. de Groot and Steg, 2010), or self-transcendence (*universalism / benevolence*) vs self-enhancement (*hedonism / achievement / power*) (Cheung *et al.*, 2014; Katz-Gerro *et al.*, 2017). It tends to miss the potential influence of other basic human values and offers a simplistic association between values and environmental behaviours and citizenship. This study addresses this gap through the more novel approach of investigating all ten basic human values and the ways in which they connect to marine citizenship. The use of the Portrait Values Questionnaire and open-ended interview allowed quantitative and qualitative investigation of values.

The findings support previous research into values and pro-environmental behaviours and environmental concerns (Cheung *et al.*, 2014; Corner *et al.*, 2014; de Groot and Steg, 2010; Prati *et al.*, 2018) in that self-transcendent values, particularly *universalism*, were highly expressed relative to other values in marine citizens, with *universalism* and *benevolence* being closely positioned in marine citizens' value set. Marine citizens did not uniformly have high *universalism* and for some it was low, whilst *benevolence* was high, indicating that environmental concern can be directed at the impacts upon people as a group as well the wider ecosystem. This distinct contribution made by the two self-transcendent values has been made in previous research (Katz-Gerro *et al.*, 2017). Yet neither *universalism* nor *benevolence* were statistically associated with marine citizenship score within this group of active citizens, meaning they did not explain marine citizenship depth. Research proposing a significant relationship has typically focused on environmental concern rather than action, or specific pro-environmental behaviours, such as car purchasing decisions (de Groot and Steg, 2010), rather than environmental citizenship as I do here, and looked at participation in more general populations. Though these values align with an ethos of pro-environmentalism and may be a gateway into environmental concern, they are however not a pre-requisite, nor in this study did they influence marine citizenship depth.

Openness to change values have not often been investigated in environmental studies (Lucas, 2018) but there is some research which indicates a positive association for *stimulation* on climate change adaptation initiatives (Leviston *et al.*, 2015) and both positive and negative influences from *self-direction* on climate change concern and sustainability actions (Axsen and Kurani, 2013; Lucas, 2018; Prati *et al.*, 2018). *Stimulation*, an openness to change value, was the only value to show statistically significant positive relationship to marine citizenship score, particularly so for those participating in citizen science. This indicates that for those who value learning and challenge, citizen science may be a gateway to other expressions of marine citizenship. In Chapter Six: Place I present data which gives an insight into cultural understanding of the sea as being a frontier and challenge. The sea therefore may particularly lend itself to this value in a way other environments may not. *Self-direction* was strongly positive, particularly in older people, who are overrepresented in both this research population and generally in voluntary action. This may because people who are more experienced have higher self-efficacy and greater knowledge about how to access systems or effect change. This contradicts research suggesting people become less open to change with aging (Dobewall *et al.*, 2017), though it's worth noting that studies on value change over time are very limited and have only been conducted on cohorts rather than with individuals longitudinally. It's not clear that such designs can distinguish between generational effects and individual patterns of aging.

Again in keeping with prior research (Lucas, 2018), self-enhancing and conservation values were negatively associated with marine citizenship score, particularly *power, conformity* and *security*. However *security* and *conformity* in particular provide some interesting qualitative insights. In the case of *conformity* and its role in environmental citizenship, one must consider what is socially normal in the present day. Though concern around climate change has been rising, up to 85% in the UK and 60% in the US (Ipsos MORI, 2019; Kennedy,

2020)[26], to pursue environmental citizenship actions is still less common than to not, and even less so in regards to the marine environment which is not readily accessible to all people all of the time, and *conformity* was predicted to be negatively associated with pro-environmental behaviours (Schultz and Zelezny, 1999). Katz-Gerro *et al.*'s (2017) work on *conformity* demonstrated a complicated picture of both positive and negative relationships influenced by national cultural difference, and called for further research on this value. Twigger-Ross and Uzzell (1996) in their application of social identity theory to place identity, highlight the role of distinctiveness in creating the self-concept, and explain how place can be congruent to the self-concept. Understanding the non-conformity value as distinctiveness therefore allows social identity theory to be used to examine this value-action relationship.

Security value is also intriguing. Whilst *security* in this and previous research (Lucas, 2018) has been understood to work against environmental concern and citizenship, it could be seen qualitatively to be important for some marine citizens. Additionally, *security* was positioned relatively less conservation and less self-enhancing than is typical in a representative sample. It must be considered that marine citizens, though not primarily motivated by security, view security as being politically neutral. When taken with the position of self-transcendent values, which sit closely together, it can be understood that marine citizens are concerned about both people and the wider ecosystem and that they view environmental degradation as being a security threat to each and all. The quality of *security* expressed in the interviews supports this proposition, with concern about the impacts on the marine environment being harmful for both humans and nature. These emergent understandings of the nuances of values within marine citizenship would benefit from future direct empirical investigation.

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[26] Though surveys in 2020 indicate that amid the coronavirus COVID19 pandemic climate change concern may have significantly dropped in the US: https://fortune.com/2020/08/10/climate-change-global-warming-coronavirus/

From a methodological perspective, it's evident from these findings that investigating all basic human values adds important context to understanding environmental citizenship. The slightly altered distribution of some values and the qualitative evidence provoke new questions about how marine and other environmental issues have congruence with different value sets and call for further research into these nuances. From a theoretical perspective, these findings support what is commonly understood about self-transcendent values and environmental concern and action, but also highlight that openness to change values are significant in this debate, and that other values can also connect with environmental action. This research made tentative suggestions of synergies and overlaps of values that push at the boundaries. For example, *power* for oneself was uncommon in the entire population of the research, but the interviews gave sight to desire for *power* for public benefit. *Achievement* similarly could be conferred from the achievements of the collective in a marine group, facilitated by personal actions within the group. And *hedonism* supported other values through personal needs being met.

In a complex model of marine citizenship, values can be understood as being important for openness to environmental action, with universalism and benevolence promoting interest beyond the self, and stimulation promoting a desire to learn and experience. Where degraded quality of the environment is viewed as a risk, security value can be invoked. And environmentalism is still sufficiently not normalised as to satisfy or challenge the conformity value.

Within psychology, values are seen as an underlying personal priority, upon which identities are shaped and experiences are sought in order to support values. As fundamentals, values are important but have the potential to be expressed in a variety of ways. Expression of values is mediated by identity (Gatersleben *et al.*, 2014), promoting concrete behaviours that generate congruence with values. I will now turn to the discussion of identity.

5.3.2. ENVIRONMENTAL IDENTITY AND ATTITUDES

Whilst the attitudes investigated predicted intention to participate in marine citizenship, only climate change concern was found to be significantly associated with depth of participation. Climate change concern has been shown to motivate pro-environmental behaviours in young people (Stevenson and

Peterson, 2016), and 'worry' as producing more support for climate change and energy policies (Smith, N. and Leiserowitz, 2014). Other research into climate change concern demonstrates possible pathways between values and marine citizenship that are mediated by environmental attitudes. For example, *universalism* value is positively associated with climate change concern (Prati *et al.*, 2018), and egalitarian communitarians (equivalent to *benevolent universalism*) view the risk of climate change to be higher than do hierarchical individuals (*power, achievement*). As the qualitative data demonstrated, however, marine citizens share a broad range of environmental concerns, some of which were specific to the marine environment and less about general human-environment relationships.

The findings on environmental attitudes and identity in this research support existing understanding: high levels of climate change concern, perception of humans as abusive to the environment, low levels of materialism, and strong environmental identity are significant predictors of marine citizenship intention (e.g. Stern *et al.*, 1999 *inter alia*). As regards pro-environmental behaviours, non-materialism (or post-materialism, when referring to those whose basic needs are met so they seek higher order fulfilment (Inglehart, 2008)) has been found to be positively associated (Gatersleben *et al.*, 2014; Gifford and Nilsson, 2014). However in this research no such relationship was found with marine citizenship depth. In other research the relationship between pro-environmental behaviours and non-materialism is mediated by environmental identity (Gatersleben *et al.*, 2014; Whitmarsh and O'Neill, 2010). This research was not set up to test an attitude model, which might explain why no direct relationship was found between non-materialism and marine citizenship.

Humans as abusive of the environment is one of the attitudes incorporated in the New Ecological (formerly Environmental) Paradigm (Dunlap *et al.*, 2000), for which a significant difference has been found between the general public and environmental organisation members (35.5% and 83.0% respectively strongly agree, Dunlap and Liere, 1978). The proportion of the public sharing this attitude has increased over time (89% agree, Dunlap *et al.*, 2000), a similar proportion to this sample suggesting little difference in this attitude between marine citizens and the general population. As a single attitude, however, this too was not associated with marine citizenship participation.

Of these variables, it was environmental identity that was most strongly predictive of depth of marine citizenship participation. The theory of environmental identity is well established within environmental psychology and connects with both pro-nature values and intentions, and civic participation via identity politics (Clayton, 2003). A limitation in this research, is that the full 24-item environmental identity index (EIDI) metric was not utilised for practical reasons of the size of the survey and risk of respondent fatigue. Despite this, the 5-item constricted index was still found to be a significant positive predictor of both marine citizenship intention and participation, with considerable relative explanatory power in the former. Additionally, the qualitative data allowed all aspects of the full EIDI items to be investigated, from which a discrete and consistent number of items emerged, with *environmental citizenship* and *time in nature* elements of the index strongly indicated as directly connected to marine citizenship, consistent with literature on emotional affinity with nature (Kals *et al.*, 1999). Building on themes presented in Chapter Four: Citizenship, and pre-empting those discussed in Chapter Six: Place, these two aspects demonstrate the importance of place-based attachment via nature experiences, and civic and political responsibilities to marine citizens.

High EIDI score has been found to positively connect specifically to responsibility towards nature and rights for nature, and to represent a political/social identity (Clayton, 2003) and environmental stewardship (Dresner *et al.*, 2015). The environmental attitude questions indicate marine citizens hold strong attitudes that connect human impact on the environment with behavioural choices, via a pathway of concern about climate change and low valuation of material things. Within this set of attitudes both a strong sense of morality towards the relationship humans have with nature and factual reasoning drawn from scientific knowledge are evident. Scientific literacy has been found to have a polarised effect upon climate change risk perception according to underlying values, with hierarchical individualists perceiving risks to be lower when scientifically literate, whilst in egalitarian communitarians increased scientific literacy has a slightly positive effect (Kahan *et al.*, 2012). Similarly, political polarisation overrides education effects in relation to marine environmental concern (Hamilton and Safford, 2015). Given the distribution of values within this population, it may be that scientific evidence serves to

enhance existing morality. Moral and prosocial reasoning have previously been shown to drive ethical consumerism (Hardy, 2006; Kim *et al.*, 2012; Thφgersen, 1999) and develops early in childhood (Kahn, 2003) when many *time in nature* formative events occur.

5.3.3. EMERGENT INFLUENCING FACTORS – EMOTIONS AND SOCIAL EXPERIENCE

Emergent in this research was a strong theme of emotional engagement with the marine environment and with marine citizenship. It is beyond the scope of the investigation to empirically identify how such emotional engagement arises and the direct influence it has upon marine citizenship, and there is currently no research specifically examining emotions and marine pro-environmental actions. However insights can be drawn alongside other research into emotions and the environment more generally.

Emotional affinity with nature, interest in nature, and indignation positively predict nature-protective willingness and behaviour (Kals *et al.*, 1999). There are clear parallels between the understanding of emotional affinity as love of, freedom and safety in, and oneness with nature with the emotions emergent in this research, and a cross over between interest in nature and the *stimulation* value discussed above. Emotional affinity is seen to derive from positive experiences with the environment, and interest in nature from any experience in nature (Kals *et al.*, 1999), which is reflected in the qualitative findings here both in the environmental identity value of *time in nature* being strongly expressed, and the role of formative experiences in promoting marine citizenship. Kals *et al.* (1999) additionally found that the effect of time in nature was enhanced when this was done socially, indicating a social element to the formation of environmental connections which supports a role for marine groups in facilitating marine experiences and marine citizenship, perhaps by 'finding a tribe' and/or from the stimulated interest and social capital generated by knowledge exchange.

Emotions, morals, values and identities can be situated together in the context of prosocial behaviours. Hardy (2006) found that prosocial behaviour was motivated by prosocial identity (a heightened sense of moral obligation). Additionally, moral empathy was positively associated with dire and emotional

prosocial behaviours. Prosocial reasoning however was negatively associated with compliant and public behaviours, and positively associated with altruistic behaviours. Translating Hardy's finding to this investigation, one can replace prosocial with pro-environmental; compliant with *conformity*; and understand public behaviour as being an expression of status which supports self-enhancing rather than self-transcendent values. Climate change concern and the attitude that humans are damaging can be understood as a dire scenario, invoking empathy and emotional engagement. The drawing on and valuing of scientific evidence, referenced in 4.2.2.3, is an act of prosocial reasoning.

There is consistency in the need to spend time in nature to develop emotional connection and interest in nature, which has a positive influence upon pro-environmental behaviours and environmental citizenship. The body of research, coming from different fields, does however indicate a problem with terminology. When does emotional affinity with nature become place attachment or become environmental identity?

5.3.4. A MARINE IDENTITY

The strongest themes emerging in this chapter are a convergence of sense of responsibility towards others and/or the environment, spending time in nature being both formative and rewarding, and a cognitive interest in nature. These themes are present across the range of psychological factors investigated or emergent, and are consistent with other research including models not discussed here (for example the value-belief-norm model from Stern *et al.*, 1999). In acknowledging these commonalities, it is important to note that as individual marine citizens, there are variations in value sets and attitudes which diverge from this norm, and one advantage of the inductive, mixed methods design is to expose the influences of multiple factors in one study.

From this discussion, marine citizens can be seen to most strongly value their relationship with the marine environment. Experiential engagement satisfies a range of values and provokes emotional responses. The strength of environmental identity together with specific marine connectedness suggests that the key commonality between marine citizens is a kind of place-informed self-concept which is particularly nurtured by and expressed as time spent in/on/under/by the ocean, which, together with a strong sense of responsibility

towards marine environmental health, promotes more than a checklist of pro-environmental behaviours, but rather a moral and value-based framework that informs their way of life. I propose that this self-concept can be understood as a marine identity. In the following chapter I discuss in detail the evidence exploring the marine citizen relationship with the sea as a place, and supporting the possibility of a marine identity through social and place identity theory.

5.4.   CONCLUSION

Building on the extrinsic, institutional and policy-based understanding of marine citizenship as a concept that I presented in Chapter Four: Citizenship; in this Chapter I set out to add to our understanding of marine citizenship by investigating the intrinsic person-based factors that influence it. I set out to answer the research question: *How do motivational and value-based factors influence citizenship choices?*

I investigated the socio-demographics of marine citizens, and the identities, attitudes and values that they hold that relate to their participation in marine citizenship. I allowed space for new variables to emerge and have presented here emergent themes of emotions and social experience. Through this approach I was able to uncover commonalities between the marine citizen participants in this research and existing understandings within environmental psychology, and also extend our understanding of how divergent values connect with marine citizenship, demonstrating that other kinds of people can also become marine citizens.

In this study I have found that, marine citizens share commonalities with other groups who are engaged in the environment or engaged in civic participation. That despite these commonalities, there is individual variance which should provide hope for there being effective means of engaging people who do not fit some of the typical value sets that have sometimes been presented as pre-requisite. Additionally, though there are common attitudes or values expressed, these don't necessarily impact the degree to which people participate in active marine citizenship.

A key novel contribution within this chapter is the investigation of all ten Basic Human Values and how they relate to marine citizenship, furthering

understanding of how values not traditionally associated with environmental citizenship – such as security and stimulation – can also be a catalyst for marine citizenship. Additionally, the investigation of a full range of psychological factors through mixed methods as a novel approach has provided new insight into how these factors work together in individuals to promote marine citizenship.

In this chapter I have presented the picture of who a marine citizen is and challenged existing notions that this is only open to one kind of person. My findings contribute to the field of environmental psychology and introduce new facets, such as the importance of environmental identity and the relevance of all the basic human values, to the developing area of marine social science, within which marine citizenship can be comfortably situated. The findings within this chapter make a novel contribution to the study of marine citizenship and more general environmental citizenship through new ways of considering the role of values. Together with other findings from this research, the notion of a marine identity has emerged, which will be explored conceptually in Chapter Seven: Synthesis, Discussion and Conclusions.

6. CHAPTER SIX: PLACE

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6.1. INTRODUCTION

In this research I have taken an holistic approach to understanding and investigating the concept of marine citizenship. In Chapter 4 I laid out how marine citizens understand the policy setting of marine citizenship and how they understand marine citizenship, challenging prevailing framing of marine citizenship as a knowledge deficit, and instead situating the concept within the citizenship field. I introduced the idea of public participation in marine citizenship as a right and a duty, and argued that marine citizenship should be considered more broadly than being limited to learning about and engaging in pro-environmental behaviours.

In Chapter Five: People I introduced my findings on intrinsic qualities of marine citizens, finding that though, in keeping with prior evidence, many marine citizens held high self-transcendent values and strong environmental identities, there were active marine citizens who held different values but had nonetheless found their way to marine citizenship. The evidence presented in this chapter opens the door to possible avenues with which to engage a broader range of people in marine citizenship activities. The ways in which it was possible to connect all values and identities investigated to marine citizenship, suggested marine citizens may hold a kind of marine identity, which incorporates a strong emotional connection to the ocean as a place.

It is these ideas of emotional affinity to the sea and marine identity which are further explored in this chapter. The third piece to the marine citizenship puzzle is the role of the sea itself in motivating marine citizenship in addition or preferentially to other kinds of environmental or general citizenship. There are many ways to participate in society, but the sea appears to inspire some people to particularly want to take care of it.

As discussed in 2.3.2, previous research in environmental citizenship has indicated a role for place attachment and place identities as motivating factors for pro-environmental behaviours, yet have to date made little investigation into how place generates caring attitudes and values that support such actions and citizenship. The evidence presented in the previous two chapters promotes the ocean as being of particular interest to marine citizens through its stimulating and dynamic nature, and through the emotional connection it generates. Both

existing research and the findings of this research therefore make the case for a specific exploration of the sea as a motivator for marine citizenship, as distinct from other kinds of environmental citizenship. In this chapter I respond to the research question: *How do place-related factors influence the practice of marine citizenship*?

The chapter begins with an account of the geographical relationship marine citizens in this research had with the sea – how close they live to it, how frequently they visit it and how dependent upon it they are. This section highlights that being at the sea is an important factor for marine citizenship, particularly marine place dependency, and that being near or at the sea is something which these marine citizens tend to choose.

I then examine the place attachments held by marine citizens, looking specifically at the ocean as a place. The findings show that there is a strong attachment to the sea and that it is a generic marine place attachment rather than an attachment to a specific location or stretch of coast. Following this is an analysis of the place identities held by marine citizens which shows that multiple scales of place identities are held simultaneously, with local and global identities held most strongly, and that these marine citizens identify more strongly with the environment than with the people around them. Getting to the nub of this relationship with the sea, the final results section considers the unique qualitative relationship people have with the sea, and reflects on the sensory experiences of the sea as a place.

In the Discussion I bring together these place-related findings and situate them amongst existing place literature and research about the sea as a place. The findings contribute to geographical understandings of human place attachment by identifying a quantifiable marine place attachment that transcends locality, and an adapted place attachment tool with which to measure this. The interrogation of place identity, according to society, environment and scale, supports those researchers who have found people hold multiple place identities. In bringing together place-based factors, this Chapter contributes a novel, holistic understanding of the relationship marine citizens have with the sea, and, together with the findings presented in Chapter Four: Citizenship and

Chapter Five: People, I have introduced a novel concept of marine identity as having a role in marine citizenship.

6.2. RESULTS

6.2.1. GEOGRAPHICAL RELATIONSHIP TO THE SEA

In 2.4.3 I highlighted some of the mixed opinions within the literature about the effect of proximity to the marine environment upon marine citizenship/pro-environmental behaviours for coastal and non-coastal residents. The online survey provided access to active marine citizens right across the UK, and 280 active marine citizens responded to a range of questions relating to their geographical relationship with the sea with a view to developing understanding about the potential influence that proximity might exert upon marine citizenship.

6.2.1.1. Coastal residence

Survey respondents had lived in the place they currently live for a mean of 19.5 years (range of 0 and 79 years). The duration of residence as a proportion of a respondent's age clearly demonstrates (Figure 6.1) that the majority of respondents are more recent arrivals, with few having lived in their location for most of or their whole life. This suggests there may be some degree of choice in the location they live in. Indeed when asked on a scale of 1 (strongly disagree)
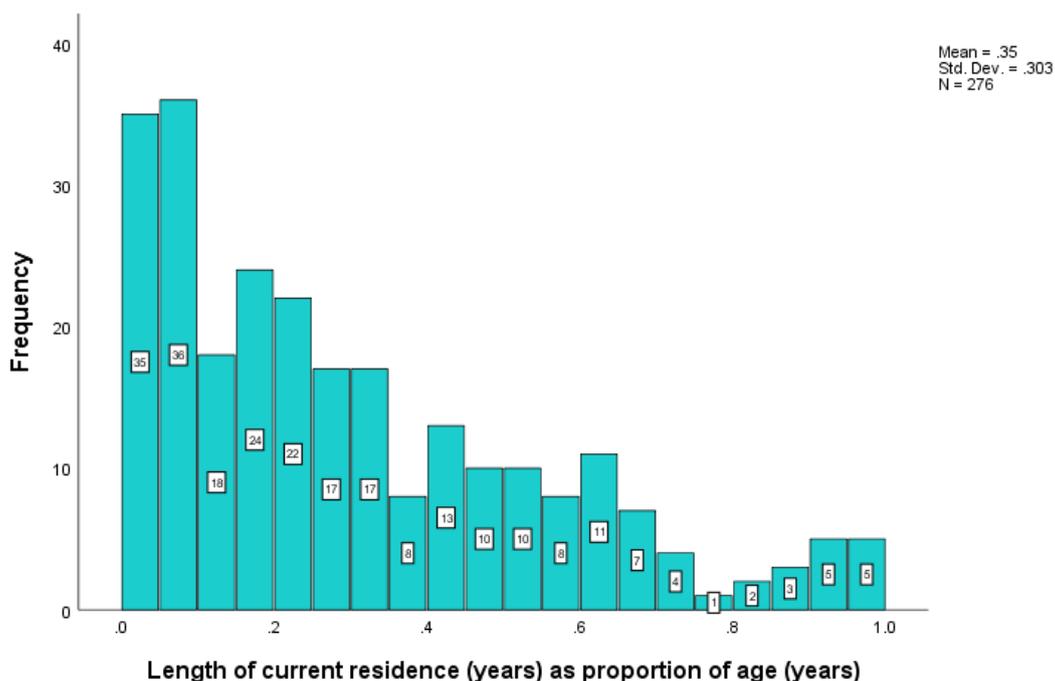
Figure 6.1 Length of time (years) that survey respondents have lived in their current location as a proportion of their age (years). N=276.

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to 5 (strongly agree) how much they agree that living in this place was a conscious choice, respondents had a mean score of 4.46.

As well as length of residence in the current area, I also calculated respondents' distance from the sea (3.4.2.2). Figure 3.2 provides a map of postcodes of survey responses, which covers much of Great Britain and includes inland areas. To understand distance from the sea, the postcode was used in two ways (Figure 6.2): 1) calculation of how many postal districts away from the sea a postal district is; and 2) calculation of the shortest travel time to the coast by car (or foot if very close) on Google Maps from that postal district. Respondents were strongly concentrated in closer proximity to the sea, with 83.5% (n=273) living 1-2 postal districts from the sea, and 72.9% living within 20 minutes' travel time.
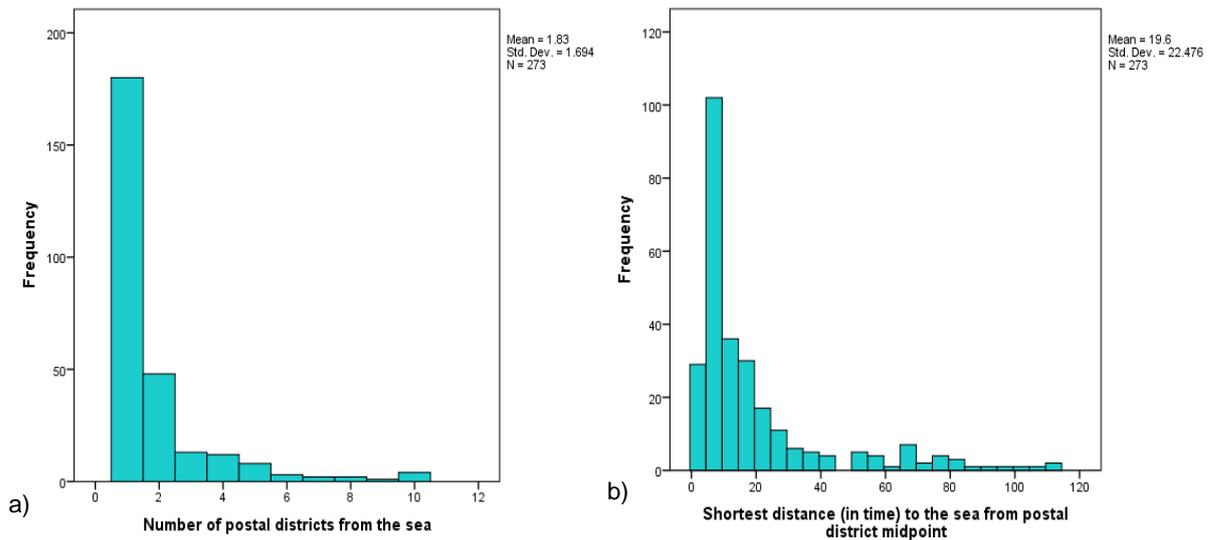
Figure 6.2 Distance from the sea as measured in a) number of postal districts and b) shortest distance in time by any means of travel (typically car). N=273.

Of respondents who said it was their conscious choice to live where they lived, a high proportion were residing in close proximity to the sea (

Figure **6.3**). In interviews, the choice to live by the sea was expressed as related to recreational dependency, emotional wellbeing and easy access, e.g. "*We've been surfing here for years and years and amongst the sea, means that we were coming down more often than not, so it made more sense to be here than there.*" (Sonia); "*I feel really happy here, yeah. Next to the sea*" (Sarah).
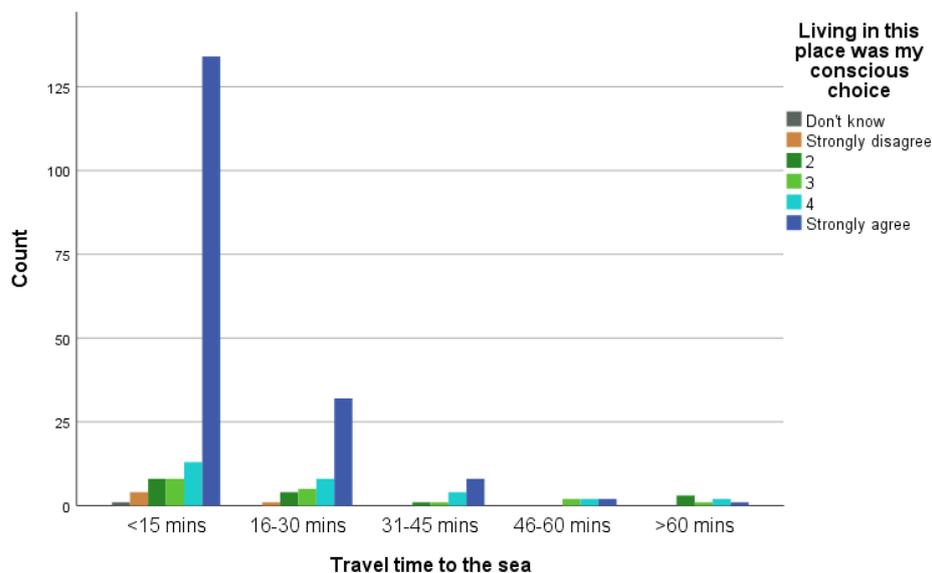
Figure 6.3 Travel time to the sea in relation to choice to live in current place. N=280

Though there was a clear majority of respondents residing close to the sea and by choice, statistically, travel time to the sea, residence time, and residence time as a proportion of age were not associated with depth of marine citizenship using the marine citizenship score (see 3.4.2.2 for how this is calculated). This suggests a threshold effect in which marine citizens tend to live close to the sea, but their level of engagement is not then further influenced by proximity. Though it should be noted that proximity was positively associated with increased participation in marine decision-making (4.2.4.1).

Nonetheless, the qualitative data indicated that for some respondents proximity was important for marine citizenship. One survey respondent felt that not living in proximity to the sea was a barrier for marine participation "*I find it tricky to give as much time as I would like as I do not live that close to the sea.*" Another recognised this barrier for others and through their marine group they better understood "*some people's disconnect with the ocean when they don't live near it*". However a different respondent felt proximity shouldn't be a barrier to marine citizenship as everyone can make consumer choices: "*This applies to everyone in the world, but those who live near/use beaches have more direct options e.g. litter picking."* Both distance from and proximity to the sea made it more special: "*I have never lived close to the sea and view it as something special*" and "*most people who live by the sea respect and revere it*". One respondent had a marine citizenship goal "*to bring people closer to … their environment*". This sentiment was echoed within the interviews, with coastal residents perceived as being

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more marine environmentally conscious compared to urban residents – "*round here everyone's like no plastic straw please but if you go inland they're like yeah, whatever."* (Sarah) – and exposure to the sea being important for connecting with it, "*You know because you live here but if you live in the middle of a city you have no connection to the ocean*" (Elizabeth). Yet Sarah felt proximity created ambivalence: "*there's loads of people who live round here and they wouldn't use the beach regularly because they just see it as the beach*". Proximity was seen as an important factor for human connection with the sea but perceptions varied as to how it exerts influence.

21 survey respondents referred to proximity to the sea as being a motivating factor in their being engaged in marine citizenship, stating reasons such as "*A lifelong interest in nature across all areas and a great love for the sea as I have always lived near it."* And "*I live by [local bay] so it makes sense to get involved here."* Living in close proximity to the sea made marine citizenship easier "*Walking on the beach with my husband and our dogs daily, we probably collect 3-4 carrier bags of rubbish each day*"; and supported development of environmental awareness and environmental identity through spending time in nature "*Always been keen in environment and living at sea has made me more interested in marine issues*", "*As a sailor and coastal resident I have been privileged to spend a lot of time on the water and in coastal environments*". Growing up near the sea continued as a motivator for marine citizenship, even in later life inland "*I grew up by the sea. Scarborough is my home town although I spent almost my entire working life in London."*; and a commitment to marine action made coastal living a necessity "*back home in London … it was so far from the sea and any of these specialisms that I'd developed*" (Clare).

Interwoven in the data were indications that proximity in childhood in particular enabled formative experiences connecting people to the ocean: "*I grew up here and in [coastal town] before going away to work. (I came back 12 years ago) As a child we were always on or near the sea*" and "*I feel passionately about the marine environment because I was born and bred here, and I would like my grandchildren to have the same experiences as I had*." Spending time in nature and viewing nature as important for child development were elements of Environmental Identity Index that promoted attachment to the sea (5.2.3).

These findings challenge simplistic notions of proximity as promoting marine citizenship and complicate the relationship. What the data do suggest is that the connection between coastal living and marine citizenship is likely to be mediated through place attachments and convenience.

6.2.1.2. Visits to sea

Most survey respondents frequently visit the sea, with 40.7% (n=114) typically visiting once a week and 31.8% (n=89) visiting daily (Figure 6.4). Of those interviewees who talked about sea visits, all typically visited every day or most days. This was recreationally, to walk or surf for example, to work, or for marine citizenship (typically citizen science recording or beach cleaning). Activities were often combined, for example, from the interviews: "*I go to the beach most days so if I'm not working at the beach that day I'll go for a walk and I'll always pick up when I go.*" (Sarah). The act of citizen science recording was sometimes a driver for visiting the sea "*So what I'm doing now [monitoring seals], I do this nearly every day, from, April, end of April through to the end of November*" (Terry).
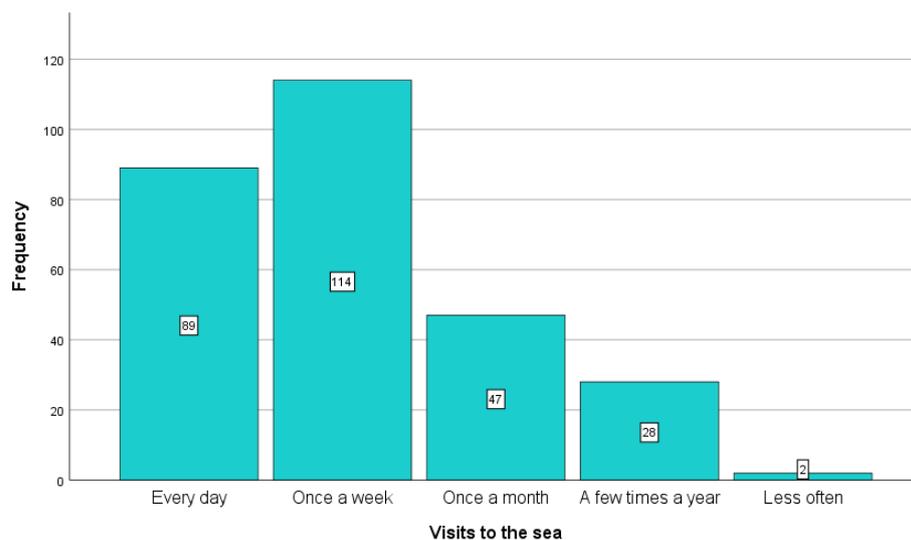
Figure 6.4 Frequency of visits to the sea by marine citizens. N=280.

A broad, positive relationship was found between higher sea visit frequency and residency closer to the sea (Figure 6.5). However it wasn't possible to run a statistical test on this due to the high prevalence of daily and weekly visits and people living close to the sea. Unsurprisingly, the vast majority of those visiting the sea on a daily basis, also lived within a convenient travel time from the sea,

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however those who go less often than a few times a year, though a small minority, were not those survey respondents who lived farthest from the sea, indicating other barriers to visits. Such barriers and enablers emergent from the data are presented in 4.2.2.4.
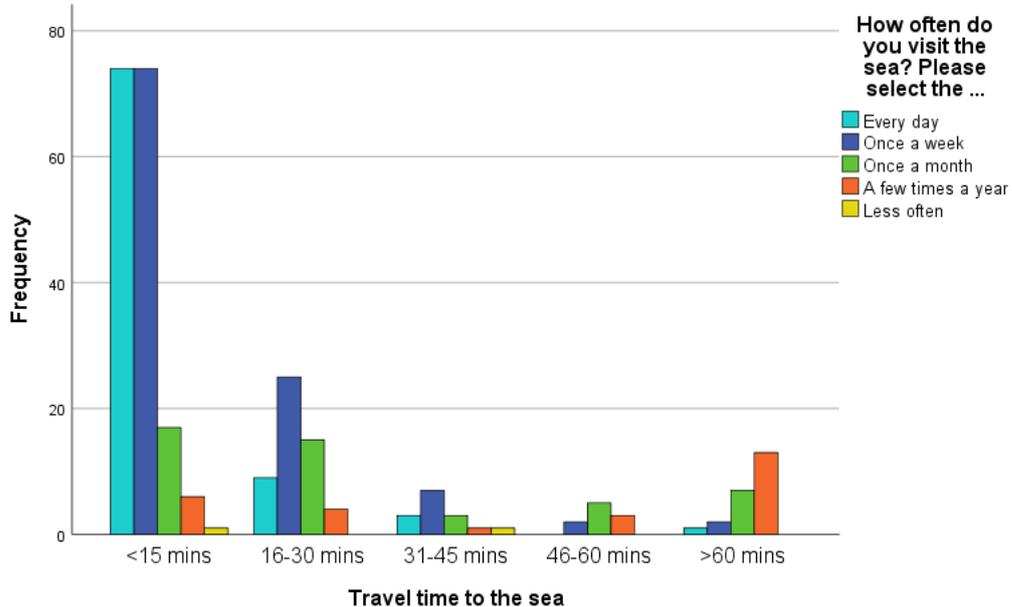
Figure 6.5 Sea visit frequency in relation to time taken to travel to the sea. N=273.

A Chi-square test for association between frequency of sea visits and marine citizenship score (grouped into three categories: low, medium and high) was statistically significant. $\chi^2(8) = 22.557$, p = .004. Three expected cell frequencies were less than five so the results are reported with caution, though these three cells do fit the pattern presented by the data. Table 6.1 presents the observed and expected counts from this test and shows a pattern of higher than expected counts between high marine citizenship and frequent visits, reducing to lower than expected counts with less frequent visits; and the opposite for low marine citizenship. Though a cautious conclusion, the data do present a pattern of positive association between visit frequency and marine citizenship score.

Table 6.1 Chi-square observed and expected counts for association of frequency of sea visits and marine citizenship score, from a sample of marine citizens. N=280. Figures in green indicate a ≥1 higher than expected count; figures in red indicate a ≥1 lower than expected count.

			Marine citizenship score		
			Low	Medium	High
How often do you visit the sea	Every day	Observed	16	47	26
		Expected	24.2	47.4	17.5
	Once a week	Observed	31	59	24
		Expected	30.9	60.7	22.4
	Once a month	Observed	16	26	47
		Expected	12.8	25.0	47.0
	A few times a year	Observed	11	17	0
		Expected	7.6	14.9	5.5
	Less often	Observed	2	0	0
		Expected	0.5	1.1	0.4

Interview data suggested that visiting the sea is important as it develops connectedness with the marine environment. Being at the sea was seen as a means for humans to learn about and better understand it, nurturing an attachment and seeing it as home, and being in the environment provoking thought about human impact upon it. These expressions weren't exclusive to the natural environment, but also incorporated other people as being important for place attachment, as if seeing the sea should be considered a fundamental right: "*it's probably about living in place isn't it, and getting to know the people. And getting to know a bit about the shores and what lives on them and what lives in the waters.*" (Sarah); "*A lot of children in [coastal town] have never even seen the sea and that's just horrible to think that*" (Elizabeth).

Eight of the ten interviewees described social connections through sea visits including professional and friendship networking; something to do and see with family, loved ones, and visiting friends; and a local community and culture that is formed around the presence of the sea (e.g. Clare: "*It's quite old fashioned seasidey*"). These real-world, social interactions provide an alternative social framing to marine citizenship, which has historically been more centred around environmental science (e.g. Terry: "*People on this path just love the seals. They're gobsmacked. They don't expect to see them. You hear their little yelps of pleasure.*"). This intersection of social and environmental qualities of the marine environment is further discussed in 6.2.3.

6.2.1.3.   Place Dependency

To better understand the differing ways in which survey respondents depend on the sea I used Likert scale questions to evaluate marine place dependency based on three key factors: livelihood, wellbeing and recreation. Few respondents said they depended on the sea for their livelihood, but both wellbeing and recreation showed strong dependency on the sea as a place (Figure 6.6). For this group of marine citizens, the sea represents a crucial place for wellbeing and leisure.

a)

b)

c)
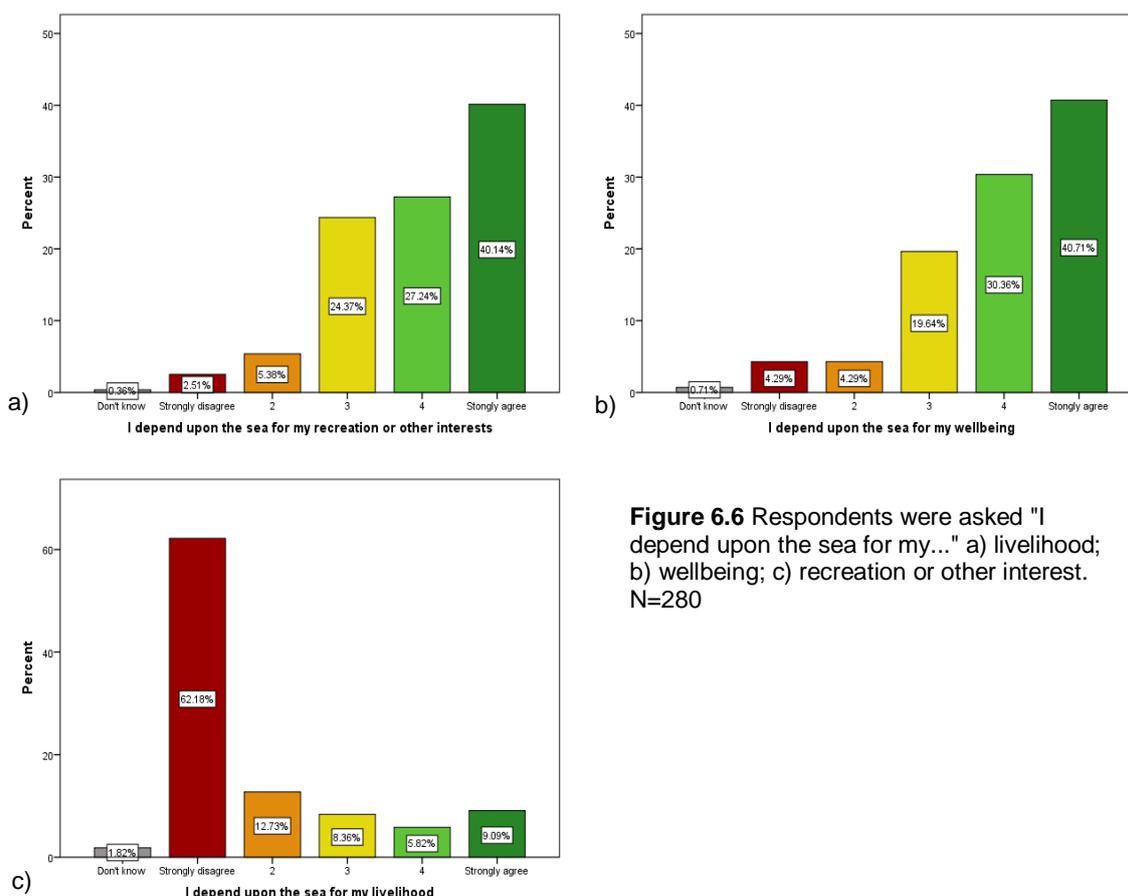
Figure 6.6 Respondents were asked "I depend upon the sea for my..." a) livelihood; b) wellbeing; c) recreation or other interest. N=280

Livelihood dependency was the least cited in the survey. Of the 41 survey respondents who said they agreed or strongly agreed that they were dependent on the sea for their livelihood, 31 gave information about their professional marine connection, most of whom were some kind of research scientist or student (11) or working for a conservation organisation (7). Only 3 were engaged in private marine business, the rest were involved in some kind of consultancy work. The relationship between occupation/education and this marine citizen sample is discussed in 4.2.1.3. In the interview data, only one interviewee referred to livelihood based marine dependency, noting that his own

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job was dependent on the fishing industry. Despite other interviewees having jobs that were inherently connected with the marine environment, this was not brought up in the interviews in this context of dependency.

Conversely, 199 survey respondents agreed or strongly agreed that they were dependent upon the marine environment for their wellbeing. Six interviewees talked about wellbeing, implicitly or explicitly, derived from the marine environment, though none talked about it in explicit dependency terms. There was considerable crossover with the positive emotion codes of calm, happy, and so on which is discussed in 5.2.4. In addition to derived sense of wellbeing raised by interviewees, David indirectly connected the sea with wellbeing through the medium of recreation: "*it gives you hobbies or whatever and that in turn gives you better wellbeing*". Clare and Sarah talked about there being a gap or opportunity to improve others' wellbeing through exposure to the marine environment, for example through social prescribing. Overall exposure to the marine environment was always described in positive terms for wellbeing. Though interviewees did not explain their choices to live by the sea in wellbeing terms, explicitly, or in a sense of being dependent on it, the findings suggest that choice to live by the sea (discussed above in Section 6.2.1.1) may be an expression of marine dependency for wellbeing.

A vast majority of survey respondents (188) also expressed agreement or strong agreement that they were dependent upon the sea for recreation or other interests, a similar proportion to wellbeing. For some, expression of their marine-based interests also contributes to their enhanced wellbeing through, for example, health, relaxation, exercise, or socialising. Eight interviewees expressed connection between the sea and recreation/interests. For Jemma and Sonia, their recreational pursuits motivated their choice to live in their current location by the sea, and the access to the sea and associated recreational lifestyle motivated David in his relocation. Again this was not explicit, but implies a degree of dependency for recreation. Clare made a connection between recreational dependency and desire to conserve the marine environment: "*if your passion is the marine thing you're obviously gonna be like woah we've got to protect fish stocks, we've got to protect some of this biodiversity, we've got to protect the beauty and whatever for other*

generations". This provides a potential pathway from marine recreation and interests to marine citizenship, via conservation and protection.

A multiple regression was performed and marine dependency (using Likert scales as ordinal data) was found to be highly significantly predictive, accounting for 17.1%, of marine citizenship score $F(3,270) = 19.830$, $p<.001$, R^2adj. = 0.171. Coefficients are displayed in Table 6.2. Though livelihood dependency was less common in this sample, within a model using all three forms of dependency, it was nonetheless the most influential upon marine citizenship.

Table 6.2 Multiple regression of dependency upon marine environment for livelihood, wellbeing and recreation/interests predict a marine citizenship score as a measure of active marine citizenship. N=273. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.890.

Variable	B	SE_B	β	Sig.
Intercept	3.131	0.811		p=.000**
Livelihood	0.771	0.151	0.296	p=.000**
Wellbeing	0.411	0.210	0.133	p=.051
Recreation/interests	0.411	0.219	0.126	p=.062

Notes: B = unstandardised regression coefficient. SEB = standard error of coefficient. β = standardised coefficient. Significance **p<.001

Performing individual regressions between each dependency factor and marine citizenship score however, found all three to be highly significantly predictive. Table 6.3 indicates that livelihood dependency accounts for more marine citizenship (13.1%) than do wellbeing (8.5%) and recreational (7.4%) dependencies, but less than the three taken together in the above model (17.1%). Taken together, these regression findings suggest that all three kinds of marine dependency can drive marine citizenship; that in most cases they act synergistically; and that livelihood dependency can produce strongly motivated marine citizens. It is important to note here that the livelihoods typically were based around knowledge and service industry rather than extractive industry and this relationship may not be as strong for other types of livelihood.

Table 6.3 Results for regression between individual dependency variables and marine citizenship score.

Variable	F	Adj.R^2	Sig.	β
Livelihood	42.308 (1,273)	0.131	p<.001	0.366
Wellbeing	26.971 (1,278)	0.085	p<.001	0.297
Recreation/interests	23.112 (1,277)	0.074	p<.001	0.278

Notes: β = standardised coefficient.

The geographical factors discussed here show some clear relationships to marine citizenship participation, particularly unconscious marine dependency and sea visits. However what most comes out of these findings is the more qualitative relationship with the sea, which is powerful enough to promote a choice to live by the sea, and a sense that regular exposure to the coast can nurture marine attachment.

6.2.2. MARINE PLACE ATTACHMENT

As seen above in Section 6.2.1, geographical relationships with the sea can be seen as contributory (or a reflection of) an attachment to the sea. Theories of place attachment view the human connection to place as significant for a range of behaviours, including levels of acceptance of change (see 2.4.3). This research was designed to investigate a specific attachment to the sea using modifications of standard metrics and this approach has been validated through the emergence of the above findings relating to geography.

6.2.2.1. Measuring marine place attachment

Marine place attachment was calculated as a mean score from a set of nine items (see 3.4.2.2). Table 6.4 presents mean scores for each of these items together, an overall mean marine place attachment score, and a refined score after eliminating negative items. What can be seen from Table 6.4 is that this cohort of marine citizens were much more attached to the sea as a type of place than they were to their specific local beach or coastline. This is evidenced by the 'agree' mean score for "There are many coasts in the UK and in the world where I could live", which indicates that respondents would generally be happy at any coastal place in the world. Also of note is the low mean score for strong family connections. This finding connects with the findings in Section 6.2.1.1 on residence time, and adds value to the finding that most respondents made a conscious choice to live in their current location. These marine citizens typically chose to live by the sea, any sea, even if it was away from family connections. This quantitative finding was mirrored in the interview data with six of the ten interviews coded for place attachment. Four of these talked about the sea as a destination: "*being close to the sea will be a definite factor in whether we move or where we choose to move*" (Jemma); "*being in the water doesn't matter where the water is… I think I could be in any sea*" (Sarah); "*Whatever it*

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is, we have to be by the sea" (Elizabeth). Two interviewees talked about an attachment to a specific local place, for example Terry who grew up and lived in the same area his whole life said "*I live here, yeah. I never give that a second thought. But if I lived in [neighbouring town] I wouldn't be me, I'd be someone else.*" Though the local place was formative for Terry, his place identity was stronger at global than local scale.

Table 6.4 Items measuring marine place attachment in an online survey of marine citizens. 1 = strongly disagree, 3 = neutral, 5 = strongly agree. Figures are underlined where the score is negative for place attachment.

Place Attachment item	N	Mean	Std. Deviation	N/a***
I take pleasure in looking at the sea	278	4.81	.565	
Living in this place was my conscious choice	250	4.46	1.045	30
I miss the sea when I am not there	280	4.44	.914	
I want to be engaged in affairs of the sea	279	4.21	.961	
The marine environment is the best place for the things I like to do	266	4.17	1.074	13
The sea is part of me	278	4.03	1.130	
I am proud of the marine environment	275	4.03	1.149	
I have strong family connections to this place	255	2.82	1.688	23
There are many coasts in the UK and in the world where I could live*	267	3.75	1.449	12
Place attachment mean score	280	3.90	.612	
Place attachment refined mean score**	280	4.31	.677	

Notes: * The scale of 1 = strongly disagree to 5 = strongly agree is inversely associated with local place attachment therefore, unlike the other items, a higher score is lower local place attachment. This item's scores were inverted prior to processing for the calculation of means, with an inverted item mean of 1.98. **This is the mean removing items relating to family connections and coasts which were low place attachment scoring and related more to specific location-based attachment. *** N/a was respondents who did not answer because they did not live near the coast; these were treated in SPSS as system missing so as not to affect mean and other statistic calculations and to distinguish from 'don't know' responses.

From the place attachment items in Table 6.4 it seems that family connections and the specific coastal location items did not contribute to overall marine place attachment and a selected place attachment score was created excluding them, which was confirmed with a multi-dimensional scaling which placed these two items far away from the rest of the cluster. This refined marine place attachment score has been used throughout this thesis.

The mean marine place attachment score was 4.31 from a theoretical possible range from 0 – 5. The survey respondents produced a range of place attachment scores from 1.14 – 5.00, but the distribution was heavily skewed

(-1.26), demonstrating that this sample of marine citizens were highly attached to the sea as a place.

6.2.2.2.   Contextualising marine place attachment

Place attachment was expressed qualitatively within both the survey and interview responses. It strongly intersected with environmental identity: time in nature (see 5.2.3.3) and reinforced the quantitative data that attachment was predominantly specific to the marine environment as a place, rather than a particular coast or the place of residence. Examples from the survey of this marine place attachment explicitly as a motivator for marine citizenship include: "*An absolute passion and connection to the sea*"; "*To feel closer to the marine environment*"; "*simply appreciating the sea for what it is in all its guises*". Some respondents also talked about the environment more generally as motivating their marine citizenship: "*Value our countryside and wildlife*" and "*The value I place on the environment in general, and the issues facing particularly the marine environment.*" Attachment to the marine environment more generally however was prevalent across the data, for example as discussed in the Emotions section, 5.2.4.

Marine place attachment was a significant, positive factor in both intention as a marine citizen and marine citizenship actions, measured by a regression between the marine place attachment score and marine citizenship score: $F(1,278) = 14.004$, $p<.001$, R^2adj. = 0.045. Marine place attachment was also reported as being enhanced by marine citizenship with seven survey respondents citing place-based outcomes of their activities. Four of these reported that their visits to the sea had increased through participation "*Visit the coast more often*"; three expressed increased observation when at the sea, engaging more with their surroundings "*I am generally now much, much more observant and inquisitive*"; two were more interested and excited when visiting the sea "*It has made me more excited about some of the wildlife that is unique to my area of coastline*"; and one felt more at home there "*I feel more at home on the beach, not just a visitor*". Note, some respondents expressed more than one of these aspects. For these marine citizens their attachment to and experience of the sea as a place was enhanced by their citizenship activities. Additionally, marine place attachment was positively associated within

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increased participation in marine decision-making (4.2.4.1). Marine citizenship therefore can be a means of building place-based relationships with the sea as well as a consequence of them.

Marine citizenship was felt to be important for marine environmental health for reasons of nurturing marine place attachment. Seven survey respondents made this explicit, describing ways in which marine citizenship "*forges a more personal connection to the ocean*". This might be locally based through preservation of what we know "*people become more involved in their local area so will become more passionate about protecting it*"; and our impacts upon it "*vital to connect people with their local habitats and how their activity impacts on them.*" Some respondents felt that understanding and emotional connection with the sea were consequential: "*I've found people protect what they love and understand so I feel to protect marine environmental health we need citizenship projects to allow people to come together and make a difference*" and "*the marine environment is under threat through ignorance of its importance and marine citizenship is a way to understand and get closer to the environment*". Relating back to the discussion about experiential factors promoting marine citizenship (Chapter 5: People, 5.2.5 and below Section 6.2.4.3) there was a suggestion that "*Only by direct experience and contact can one get any true impression of the importance and majesty of the marine environment*". For these respondents the direct experience of the sea's qualities, our impacts upon it, and our scientific understanding of it were all important for marine environmental health, and marine citizenship taking place within the marine environment was considered to be a means of promoting this form of marine place attachment.

6.2.3. PLACE IDENTITY

Place identity is often presented in the literature alongside place attachment, though it differs as being about how place contributes to sense of self, rather than about emotional engagement with place. This section builds on the proposed concept of marine place attachment by examining how place is incorporated into identity in the context of marine (and more general environmental) citizenship.

Respondents to the survey were asked to score from 1 (no sense of belonging) to 5 (very strong sense of belonging) the extent to which they felt they belonged to the social and, separately, to the built and natural features of the environment (after Scannell and Gifford, 2010) at a range of scales from local to global. This was to provide a scalar place identity measure, and to distinguish any differences between the two classes of environmental and social aspects of place identity. Both social and environmental aspects of place identity scored positively (mean above 3.00) across the population, with negative skewness in all cases (Table 6.5). Identities towards physical and natural environmental features showed more positive kurtosis than towards social features, indicating more consistency in responses as a group.

The Europe scale elicited the weakest sense of identity. Explanations as to why respondents felt the least attached to the European scale were not elicited but data show that people felt their local to national scale places were more relatable at the time of the survey. This was even starker for the world scale for those who value the interconnections we share ecologically and through globalisation, an expression of Universalism basic human value (see 5.2.1).

The global scale elicited the strongest sense of identity. At all scales, more belonging was felt towards environmental than social aspects, typically scoring around half a point higher on the mean. Marine citizens are attached to both the people and the environmental nature of place, but more so to the environmental and particularly at global scale.

Table 6.5 Respondents were asked "To what extent do you feel a weak or a strong sense of belonging to the social or built and natural features of the following environments?" with 1=no sense of belonging, and 5=very strong sense of belonging. Table describes distribution of responses for all survey respondents.

Scale of identity	Nature of place	N	Rank of mean	Mean	SD	Skewness	Kurtosis
Neighbourhood	Environmental	279	3	3.95	1.135	-0.918	0.252
	Social	277	7.5	3.55	1.156	-0.488	-0.420
Region	Environmental	279	2	4.11	1.065	-1.302	1.648
	Social	275	6	3.59	1.092	-0.356	-0.452
UK	Environmental	278	4	3.94	1.151	-1.231	1.357
	Social	276	9	3.46	1.167	-0.399	-0.452
Europe	Environmental	273	7.5	3.55	1.283	-0.677	-0.154
	Social	273	10	3.21	1.278	-0.326	-0.480
World	Environmental	279	1	4.23	1.216	-1.929	3.632
	Social	275	5	3.78	1.342	-1.012	0.456

To examine how these two classes of place identity across the scales relate to each other, a bivariate correlation was performed (Table 6.6). This contributes to the understanding of multiple place identities across scale and type – environmental and social. All place identities correlated with a significant positive linear relationship (mostly at $p<.01$), except for five pairs at Europe and World scales which were not significant. Respondents in this sample hold multiscalar place identities which incorporate both social and environmental aspects of place, as shown by the skewness in Table 6.5, but there are differences between these aspects.

The strongest social-environmental correlations are matched scale, indicating respondents tend to have feel similar intensity of belonging to both social and the built/natural environmental features of the environment at the same scale. There are also stronger correlations between adjacent scales, for example between Neighbourhood and Region on both measures, and European and World, indicating a scalar radiation of identity. Weakest correlations are between scales farther away from one another. While correlation between European environmental place identity and others is generally weak, social European place identity correlates strongly – those who identify at the European level do so strongly with both the social and environmental features of it. Finally, social identity scales all correlate reasonably highly with each other, whilst environmental place identities show less strong associations at scales between local and global, suggesting that social place identity is less discriminatory by scale than environmental place identity. Put another way, these marine citizens felt belonging towards all people, but environmental belonging was strongest at local and global scales.

The qualitative data for 19 survey respondents allowed connection to be made between these place identities and marine citizenship participation. Such references typically referred to the natural marine environment and only referred to people in the context of raising awareness or understanding. Of these, 11 referred to their local coast: "*I find it interesting learning about the local environment*"; "*Love of my local environment*"; "*getting to know different areas of coast around where I live*". In the interviews, Jemma said "*just being connected to the place where you are. I think it helps how you feel about yourself and also helps you find your place*", relating local place identity to a

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sense of wellbeing and belonging. Local place identity was positively predicted by residence time (expressed as a proportion of age) for both environmental and social features, but environmental showed a stronger relationship (Environmental $F(1, 273) = 20.264$, $p<.001$, R^2adj. = 0.066, Coefficient B = 0.965; Social $F(1,271) = 8.116$, $p=.005$, R^2adj. = 0.029, Coefficient B = 0.643). There was also a small effect on regional level place identity for environmental features: $F(1,273) = 4.161$, $p=.042$, R^2adj. = 0.011, Coefficient B = 0.420. No other scalar place identity measure was influenced by residence time. This presents a possible pathway between marine place attachment leading to a choice of residence by the sea, the duration of which positively promotes a local-scale place identity.

As a motivator of marine citizenship, interest in local coastal action was cited more often than the global motivator of, for example, climate change. Even where global processes were being considered, many respondents did so in tandem with their local experience. Despite this, it was only those with global place identity (both social and environmental) whose degree of self-reported consideration of impact on the marine environment was positively predicted (Environmental: $F(1,276) = 5.100$, $p=.025$, R^2adj. = 0.015, Coefficient B = 0.130; Social: $F(1,272) = 6.709$, $p=.010$, R^2adj. = 0.020 Coefficient B = 0.132).

Whilst relationships existed between residence time and place identities, and place identities related to one another in a scalar way, no statistically significant relationship was found between marine citizenship score and any type of place identity. To interrogate this further, I developed a second metric that sees scale of place identity as an indicator of relative preference. Reflecting work done by Devine-Wright *et al.* (2015) in which relative global identity was found to be associated with climate change concern, I created a new variable for place identity by subtracting global from local environmental place identity scores in which a negative score represented a prioritisation of the global scale, neutral an equal prioritisation, and positive a local prioritisation. Akin to Planet First or Country First in the aforementioned work, but given the findings of this research, Planet First or Neighbourhood First. This score was then plotted against marine citizenship score (Figure 6.7). A regression was also performed and found that though the association was small, higher global identity

compared to local identity led to higher marine citizenship score $F_{(1,277)}$ = 5.026, p=.026, R^2adj.=0.014.
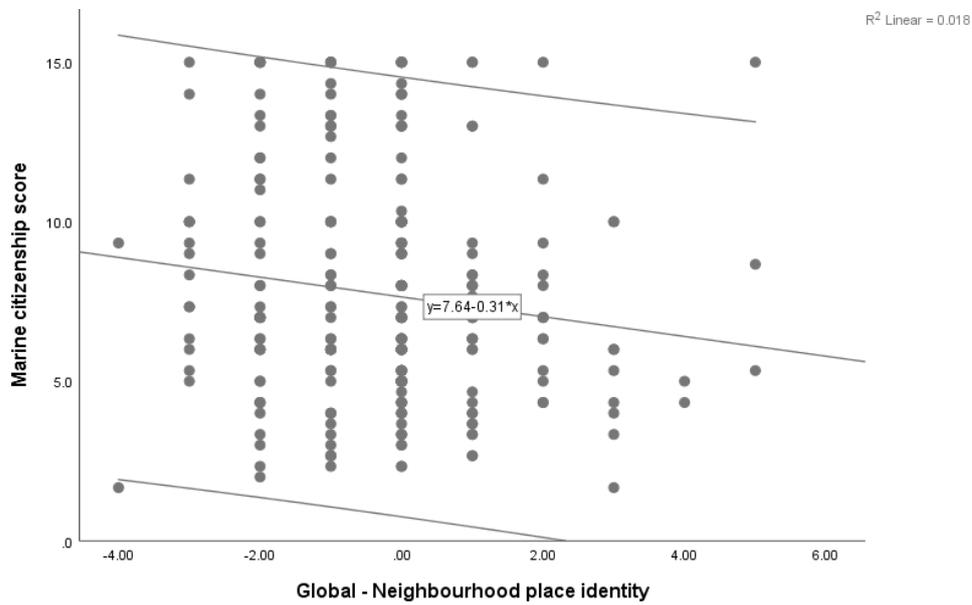
Figure 6.7 Relationship between global:local environmental place identity and depth of marine citizenship in marine citizens, N=280. Negative score = high global scale identity; positive score = high neighbourhood scale identity. Increasing marine citizenship score means more activities performed which are devoted to marine environmental wellbeing, with increasing disruption to normal day-to-day activities (see Chapter 3: Methods.) Outer lines are 95% CI.

Table 6.6 Bivariate correlations of social and Environmental place identities at a range of scales from local to global. Spearman correlation coefficient rho: -1=perfectly negative linear; 0=no relationship (red); 1=perfectly positive linear. 0.1-0.3 = small/weak positive (orange); 0.3-0.5 = medium/moderate positive (yellow); >0.5 = large/strong positive (green). **p<.01 (2 tailed)

Social place identity	Mean SD N	Social place identity					Environmental place identity				
		Neighbourhood	Region	UK	Europe	World	Neighbourhood	Region	UK	Europe	World
Neighbourhood	3.55 1.156 277	1	.616**	.280**	.128**	.186**	.605**	.374**	.157**	.043	.058
Region	3.59 1.092 275		1	.394**	.311**	.287**	.399**	.640**	.230**	.221**	.163**
UK	3.46 1.167 276			1	.365**	.340**	.112*	.206**	.607**	.213**	.175**
Europe	3.21 1.278 273				1	.537**	.028	.169**	.184**	.719**	.389**
World	3.78 1.342 275					1	.119*	.246**	.194**	.330**	.593**
Environmental place identity											
Neighbourhood	3.95 1.135 279						1	.552**	.243**	.112	.116
Region	4.11 1.065 279							1	.362**	.238**	.272**
UK	3.94 1.151 278								1	.310**	.286**
Europe	3.55 1.283 273									1	.429**
World	4.23 1.216 279										1

6.2.3.1. Scale

Given the prevalence of universalism, attachment to the sea as a place in the world vs a specific local beach, and this interesting range of place identities, scale was looked at as a specific coding scheme, mirroring levels used for place identity analyses. This section does not only look at place identity scale, but how scale of place was important for marine citizens more generally.

Local scale was the most highly referenced (50 refs) in the interviews, and present in all ten. Discussion in the interviews about local scale tended to be focused on the local people/culture or the local natural environment, and connecting the two – a representation of the social-environmental place identities discussed above. For example, respectively: "*I think people round here get it and they get it because they're next to the sea and they see it…The people out there are not connected to it.*" (Sarah); "*We were awash with wildlife and easy places to find it*" (Elizabeth); "*There are so many beaches here. Some of them are quite difficult to access*" (Marie). There was no particular pattern of data themes with local place identity score, though those with lower social local place identity tended to be more observant rather than participatory when talking about local people. Most data relating to local place attachment was about the third person – engaging the local people in marine citizenship, the attitudes of the local people towards marine citizenship activities, engaging local people in spending time in marine nature and so forth. This is probably a reflection of the interview sample being drawn from the marine groups where much of their activity is focused on community engagement.

There were only three interviewees referencing the regional scale. Elizabeth had an atypically high score for regional social place identity and this appeared to connect with the geographical scope of her network which extended through an English region. Terry also talked about regional networks of organisations working to gather data over this scale. There was also expressed a relevance of regional scale for the migrations and movements of marine mammals which aren't limited to a single stretch of coast. National and European scales were similarly cited and data was most focused around a policy context.

Global was the second most highly referenced scale, referred to 41 times by 9 interviewees. There was a strong theme of the world as being one connected

system and a need to approach marine (and other) issues from that scale: "*The way I approach anything is on an almost literally global scale. The economy, or the sea…It's virtually all blue and the land is only 14% of the area and you see these sort of sea current diagrams, everything is connected. So the sea is a global problem*" (John); "*marine citizenship is just a part of like world citizenship… I think all of us…should look at ourselves more as people without borders*" (Jemma). Interviewees reflected on marine citizenship as something that has global benefits, and that the larger the scale of a marine organisation the larger its reach. There was a sense of this being a natural system with human boundaries artificially laid over it which required this larger-scale coordination, e.g. "*People have territorial rights over it, but it's still the sea.*" (Terry).

Two survey respondents considered marine citizenship to be beneficial for marine environmental health through a lens of scale. One believed marine citizenship to be "*pretty vital, particularly locally where we can set an example with behaviour, monitor local wildlife (populations and individuals), campaign and network.*" And another that marine citizenship will "*help to look after our local and therefore global environment through interconnected practices*". The former was drawing on the power of community-based action to effect change and influence others. The latter demonstrated an idea of local stewardship as pieces of a global environmental puzzle. This sense of local action having larger scale positive impact, and there being a responsibility to be a piece of that puzzle, also emerged in the interviews: "*I think it's every person's responsibility to be aware of what's going on around them, both in their immediate location and the world, and respond to that*" (Jemma). Therefore, as well as connecting with place identity, scale was also relevant to processes of marine citizenship and environmental action.

6.2.4. THE SEA - THALASSOPHILIA

The findings above indicate that there is a specific connection between this group of marine citizens and the sea as a place; that this connection promotes a marine place attachment (which I call thalassophilia); and that it drives significant life decisions, such as choice of where to live. It becomes necessary therefore to consider what are the characteristics of the sea that promote this

connection and what are the qualities of the connection between these people and the sea.

The interview data allowed an exploration of these qualities that the survey data did not, demonstrating how this mixed methods approach is an effective means of investigating this subject. Emergent in the interview data were descriptions of the way the sea and marine citizenship make people feel in terms of emotions (discussed in 5.2.4), and the material qualities of the sea that promote attachment. This section considers three prominent themes that emerged about the sea: the quality of the sea, the lack of boundaries to the sea, and the sensory experience associated with the sea. The emergent intersection between these sea-specific findings and human and environmental values is discussed in Chapter Seven: Synthesis, Discussion and Conclusions.

6.2.4.1. The quality of the sea

Interviewees spoke of the cleanliness and quality of the sea and coast as being important to them. For Sarah, this perceived health of the marine environment connected directly to her attachment to a stretch of coast: "*I think I could be in any sea…and any coast, unless it was covered in litter…Yeah I think I attach really easily to beaches and places.*" And for David the quality of the water was important for his recreational activities in the water. Marie was inspired to do marine citizenship by the perceived high quality aesthetic of her local coast. It was John's experience with rich, biodiverse waters outside of the UK that triggered his interest in the marine environment: "*He said well look, you've probably had the best experience of scuba diving that you will ever have in any part of the world because there're no tourists here, there's no pollution, you go to anywhere else and it won't be as good. And that sort of really you know on the sort of conservation front that sort of really made me think wow.*"

Elizabeth demonstrated her strong local place identity and marine place attachment by claiming intimate knowledge of the quality of the sea for locals, and warning that outsiders may not understand the true picture: "*You know because you live here, but if you live in the middle of a city you have no connection to the ocean, unless you have a holiday somewhere, and even then you're seeing really the polished version of it.*" However, whether or not these perceptions are accurate, they can nonetheless be inspirational perceptions

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when it comes to wanting to protect or conserve the marine environment, as seen above.

These understandings of the quality of the marine environment fit together with other themes discussed in this research such as Security basic human value (5.2.2.1), and environmental values that separate out humans from nature. The sea as a clean or pristine environment is further discussed below in the context of sensory experience.

6.2.4.2. Without boundaries

The idea of the sea being a place without boundaries was strongly expressed by interviewees. Data related to the physical and intellectual lack of boundaries and expressed a sense of freedom and challenge inspired by this. This was appealing to the interviewees, and reflects the high level of Stimulation and Self-Direction basic human values of the overall survey population (5.2.2.3).

Freedom and sense of space was well-expressed by Sarah: "*on land you can sort of see everything can't you, you're sort of a bit stuck here aren't you? Stuck on land. But in the sea you could go anywhere… if I drive to like Birmingham, I feel constricted, like I feel a bit claustrophobic and I'm like I don't know where the sea is*". Clare expresses the connection between the unknown and sense of challenge: "*And I love how much isn't known. That's great. Like sticking a tag on a shark or a whale that you've, that you know almost nothing about the life cycle of, was just mind-blowing….There's like, there's an adventure thing there I think. I love anything to do with adventure and not-knowing a whole realm, a whole sphere of sea. Adventure.*" And David makes clear the connection between sense of space and the intellectual challenge the sea poses: "*There's something that I think about the sea is the space isn't, like you when you get to the edge of the sea there's a big vast space. And there's something cool about that, in that there is no land…I think it changes every day as well which is interesting isn't it*".

Whilst these concepts of freedom, challenge and dynamic space don't emerge in the qualitative survey responses as motivations for marine citizenship, what is frequently cited is *interest*. Interest in the wildlife, the sea, and learning about it are all frequently mentioned as a motivation for marine citizenship. The

interview data therefore may provide insight into the kinds of connections being made by other survey respondents in how the sea piques their interest.

6.2.4.3. Sensory Experience

Based on quantity of coding, it was evident in the data that it was the experience of the sea that had the most significant effect upon interviewees' connection with the sea. Six interviewees talked about the physical and sensory feelings they associated with the sea in the context of their relationship with it. My *visual* code had the most text coverage, by four interviewees, whilst five referred to *movement. Touch, space, cleanliness* and *sound* had less coverage, by three interviewees, and *temperature* and *olfactory* senses were only briefly referred to.

Data coded for *visual* sense related to seeing the sea, seeing the movement of waves and the overall aesthetic of the sea, for example: "*It's beautiful*" (Simone); "*for me it's not seeing the sea, it's seeing the breaking waves.*" (Sarah); "*when I first came and looked at the sea here, it literally takes your breath away, I mean literally…the glisten of the sea, with the sun catching it, and the blue, and then on a dark day, the dark moodiness of the sea*" (Elizabeth). The colour of the sea was important to Sonia's creative output: "*I used a lot of sea colours and sea related things.*"

It was the sight of wildlife or human products in nature that created a shock factor (see 5.2.4.6) for John and Sonia, and Simone also felt moved to action "*Because of what I was seeing*". This process of visual experience being part of the pathway to marine citizenship can be picked up through other responses in the interviews. Sonia felt "*it's lovely to see so many people in the sea*" indicating that she values the human experience of the sea. Sarah and Simone made a direct link between seeing and concern: "*we'll take them to the beach and then they're like oh this is really bad. I think they have to see it, they have to be a part of seeing all the rubbish wash up*"; "*and then seeing it for your own eyes, that's really helpful.*" Elizabeth felt a responsibility to build on what others see at the ocean to develop deeper feelings in them: "*we look at how we can entrust to people about what they're seeing so they don't just have that experience, so that they go away and they actually fall in love with it themselves*", which may relate to her own personal experience of being at sea "*your eyes are more open*"

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when you're at sea, you're seeing those problems and then you're seeing solutions". Sonia used the visual impact of marine litter to create a public message via art: "*I just found bucket-loads of plastic, so I…arranged it in colours so it looked like a rainbow. It was so bright and colourful that I wanted to make something with it*".

Though it didn't elicit as much data as visual sense, *movement* was referred to by more interviewees. The sea was seen as being powerful, greater than people: "*I like that feeling that it's stronger than you. And you're only there at the whim of the ocean because it's letting you be.*" (Jemma); "*And it's wild and it's, you know. In the winter it's just so rough and scary but beautiful.*" (Simone), perhaps connecting to environmental identity of people being part of a larger system and opposing anthropocentrism. Sarah also expressed the physicality of being in the sea as being important: *"it's the feeling of being in the sea and being on the waves and being underwater*" connecting with the visual experience of the water's movement. David and Simone described the physicality of marine recreation: "*generally riding along a wave is a physically nice feeling*" and "*When you dive it's like flying. Isn't it?*" Elizabeth didn't refer to the movement of the ocean, but did describe movement as being energising: "*we'd run as fast as we could and we'd jump as far as we could, and just to make the giggle factor in your body again, just bring life back*" which articulates an emotional benefit of movement which perhaps the sea provides.

Touch, sound, temperature and *smell* elicited a sense of wellbeing through the sensation of experiencing the water and sand and tended to group together into a more holistic sensory experience: "*the smell and the taste and how it feels on the skin, I suppose it's sensory.*" (Sarah); "*Put my feet in it, and I walk by it, and the noise, I can hear it from my bedroom window*" (Simone); "*the sand is so white and, that when you walk on it, it literally squeaks*" (Jemma); "*the water came in at this near freezing temperature. It's alright until it gets to your ears. Like sticking icy fingers into your brain. It was amazing. Absolutely amazing.*" (Jemma). As well as the personal experience of marine citizens, Elizabeth again invoked the idea of utilising these experiences in other people: "*my god that really gets inside you because you're touching the animal, and, um, you've seen the animal's pain and then you look at your own stuff, what you'll go through*"; "*if you allow them to touch and feel something it's different, and if you let them*

experience something it's different again" (Elizabeth), again expressing her strong *benevolence* value.

Space was mentioned by three interviewees. The size of the ocean, its limitlessness, with implication of freedom: "*It's just that sense of space as well. Sometimes you feel hemmed in, when you're inland*." (Jemma). This sense of space occurred in interviewees who had positive *hedonism* and *stimulation* values (Section 5.2.2.3).

Cleanliness was a theme that arose within the data. This was coded as sensory where it was experiential but didn't relate to a specific sense: "*it's just horrible to swim in isn't it, with stuff floating around*." (Sonia). It wasn't only referred to in this way though, but also metaphorically by Jemma: "*just by sitting here, it can, it sort of, I'm not in the sea but the waves are washing it off me*". Collectively there was an impression given that the sea was considered to be clean or pure, capable of cleaning or purifying people.

Overall the data indicate that the ocean is a potent source of a range of sensory experiences with connection to values. Sensory experiences promote both connection with the ocean and its inhabitants, and provide a catalyst to protect or preserve it for its own good and for human benefit. When combined with the emotional responses such experiences provoke (Section 5.2.4), the ocean can be understood as an environment with particular resonance for humans.

6.3. DISCUSSION

In this chapter I have presented the findings that contribute to answering the research question: How do place-related factors influence the practice of marine citizenship? The analysis presented here relates to the ocean as a place, capable of provoking intense sensory experiences, and deeply attaching humans; together with the ways in which marine citizens identify with place more generally; and how all these factors relate to marine citizenship.

The analysis incorporates quantitative data from standard and adapted measures of geographies of place, and is contextualised with qualitative data. This mixed methods approach has allowed the development of new concepts such as marine place attachment, and allowed inductive exploration of the

marine citizen-ocean relationship. Figure 6.8 summarises the key findings presented above.

Geography of the marine citizen
Though most marine citizens in this research lived near the sea, most of them chose to do so to satisfy wellbeing and recreational need, and very few had always resided there. Living close to the sea was not a statistically significant driver of depth or thickness of marine citizenship, but marine citizens nonetheless held strong and diverse views about what influence proximity to the sea has for marine citizenship. Tentative indications of a positive relationship between frequency of sea visits and depth of marine citizenship indicate a possible indirect connection between proximity and marine citizenship, where visits are affected by convenience.

Place dependency
Marine citizens hold multiple strong dependencies on the ocean, particularly in relation to wellbeing and recreation. All three types of dependency showed positive association with both intention and practice of marine citizenship. Such dependencies may underlie choice to live near the sea. Where marine livelihood was connected to the knowledge and service industry, this was the most strongly individual motivating factor of all regressions performed in this research, and the combination of all three dependencies explained 17.1% of marine citizenship, raising the notion that other factors contribute to the development of marine place dependency.

Marine place attachment
Application of a standard place attachment metric adapted for the ocean as a place indicated that marine citizens possess a strong marine place attachment that transcends localities. From this a novel metric is proposed to identify marine place attachment. Marine citizenship was found to be a way to build place-based relationships with the sea and also comes as a consequence of such attachments.

Place identity
Standard scalar place identity measures were used to interrogate the local – global scale of both social and environmental place identities. Marine citizens were found to hold multiscalar place identities, particularly strong and local and global scales, which was most pronounced for environmental place identity. Where global scale identity was larger than local, it had a small positive influence on marine citizenship.

The ocean as a place
Emergent findings indicated that the ocean is a discrete environment capable of creating attachment and dependency, through personal experience of the sea. Most prominent were understandings of the quality of the sea, the lack of confining boundaries and the freedom represented by the ocean, and the sensory experience of the ocean. Such experiences intersect with values held and might be assumed to be the initial gateway to a web of place relationships with the ocean that ultimately promote marine citizenship.

Figure 6.8 Summary of key findings presented in this chapter – marine place attachment, place identities, marine place dependency and the unique relationship between people and the ocean.

In this discussion I consider these findings in relation to existing place research, and discuss the unique capacity of the ocean to bind humans in this way and how other fields may be able to shed light on these findings. The chapter therefore contributes understanding to the specific marine element of environmental and general citizenship, and to place research, and has connections with fields such as environmental psychology, human geography and sensory anthropology and geography.

6.3.1. GEOGRAPHIC LOCALITY

Past research has indicated that residential proximity to the marine environment modulates marine citizenship (McKinley, 2010) but that living in a coastal area

does not necessarily predispose residents either to engage in or support environmental developments (Devine-Wright and Howes, 2010). This research found marine citizen respondents typically lived close to the sea, however proximity was not found to have a statistically significant direct association on marine citizenship score. Marine citizens were found to seek proximity to the sea, rather than proximity motivating their marine citizenship. Related to this, a tentative positive association was found between visit frequency and marine citizenship score. This may indicate the way in which proximity can modulate marine citizenship in a bidirectional way. Being close to the sea enables outdoors citizenship activities to be more easily performed, but likewise being an active marine citizen at the coast will itself promote marine visits.

Rather than the proximity itself being a driver, I suggest from the findings presented in this chapter that the real motivator underlying any relationship with visits and proximity is in fact the marine citizenship itself. This is evidenced by the strong propensity for marine citizens to choose where to live and therefore to have made the choice to move near to the sea, indicating marine citizens in this research at least, are mobile and able to express elective belonging to place rather than becoming marine citizens because of where they live.

To understand this further one can turn to place research. Whilst there has been a notion that cosmopolitan, mobile people are less likely to be interested in local issues, Gustafson, (2009) contested this with research on frequent travellers in Sweden. Gustafson's findings largely resonate with my own, with higher education being associated with more travel; travellers expressing strong sense of belonging at local scales (see Section 6.2.3); and being involved in civic activity at all scales. In fact in their study more frequent travel was associated with higher civic participation than with those who stayed local and rarely travelled.

Being at the place of attachment, the ocean, is also reinforcing to a number of facets of marine citizens' values and identities. Views expressed included increased wellbeing, stimulation, and contemplation of human impacts derived from being immersed in the marine environment, which resonates with research discussed below on sensory experience (Section 6.3.4). Marine citizens are seen here to be highly dependent upon the marine environment for wellbeing,

recreational and, in some cases, livelihood reasons. These marine place dependencies were strongly statistically significantly associated with marine citizenship score. Livelihood dependency, where that livelihood was related to non-extractive occupations, was the strongest relationship of all those quantitatively measured in this research. This may be the first time that place dependency has been investigated for its direct influence on marine citizenship. Though not previously investigated as a direct driver of environmental citizenship, local place dependency has been shown to have an indirect positive effect on engagement in specific pro-environmental behaviours (PEBs) acting via place identity (Vaske and Kobrin, 2001). (Note that in this research the measure of place identity is more akin to my methods for place attachment and does not assess belonging as I do for place identity.)

Within the theoretical framework of marine place identity, which I present in Chapter Seven: Synthesis, Discussion and Conclusions, place dependency can be related to self-efficacy if one understands the latter to require the environment to at least not hinder, but preferably support a person in doing what they want or need to do (Twigger-Ross and Uzzell, 1996). In this way, in being dependent upon the sea for wellbeing, recreation or livelihood, the act of choosing to be nearer the sea promotes self-efficacy and therefore contributes to development of place identity. The notion of place-related self-efficacy can therefore string together the observations relating to proximity, visits, choice to live by the sea, and marine place dependency. Going further, environmental degradation might threaten place-related self-efficacy motivating preventative actions, providing one possible explanation for the association between place dependency and marine citizenship. Place dependency cannot be imagined to arise in a vacuum, and must have an aetiology relating to marine experience of some sort. The following sections consider aspects that may contribute to such an aetiology and also the self-identity outcomes of these relations to place.

6.3.2. MARINE PLACE ATTACHMENT

For the purpose of this thesis, place attachment is considered as being the bonds people hold with place, as distinct from (though not unconnected to) how place fits into their sense of self-concept (place identity), though in the literature

these distinctions in terminology are not always clear because of a lack of conceptual clarity.

Place attachment has variably been considered both as a promoter of pro-environmental behaviours (PEBs) and as not (Carrus *et al.*, 2014), and as a promoter of civic action (Payton *et al.*, 2005). Research into place attachment and PEBs tends to be focused on local places and issues rather than less fixed notions of place but has shown that residents more strongly attached to place are more active in civic matters (Devine-Wright and Howes, 2010). The novel approach in this research enabled marine citizens' attachment to the marine environment as a type of place, rather than to their residential locality, to be measured and found that marine citizens are so highly attached to the generic sea that items in the metric relating to local attachment had to be removed as having either neutral or negative impact upon the other measures. Attachment to a type of place is touched on in settlement identity (Feldman, 1990) but this relates to types of social community rather than environmental place identification. I have been unable to locate literature that examines the concept of natural place attachment, whereby any location with access to the correct natural type would be deemed as satisfying the place attachment. However sense of place research focused on the marine environment gives indicators that marine place attachment is possible and can be found across publics (van Putten *et al.*, 2018), bringing together notions of marine place identifications and the processes through which place attachments are formed. Place identifications are the culturally salient characteristics that identify and are used to understand type of place (Uzzell *et al.*, 2002).

The term biophilia has been argued as being a form of natural place attachment extending from evolutionary history in African terrains (Yi, 1992, reference in Bott *et al.*, 2003). What then would prevent us extending our evolutionary history into the sea and arguing that a marine place attachment is a form of thalassophilia that may have its roots in our very distant marine ancestors? It's clear from the evidence presented here that this form of attachment is thalassophilia rather than an attachment to a specific coastal location. The attachment, like settlement identity, is to the features of the marine environment and their cultural meanings. How such an attachment is formed is proposed to generate from sensory experiences, discussed below, and marine place

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attachment contributes to the generation of place identity discussed in the following section and more thoroughly in Chapter 7: Synthesis.

In their tripartite organising framework Scannell and Gifford (2010b) propose that place attachment arises from aspects of person, process and place which can be related to findings presented in this thesis. The person aspect relates to personal connections to place, including emotions and the sensorial and formative experiences I describe in this and the previous chapter. Process is about how people relate to place, including affect (such as thalassophilia as described above); cognition (memory, beliefs and perhaps place identifications and social representations of place); and proximity maintaining behaviour (such as elective belonging through moving to a place by choice). However in the place strand, it's argued that this is about social bonds attached to place such as childhood community, or family. However my findings on a generic [marine] natural place attachment (and place identity as social or environmental, discussed below) contradict the argument that social bonds are prerequisite for place attachment. Massey (1993) states that place is a network of social relations; then how should we understand a generic marine place attachment? Instead this may be more related to place identity, which can be socially influenced or not, and stems from values and experiences that form the self-concept, such as those highlighted as important in the previous chapter: stimulation, self-transcendence, non-conformity, and environmental identity. Expanding the place strand of the tripartite organising framework into the wider scope of place identity would allow for a much deeper exploration into how place is relational to the self. I now examine the findings that relate to place identity.

6.3.3. PLACE IDENTITY AND SCALE

The case for examining place attachments and identity at differing scales and differing types of place has been made by numerous researchers (see for example Devine-Wright, 2013; Devine-Wright *et al.*, 2015; Hidalgo and Hernández, 2001; Scannell and Gifford, 2010a). This research was informed by these approaches and investigated sense of belonging at scale from neighbourhood (local) to world (global), and differentiated between social and environmental features of the place. This proved to be a fortuitous research

design, given the emergent finding of a marine place attachment that is not connected to social features of the ocean as a place.

In this research, environmental place identity was more strongly held than was social, similar to the findings of Scannell and Gifford (2010a), where natural place attachment was more strongly held over civic attachment and was also associated with pro-environmental behaviours, whilst civic place attachment wasn't. This contrasts with work of Hidalgo and Hernández (2001), who found social to typically be higher than natural place attachment. However that research broke down the demographics and found natural place attachment to overtake social in those in the age group 50-83 years indicating an age component. This is important here given the overrepresentation of people in this age group. There may, therefore, be other associations between age, marine citizenship, and scales of place identity, that add complexity, particularly as active marine citizenship decreases with age (see 4.2.1).

In keeping with other research (Devine-Wright, 2013), marine citizens have multiscalar place identities. Social belonging was most strongly held at local and global scales but there were fairly strong associations across the scales indicating a broad multiscalar social place identity – marine citizens felt belonging with all people. Supported by both quantitative and qualitative data, environmental belonging was more polar, most strongly held at global and local scales, with associations clustered at these poles. This indicates that people identify most strongly with local or global environments. This contrasts with work in general populations which show strong national identity (Devine-Wright *et al.*, 2015), a scale that was fairly low in this population.

Despite these interesting findings about scale, it was only by comparing global to local scale environmental place identity that an association could be found with marine citizenship. Devine-Wright (2013) similarly found that a relative global place identity was more associated with belief in climate change as anthropogenic.

Collectively the data suggest that local place identities form through longevity of relationship with a locality and that marine citizens feel a sense of kinship with all people. Environmental place identity may form through multiple processes at different scales, with local being influenced by residence, but global relating

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more to values, such as universalism, and belief in connected world systems. There may be positive feedbacks involved given the mobility of this population and their conscious decision-making about place of residence. It seems clear from the discussion presented thus far that marine citizens are strongly motivated by marine place relations both in marine citizenship participation and in choice to live near the sea. Whilst such place relations are complex and intertwined, the call of the sea is a common component and needs examination in its own right.

6.3.4. MARINE PLACE IDENTIFICATION AND THE SENSES

Although not deductively interrogated in this research, the quality of the sea was an important emergent qualitative factor of marine citizenship, and though empirically a smaller data set, is perhaps the most significant aspect of this chapter in getting to the very depth of human connection to the marine environment as a place. In this section I point to the origins of what I call thalassophilia, the sensorial intersection of humans and oceans.

Three key themes emerged in the data relating to the characteristics or quality of the sea. These were the sea as a clean, pristine environment; the sea as embodying sense of freedom and challenge; and the specific sensory experience of physically interacting with the sea. These themes relate to less tangible qualities of the sea and human, cultural perceptions and meanings attached to the sea. Finding literature within which to situate these findings has proved challenging. There is little literature within environmental psychology and geography that looks at sensory, rather than affective, human interaction with environment, or which focuses on generic place types rather than, typically urban, localities. Whilst the field of sensory anthropology considers sensory experiences, the narrative this discipline often adopts makes the research less translatable to this PhD. However there may be some value in borrowing terminology from this field, for example the term qualia – "the sensory experiences of abstract qualities" (Naidu, 2018) – to categorise those qualities of the sea which are perceptible to marine citizens without being materially tangible.

Research across anthropology and geography indicates that senses are important to mediating relationships between humans and place. For example,

smells can define a setting (including therapeutic places), trigger memories and emotion, and promote or inhibit activities in a place (Gorman, 2017; Paterson, 2012). Touch is recognised as important for health, particularly deep touch, and can improve sense both of connection with factors external to the body and develop a deeper sense of knowing one's own body, and the more immersive a terrain texture the more it connects a person to the environment (Brown, 2017). The qualia of a place can communicate environmental meaning to people, which Naidu (2018) terms qualisigns, for example smell and touch of fish indicating marine environmental quality (Naidu, 2018), or visual clarity of water being associated with marine health (Gelcich *et al.*, 2014). One of the cultural environmental meanings of the sea indicated in this research was embodiment of a sense of freedom. Where an environmental measure or development at the coast impacts upon a qualisign, such as sense of freedom, the acceptability might be reduced (e.g. offshore wind installation where an open vista was a qualisign for good coastal quality, Devine-Wright and Howes, 2010). There appears to be a tangible relationship between the physical qualities of a type of environmental place, and the cultural meanings it promotes. For example in another environment, forest owners, like the forest itself, have been found to be more rooted than non-forest owners (Westin and Holm, 2018). It would be a fascinating study to further research this relationship between the material qualities of the sea and the development of its meaning for humans.

Though it's beyond the scope of this research to identify the processes involved in marine sensation, the findings presented here clearly indicate that the marine sensory experiences of marine citizens are of fundamental importance to their development of marine place attachment, to their recreational and wellbeing dependency upon the sea, and for triggering environmental concern. Involved in these findings, were cultural understandings of the sea as a wild place, defiant to humans, or as a frontier or connector to other parts of the world. Such understandings can play to basic human values such as openness to change or conservation. However, it may be the sensory qualities of the ocean as a place of colourful, moving lifeforms, volume, temporality, fluidity, and transductive mechanics, that particularly give it the capacity to evoke such striking sensory experience in humans. There is a neat synergy of the stimulation of human mechanoreception when immersed in the ocean as with marine organisms

whose biological clock is determined by the rhythmic expressions of these forces. Anderson (2012) describes the surfer as becoming an assemblage with the wave itself, the ocean and human moving as one entity, or that the two entities converge, become blended as a process. Such perspectives of the human-ocean relationality would suggest considerable depth of sensorial capacity underlying human-ocean interactions, certainly sufficient to produce such strong dependencies for recreation and wellbeing, the preservation of which is a motivator for marine citizenship.

The most authentic tourist experiences have been found to be those with sensory stimulation (Lew, 2011), and Ballantyne *et al.*, (2011) found that sensations were the most cited qualitative factor involved in public visits to a range of marine experiences, and that concrete, sensory and emotional experience promoted reflection, which in turn promoted conceptualisation, and led to seeking active experimentation which generated further experiences. This positive feedback loop could be an explanation for the pathway from sensory marine experience through to marine citizenship, which, if valid, would be an argument for a policy approach to facilitate early and repeat positive sensory marine experiences in the wider population.

6.3.5. SUMMARY

Discussed here has been a complex body of findings dissecting and interrogating the relationship marine citizens have with the marine environment. The sensory and formative experiences of physically and sensorially interacting with the ocean and its inhabitants seem to evoke strong feelings in marine citizens which both drives them to increase proximity to the sea, and to perform marine citizenship activities to preserve it. There are limitations which raise further research questions. For example, how do these marine citizens differ from the general population, and can other environments provoke such strong attachments in the same way as the ocean?

An important question is also raised as to how these factors, and those discussed in the previous two chapters, relate to one another in the marine citizen and by what processes is marine citizenship promoted. The strength of feeling marine citizens have about the ocean suggests they hold some kind of marine identity which at once includes marine dependency, satisfaction of

values, and emotional attachment. The preservation of this identity, which includes cultural notions of active citizenship, provokes acts specifically of marine citizenship. Twigger-Ross and Uzzell (1996) propose an understanding of place identity that incorporates four factors of social identity theory which lends itself well to the findings in this research. In the next chapter I will discuss this theory in detail and relate it to the collective findings presented in Chapters Four-Six, providing evidence towards the existence of marine identity.

6.4. CONCLUSION

Contributing to an holistic investigation of the concept of marine citizenship, I have in this chapter presented a response to the research question: *How do place-related factors influence the practice of marine citizenship?* I have done this by employing quantitative place-based measures and analysing qualitative expressions of the relationship individual marine citizens have with the ocean.

Existing research indicates place attachments are important for environmental citizenship and is supported by these findings. I have demonstrated that the ocean has a unique and striking capacity to attach humans, in a way that transcends typical locality based place attachment, and I have proposed marine place attachment as a specific form. Marine place attachment is so strong that it leads to active choice to reside by and visit the sea and commands dependency upon it for wellbeing. This expands on existing literature relating to social settlement identities and evidences human capacity to attach to categories of natural place.

I have presented a complex picture of multiple place identities which privileges the environment over human society, and which exists strongly at both local and global scales. This indicates potential to engage people with varied place identity scales in marine matters.

Finally, I have demonstrated the way in which the sea has this power over humans, through the extraordinarily broad and deep sensory experiences it offers us, developing into thalassophila. The evidence presented in this chapter points to an environment that has considerable power to attach people, adding to other factors – value structures, other identities, and understanding of citizen role – to create active marine citizens. These findings have made a unique

contribution to literature concerned with place, and that within marine social science.

In this chapter, I've introduced the concept of marine identity and begun the argument that this is an important feature of marine citizenship. In the next chapter I bring together the findings presented in this thesis to explore this idea of marine identity and reframe marine citizenship in light of this new evidence.

PART THREE: INTERPRETATION, SYNTHESIS AND CONCLUSIONS

7. CHAPTER SEVEN: SYNTHESIS, DISCUSSION AND CONCLUSIONS

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7.1. INTRODUCTION

This research project investigated marine citizenship and its role in creating good marine environmental health. It looked at who marine citizens are, what marine citizenship is, and investigated influences upon marine citizenship from within marine citizens, from the ocean as a place, and from the policy institutions which surround it. The research is situated within the premise that there is significant harmful anthropogenic impact upon the marine environment that must be addressed for a range of reasons, including current and future generations of humans being able to live sustainably on this planet. The research approach implicitly acknowledges a moral imperative to seek sustainability, and that all humans have a role to play to achieve this goal.

For this investigation, I adopted an environmentally pragmatic, post-normal science approach. Post-normal science (PNS) advocates an extended peer community and incorporation of multiple kinds of knowledge, in order to effectively develop solutions for uncertain, high stakes and high risk, wicked problems, such as climate change or ocean degradation (Funtowicz and Ravetz, 2003). In aligning with PNS, I placed significant emphasis on the need to actively engage publics in pro-environmental behaviours as well as marine environmental decision-making, and purposefully examined participation in decision-making. The reasons for involving publics more widely are to create better solutions through deliberation and a wider knowledge base; to democratise marine use and management; to generate stewardship; and to improve urgency and effectiveness of policy through increasing public pressure upon the political system and personal willingness to reduce environmental impacts (as identified in 2.3).

I took an interdisciplinary approach to investigate multiple aspects of the marine citizenship concept, viewed through the marine citizen experience. I drew on theories of environmental citizenship, green politics, environmental law, social psychology, human geography and even touched on aspects of anthropology via ocean sensory experience. This has allowed me to generate a rich overview of the marine citizenship concept and to reflect on a diverse matrix of influential variables.

This interdisciplinary and post-normal science approach is not typical in research focused on public involvement in generating solutions to marine or environmental degradation, which has historically tended towards the knowledge deficit model, through the influence of positivist natural science (Owens, 2000; Robottom, 1991; Schild, 2016). More recently researchers now acknowledge that education can enable environmental citizenship but is not a driver of it and have embraced psychological theories of values and identities as being important in changing individual behaviours (e.g. Clayton, 2003; Dietz *et al.*, 2005; Gatersleben *et al.*, 2014). Others have considered the political aspects of public participation in solutions and decision-making relating to environmental problems (see for example in Cao, 2015; Dobson, 2003; Pepermans and Maeseele, 2016; Schild, 2016). And attempts have been made to bring factors together in models and frameworks of environmental and marine citizenship (Hawthorne and Alabaster, 1999; Jelin, 2000; McKinley, 2010), some of which have proposed that place relationships might have importance (McKinley, 2010; McKinley and Fletcher, 2010). Despite these developments, policy measures to engage the wider public (beyond those considered as resources users or stakeholders) in environmental issues still typically engage educational and awareness raising methods to promote individual pro-environmental behaviours, in isolation of the wider psychological and sociological context of anthropogenic environmental harm. By taking marine citizenship out of the environmental education box and exploring it in an interdisciplinary and more holistic way, I have been able to expose some of the fundamental connections humans have with the sea, and how this promotes willingness to engage in citizenship to protect the marine environment.

This thesis has aimed to answer a set of research questions that investigate marine citizenship and its role in creating good marine environmental health, which are:

(i) *What is marine citizenship and who participates in it?*

(ii) *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?*

(iii) *How do motivational and value-based factors influence citizenship choices?*

(iv) How do place-related factors influence the practice of marine citizenship?

Taken together, these questions were designed to provide an holistic understanding of marine citizenship that would address the extrinsic understandings of, and influences upon marine citizenship; the intrinsic motivations of marine citizenship; and the particular role of the sea in developing active marine citizenship. In so doing, the potential for marine citizenship in having a positive impact on marine environmental health is better understood.

I used a mixed methods approach which allowed for application of established metrics and theories through online survey, together with exploration of their quality in open-ended interview, embedded within the practice of marine citizenship. By observing marine citizens carrying out marine citizenship I was able to embed myself as a researcher in their experience, and together the methodology provided space for new understandings and perspectives to be discovered. This method elicited a large amount of data with which I was able to examine existing theories about environmental citizenship from a range of disciplines, and discover and interrogate emergent themes.

Through Chapters Four-Six I have presented and discussed my findings in detail, organised into three broad themes of Citizenship, People and Place corresponding to the above research questions. The discussions therein focus on the specific findings presented in each chapter and the ways in which they relate to the literature. They also tentatively point to some new understandings and directions for future research. In this chapter I bring together these themes and consider marine citizenship as a whole. I have not sought in this research to develop a new model of marine citizenship, supported through quantitative data and statistical modelling. Instead, I have approached marine citizenship with an open mind and tried to find the unique stories which deviate from accepted norms in environmental citizenship, to offer hope that perhaps anyone can be inspired to participate in active marine citizenship, though their values differ from those traditionally understood as common denominators. However, some existing theories have emerged as particularly significant and in this chapter I propose a marine identity framework to connect together some of the main strands of marine citizenship and offer a new lens for future investigation.

7.2. OVERVIEW OF KEY FINDINGS

In this section I summarise the key findings and conclusions presented in the results Chapters Four-Six to support the subsequent discussion of marine identity and citizenship.

7.2.1. CHAPTER FOUR: CITIZENSHIP

Research questions:

a) *What is marine citizenship and who participates in it?*

b) *How are institutional policy frameworks of marine citizenship understood, interpreted and experienced by participants?*

Research question a) was investigated primarily with standard demographic questions. To respond to research question b) I predominantly used qualitative data to allow freedom of response, with Likert scales to measure agreement on questions relating to participation in marine citizenship activities and decision-making, and quantitative data to measure demographics. Within this chapter I presented findings and discussion that described demographics of marine citizens; explored what marine citizens understand to be marine citizenship activities; investigated awareness of legislative environmental participatory rights and participation in marine environmental decision-making; and presented emergent findings particularly relating to knowledge and collective action.

I found that marine citizens broadly share demographic characteristics of civil society, rather than the general public, which accorded with prior research into pro-environmental behaviour participation (Egerton, 2002; Egerton and Mullan, 2008; Kwon *et al.*, 2019; Riley *et al.*, 2012; Stern *et al.*, 1999). Namely on average being older, female, and educated to higher levels, and there was a higher proportion of environmental qualifications and professions than would be expected. However, there was within the population, nonetheless a wide range of ages and educational attainment represented.

In keeping with other marine citizenship literature, marine citizens generally participated in a range of pro-marine environmental behaviours (Gelcich *et al.*, 2014; McKinley and Fletcher, 2012; Parsons *et al.*, 2014), representing marine citizenship in private life. However, marine citizens were also highly civic-minded, and engaged in marine citizenship in the public sphere, such as public engagement, citizen science, and collective action, which were not directly impactful on marine environmental health but related instead to knowledge exchange and promoting cultural change in the general public in regards to their behaviours, relationships and views towards the marine environment.

Knowledge was a wide, emergent theme in my qualitative data, and of particular interest to me due to the emphasis placed on knowledge by the normative ecological and technocratic aspects to the practice of environmental public engagement (see Chapter Two), which has led to the dominant focus on environmental education to promote pro-environmental behaviours (Fletcher and Potts, 2007; Guest *et al.*, 2015; Hawthorne and Alabaster, 1999; Potts *et al.*, 2016 *inter alia*). In summary, the findings of this research indicated that knowledge is highly valued in marine citizenship as an enabler (rather than motivator) of individual marine citizenship; as legitimising of collective action via marine groups; and as evidence in marine decision-making. It was also valued as a source of interest, aligning with the values of marine citizens (see 7.2.2 below).

Marine citizenship was expressed as a **responsibility**, with shared stewardship of the marine environment fundamental for good marine environmental health and a sustainable Earth for future generations. It was more than a collection of pro-marine environmental behaviours, and was a civic responsibility incorporating a healthy natural world both as fundamental to the human race and with its own intrinsic value. Additionally, marine citizens believed marine citizenship was valuable for empowering people at the grassroots, and decision-making is more informed when the public engage in it, as marine citizens. Although not explicit, this suggests that marine citizens might be sympathetic to the extended peer network in post-normal science. Rather than aligning with technocratic understandings of human impacts upon the environment, marine citizenship was viewed as a social movement. In Chapter Four I proposed that this could be viewed as 'thick' marine citizenship, due to the desire to politically

shape the human-marine relationship, and that pro-marine environmental behaviours were more 'thin' due to top-down advocacy and more passive participation. The consequence of this shift in perspective is that environmental education might expand beyond ecosystem knowledge and into political literacy and public empowerment as a means of promoting 'thicker' marine citizenship.

A significant novel contribution of this work is my focus on the under-researched **rights** aspect of marine citizenship. I have investigated how aware marine citizens are of their rights to participate in marine environmental decision-making, insofar as those rights are conferred under the broader environmental umbrella of the Aarhus Convention (Peters, 2018); and marine citizens' experiences of formal participation of this sort. Marine citizens demonstrated little explicit awareness of the right to environmental information, justice and participation in decision-making. And in the case of a poor environmental decision, marine citizens largely did not know how to seek redress, with most of those who did suggest a means, turning to their elected representatives. There was implicit recognition of the role of NGOs but a general sense of disempowerment at the individual level in terms of influencing marine environmental decision-making. Those who had participated in this kind of decision-making mostly did so through the planning process or the UK's marine conservation zone consultations, and experiences were very mixed. Generally, those who perceived it as a fair outcome and had received information pertaining to the outcome, felt it was a positive experience, even if the decision did not go their way.

On the whole, the findings presented in Chapter Four made the case for some significant limitations in past investigations of marine citizenship, notably the elevated focus on environmental education and awareness rather than deeper participation, and the lack of attention given to the more political and law-based rights side of the citizenship coin.

7.2.2. CHAPTER FIVE: PEOPLE

Research question: *How do motivational and personality factors influence citizenship choices?*

In order to address this question, I used quantitative psychometric measures, qualitative open survey questions and interviews to examine a wide range of factors. Looking explicitly at marine citizenship, I purposefully investigated environmental identity (Clayton, 2003) and all ten basic human values (Schwartz, S., 2012) to broaden existing debates out from a limited focus on universalism/biospheric values and identify ways in which other values can connect to marine citizenship. I additionally investigated variables that have previously been identified as associated with general pro-environmental behaviours and wider environmental citizenship in previous research (e.g. Stern *et al.*, 1999). These were the environmental attitudes of non-materialism (Gatersleben *et al.*, 2014; Gifford and Nilsson, 2014; Inglehart, 2008), belief that humans are abusive towards the environment (Dunlap *et al.*, 2000; Dunlap and Liere, 1978), and climate change concern (Prati *et al.*, 2018; Smith, N. and Leiserowitz, 2014; Stevenson and Peterson, 2016). By using mixed methods, I was able to statistically analyse relationships with established psychometrics and additionally qualify and contextualise the expression of aspects of their underlying theory through the qualitative data. I selected for interview participants who were divergently distributed on the various psychometric scales in order to focus both on commonalities across motivation variables and divergence between them (a method proposed to be useful in understanding social identity theory which brings together a range of psychological concepts situated in social context, Breakwell, 1993). In addition to these factors, which I actively investigated, the inductive element of the mixed methods design allowed space for emotions and formative experiences to emerge as important factors.

At this point it is important to remember that the study sample was of active marine citizens who have already been motivated to participate in some way. I found that, in accordance with previous research (Lucas, 2018), self-transcendent values of benevolence (in-group concern) and universalism (wider human and environmental concern) were prioritised in marine citizens, and self-enhancing values were low. Indeed, power and security, while present in my marine citizen sample, were negative predictors of deeper marine citizenship actions, as was conformity. However, stimulation was the only value to positively predict extent or depth of marine citizenship. My findings on

stimulation values suggest that in finding the marine environment interesting and marine citizenship a distinctive activity, marine citizens are motivated towards thicker participation. The overall distribution of basic human values was also noteworthy, with security nearly neutral, and benevolence and universalism at the same level on the openness to change-conservation dimension. Marine citizens view environmental degradation as a threat to humans, neutralising the self-enhancement aspect of the security value. Similarly, marine citizens are evenly disposed to value both in-groups, such as the marine group or their communities (benevolence values), and the wider human population and environment (universalism values), without much differentiation between them.

Though the environmental attitudes relating to climate change concern, humans as abusive of the environment, and non-materialism were commonly held, it was only climate change concern which was statistically significantly associated with depth of marine citizenship, indicating a shared cognitive and behavioural relationship between marine environmental health and wider climate change – the ocean-climate nexus. However, the most quantitatively significant factor in the People chapter was that of environmental identity (EID). Quantitatively, the truncated version of Clayton's (2003) Environmental Identity Index was positively associated with both the intention to do marine citizenship and the depth of actions participated in, with strong explanatory power in the former. Qualitatively, the most frequent emergent EID themes were spending time in nature and environmental citizenship more generally. Through EID there is a connection between the environment and action, demonstrating that identity is of importance in promoting marine citizenship.

Finally, emergent themes were centred on emotional connection to the sea and formative marine experiences. Certain emotions, such as indignation and more general emotional affinity with nature, have previously been found to stimulate willingness to act and behaviour change (Kals *et al.*, 1999). Marine citizens, when given freedom of response, described their motivation for marine citizenship in terms of particularly positive emotions, and occasionally concern and guilt, and the ocean itself. The emotional connection to the marine environment as a primary motivator therefore points towards the following chapter on Place, and the ocean as capable of provoking strong reactions in

humans. Having experience of the ocean therefore becomes an important tenet of marine citizenship.

7.2.3. CHAPTER SIX: PLACE

Research question: *How do place-related factors influence the practice of marine citizenship?*

Similarly to the previous chapter, the Place chapter used both quantitative psychometric measures, in this case for place attachment, marine place dependency, and belonging to the environment or the society at a range of scales (place identity), and qualitative data to extend understanding of what these factors look like in practice and how they relate to marine citizenship. Findings had congruence with previous research, such as a high proportion of the marine citizens residing near the sea (McKinley, 2010), and both place attachment and place dependencies being strongly held and acting as positive predictors of deeper marine citizenship (Devine-Wright, 2013; Scannell and Gifford, 2010b; Vaske and Kobrin, 2001). Place dependencies were the variables in this research that were the most strongly significantly associated with depth of marine citizenship. It was interesting to note that marine citizens held multiple place identities at a range of scales simultaneously, with global then local place attachments found to be strongest, and identified first and foremost with the environment rather than the social community. However no scale of place identity had a significant influence on depth of marine citizenship, only a small influence was found by those with a higher global:local relative place identity.

The most significant novel finding from this chapter was the identification of a specific marine place attachment. Marine citizens were not attached to a specific coastal locality but to the ocean as a general class of environment. This is most similar to the theory of settlement identity (Feldman, 1990) and deviates from typical place attachment investigations which focus on local neighbourhood, or national identities. I propose this attachment and corresponding dependencies connect to the identities and values discussed in Chapter 5 and above, and drive the desire to live by the sea, since most respondents had moved there in more recent years through choice. Proximity therefore becomes a function of improving ability to act, or self-efficacy, as well

as promoting wellbeing, rather than a direct driver of marine citizenship. Identifying a marine place attachment, which I call thalassophilia, is an important contribution to the place literature, beyond the implications it has for marine citizenship.

Emergent within this section of analysis were themes relating to the quality of the ocean as viewed by marine citizens. Cleanliness or environmental quality was an important factor – a probable driver for beach cleaning – and related to a sense that the sea was not a human environment and should not be heavily impacted by our actions. Cultural place identifications of the ocean as a place of discovery, challenge, and freedom also resonated with discussion on the intersection of values and marine citizenship. And sensory experience of the ocean as a place was very strongly expressed. This came through in the qualitative data and highlighted how significant the ocean is at creating sensations, as a literally immersive environment. The sound of the waves, the light upon the water and aesthetic coastal appeal, the movement of the waves to see and to feel as powerful, and the engaging and visually stimulating life beneath the waves were all contributing factors. These sensory experiences are surely the means by which formative experiences create thalassophilia, and attach people to the marine environment in such a way as the ocean as a place forms a significant part of marine citizens' motivation and practice.

7.3.   SYNTHESIS

To bring together the three chapters of findings presented in this thesis and dissolve the artificial barrier created around them, in this discussion I discuss marine citizenship in two ways. First, I draw on the findings that relate to values, environmental identities and place relations to illuminate the human-marine relationship and how it promotes marine citizenship. This essentially answers the question of what is marine citizenship. Second, I situate this new understanding of marine citizenship motivation within a wider social and policy context, and offer insight into how marine citizenship can be used as a policy vehicle for promoting good marine environmental health. In so doing, I introduce the concept of marine identity as a component of interest in marine citizenship and its role in creating good marine environmental health.

7.3.1. WHAT IS MARINE CITIZENSHIP?

In the literature, marine (and general environmental) citizenship has typically been operationalised into a set of pro-environmental behaviours which can be promoted through various policy measures. This is clearly a practicable approach to effecting behaviour change and promoting such actions as will have a direct (albeit individually small) impact upon the health of the marine environment and may (or may not: Thøgersen and Crompton, 2009) spill-over into deeper environmental citizenship. Marine citizenship therefore has typically been considered as the collective practice of such behaviours, with marine citizens active as beach cleaners, low energy users, mindful of impacts upon the land and sea, and reducing their dependency upon plastic.

Yet research into environmental identity indicates there is much more than a set of behaviours to be considered here, such as: an identity, a set of values, and a relationship with the environment which shapes the person and their interactions with the environment and society. What has emerged in this research project is much more in keeping with this ethos of a life lived rather than behaviours chosen. Today's marine citizens are not one people with mirrored values, defined sets of behaviours and similar stories. They are a confluence of unique experiences and attachments who share one love for the ocean. There are multiple stories to be told here: the typical marine citizen; the exceptional influences; the human-ocean convergence; and how we operationalise these to promote marine citizenship.

7.3.1.1. Introducing marine identity

The findings of this research point to a very important intersection between personal values, attachments, emotions and identities, and the quality of relationship a person can have with the sea. Not all marine citizens arrived at their place of active marine citizenship through universalism values and a sense of global place identity. There were multiple journeys towards marine citizenship and many motivations. However, there was one key commonality, which was the effect of the ocean as a place.

Participants painted a picture of the ocean as a place which embodies freedom and escape, equally offering peaceful solace and energising movement. It was

the physical qualities of the sea and how these are experienced which bonded people to it and the cultural meaning of the sea as a connector between worlds that excited and stimulated people. The sea is a four-dimensional space with volume and fluidity. One cannot be static within it. It is literally immersive. It satisfies all the senses with sound, ever-changing quality of aesthetic and light, vibration from waves, pressure from the water, sea air smells, and the feeling of water against your skin. It satisfies all emotional states, raging or peaceful, energetic or calm, in tune with or diffusing emotional extremes. And we feel better when we visit the sea.

The sea can connect to all the basic human values, and consequently so can marine citizenship. As a global body, the one ocean embodies universalism. Ever changing and home to life so different than on land it, provides stimulation to the mind. As a place of physical turbulence and movement, it is exciting and offers release for hedonism. Mastering an understanding of marine life, the local tides, or riding a particularly impressive wave provides a sense of achievement. Governing the sea by sailing on it, or 'defeating' it with technology can make a person feel powerful. As a source of food and having predictable rhythm, it provides security. The UK as an island nation, with a long heritage of maritime and fishing, gives the sea cultural traditional meaning. Generation after generation conforms to a love of the seaside holiday. And taking care of the sea is an act of benevolence to one another, it is a gift to be shared with friends, family and the community. By connecting to a full range of human values, the marine environment has capacity for all kinds of people to relate to marine place-identification.

This is romantic rhetoric for a PhD thesis, but is of fundamental importance to the promotion of good marine environmental health through marine citizenship, because it is this rich interaction between the marine environment and one's body and person that appears to be the driver for marine citizenship. These qualities promote dependency upon the sea, and stimulate a marine-specific kind of place attachment which transcends local and familiar aspects typical of place attachment. As my rich data show, marine citizens choose the sea above other attachments because it is so fulfilling and creates a need. The sea is a part of their identity – there is a marine identity.

7.3.2. A MODEL OF MARINE IDENTITY

Though I did not commence this research project with an aim of uniting these interdisciplinary components of marine citizenship into a single coherent model, the holistic, inductive process has produced findings which point to a marine identity that may be important for marine citizenship. In this section I use theory of social identity as a means of bringing together my findings on values, emotions, place relationships, and social influences. I first explain how my data has broadly indicated a marine identity. I then describe Breakwell's (1986, 1993) Identity Process Theory which integrates theories of social representations and social identity, and as adapted to place by Twigger-Ross and Uzzell (1996). I present my findings mapped onto this theory of social identity (Figure 7.1 below), which demonstrates the complex interplay between components. And finally I present as evidence, a detailed discussion of how my findings relate to each component of the theory.

The first indicator of a marine identity is that quantitatively, in this research I showed that marine citizens have a strong environmental identity (based on Clayton, 2003) and that this is positively associated with depth of marine citizenship, and strongly associated with intention to consider specifically marine environmental impacts, indicating an important role for place-related identity. A specific marine component of environmental identity was also indicated by the marine place attachment, in which place identifications of the ocean are transferable from one coast to another, rending an emotional bond to any or many marine localities.

Place identifications are the culturally salient characteristics that identify and are used to understand type of place, and they connect with the values a person holds (Uzzell *et al.*, 2002) (see also Chapter 6, Section 6.3.4). Place identifications must be congruent with values for people to feel contentment in a place (Uzzell *et al.*, 2002) and in this way place, which reflects values, can support identity. Therefore, to understand marine identity better it is useful to explore how the ocean supports the values of marine citizens.

My findings suggest there may be a connection between marine place identifications, and the basic human values held by marine citizens that inform their sense of identity. For example, those with strong stimulation values may

particularly view the sea as a place of interest and challenge, whilst those with strong security value might identify with the sea as a place of protection for their home. The marine place identifications which emerged in this research related to the health/quality/aesthetic of the ocean; its lack of boundaries and expanse; and the sensory experience of interacting with it. Whilst such factors may not always be positively received by all people, the findings suggest these may be common social representations of the ocean, to which marine citizens positively respond.

My findings lend themselves to Breakwell's (1986, 1993) Identity Process Theory, bringing in place as a component of identity (as begun by Twigger-Ross and Uzzell, 1996). Identity is about understanding the self in relation to others, and as such is a socially relational concept built on comparisons, and is influenced by institutional social structures (Breakwell, 1993). Just as the ocean itself is understood ecologically as a single coherent yet dynamic network of spatial and temporal variation, so too can marine citizenship be understood as an action within a dynamic political, social and psychological system.

Breakwell (1986) described identities as being influenced by four processes: distinctiveness, continuity, self-esteem, and self-efficacy. Distinctiveness is about self-identification and understanding who one is in relation to others which are like or unlike. Continuity relates to a consistent sense of self over time and place, in which growth is possible but must be congruent with one's own conceptualisation of self. Self-esteem is a basic tenet of identity theory and is about accepting the self and maintaining it; underlining ideas of behavioural self-interest. And self-efficacy relates to competence and control. There is a relationship between self-efficacy and conformity in which lower self-efficacy tends to promote conformity as such people fall back on external assessment of themselves, rather than relying on their own, less trusted self-evaluation (Breakwell, 1993). Marginalised or estranged individuals or communities might have low self-efficacy due to feeling disempowered to influence the social or political system, which is pertinent to this discussion of marine citizenship and will be further discussed below (7.3.2.4).

Breakwell's (1986) Identity Process Theory builds on Moscovici's 1963 social representations theory and is concerned with interpersonal communication as

dynamic processes through which belief systems, or social representations, are formed. Social representations are formed within or externally to groups, and social identities will shape exposure to, and acceptance and use of representations. Strength of social representations depends on how they diffuse through society.

To make this more concrete, a relevant example might be the representation of the ocean as an important environment being harmed by human activity. Belief in and adoption of this representation will depend on how one's identified social group is exposed to such messages, how it responds to scientific or environmentalist sources of information, and how this intersects with other messages, knowledge or experiences that might contradict or reinforce it. One of the challenges for environmentalists is to convey this message to the wider public, and therefore investigation of the social representations of the ocean will provide useful information. Public perceptions research contributes to this endeavour. Where they are socially developed and understood, one might also consider place identifications – which are the features through which we identify place – as being a form of social representation. Therefore, the qualities of the sea outlined in 6.2.4 as being without boundaries, having an aesthetic or material quality, and generating certain kinds of sensory experience, can be understood both as place identifications (what the ocean means to a person) and as social representations of the ocean (in circumstances where they are culturally communicated and shaped).

Social representations have a reciprocal and dialectic relationship with social identity. Sharing social representations, or cultural understandings, creates a sense of shared world view and similarity in identity (Breakwell, 1993). Having shared understanding of the marine environment creates a sense of community, which in turn promotes social processes relating to groups, such as social norms and shared attitudes. For environmentalists therefore, a goal might be for society to share social representations of the ocean which accord with disapproval of negative human impacts, and having positive affect towards the ocean. Identity is involved in how such messages are received and modulated and therefore can enhance or reduce the effectiveness of this goal.

Twigger-Ross and Uzzell (1996) used Breakwell's (1986, 1993) Identity Process Theory to create a place identity model which explains how place is salient to the self-concept through Breakwell's four processes of identity discussed above. The model was empirically supported in the original research, and other research investigating identity has found it is a strong driver of pro-environmental behaviours (Stets and Biga, 2003). Based on this model, marine identity can be understood as:

An identity rooted in the way in which the ocean as a place supports the sense of self.

I will take each process in turn to describe it as presented in the Twigger-Ross and Uzzell (1996) model (definitions are quotations from this paper, page numbers are given with each definition), and relate to it the key findings from my research. Recognising that it is challenging to convey the narrative of a complex and dynamic system in the written word, I have included a 'spaghetti' diagram (Figure 7.1) to attempt to display some of this matrix of interconnected components.
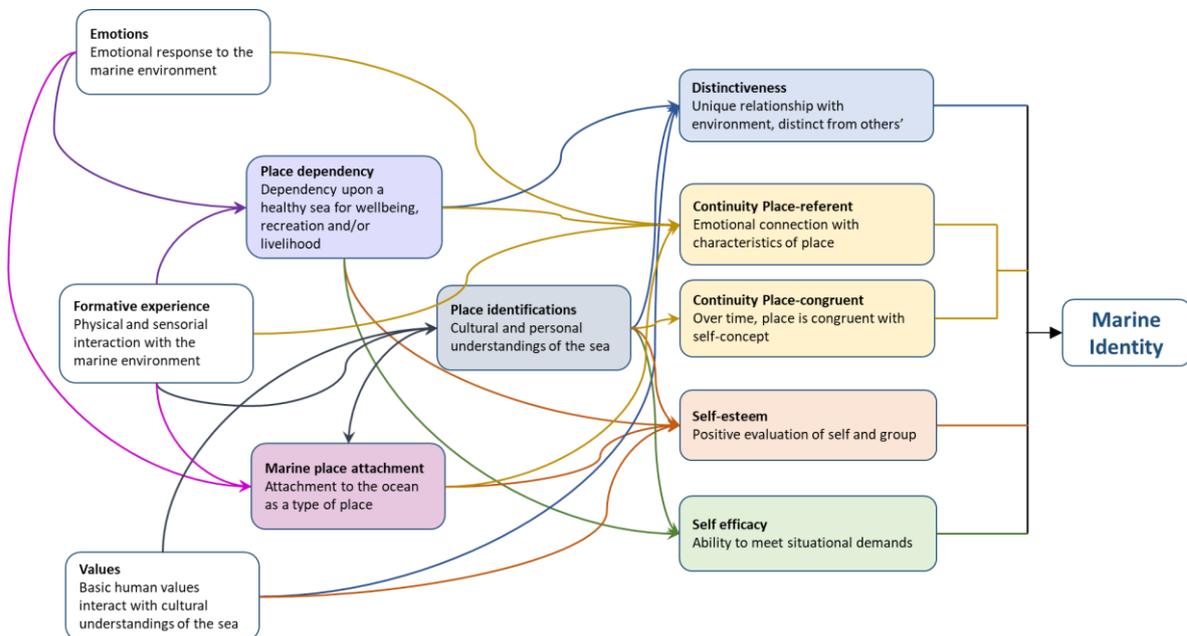
Figure 7.1 This 'spaghetti' diagram shows the primary links between the key factors evidenced in this study as connected to a social place identity theory of marine identity, based upon the place identity theory of Twigger-Ross and Uzzell (1996). Coloured boxes are factors which are influenced by other factors. Arrows are coloured to assist with following them to their influenced factor. White boxes are inputs to other factors.

7.3.2.1. Distinctiveness

"Establishes [a] person as having a specific type of relationship with his/her home environment." (p207)

In Breakwell's (1986, 1993) Identity Process Theory, distinctiveness is an important component of the process of forming a self-concept, or identity. Distinctiveness is about self-identification by determining what one is like or not like. As a form of social representation, distinctiveness is relational and may derive from position, difference or separateness from others at both individual and at group levels (Vignoles *et al.*, 2000). The relationship with a specific place is both distinct from relationships with other places and from other people's identities. Relationship with place therefore can define who a person is and is not in comparison to how other people relate to that place. This accords with settlement identity (Feldman, 1990) in which people categorise themselves as a type of person according to a social settlement, such as country town or city.

Identifying as a 'marine person' enables marine citizens to distinguish themselves from others. Unlike others, they consider the ocean to be integral to their wellbeing, recreation and, in some cases, livelihood. They identify more with the environment than with people, and are emotionally attached to the ocean. Marine citizenship is a way to support the health of the marine environment and thus maintain the distinctiveness component of marine citizens' identities. Additionally, being an active marine citizen is in itself unusual, even amongst people who are civic minded.

7.3.2.2. Continuity

"Continuity over time and situation between past and present self-concepts." (p207)

Twigger-Ross and Uzzell, (1996) describe from the literature two types of continuity important for understanding the self within the environmental context – the self-environment concept – and give examples which illustrate that place is used to construct identity. Place-referent continuity refers to aspects of specific places providing a connection between the past and present self-concept. Here is emotional connection, nostalgia perhaps, or memories at least. Through place-referent continuity, marine citizens seek to replicate and

reinforce the deep emotional connection they have with the sea (discussed in 5.2.4), which arises as a consequence of those formative experiences that were scattered throughout marine citizens' descriptions of the sea. A deep emotional engagement acts to create positive associations with the marine environment which are sought through time, promoting re-engagement with the marine environment. In this way, formative experiences and childhood traditions or holidays which are set at the sea are important for marine connectedness – as seen in my research. Positive emotions may feed into marine dependency for wellbeing purposes, intersecting with other aspects of identity, such as distinctiveness because access to the coast is not universal. Where the marine environment is associated with positive feelings, creating wellbeing from time spent there, it becomes sought after as the best place for feeling content. Marine citizens wanting to recreate these sensations and feelings may explain the observation in this study of participants' desire to relocate to be by the sea. Place-referent continuity may therefore be a driver of marine place attachment, or marine place attachment may supply the emotional bonds that provide reference for place continuity.

Place-congruent continuity is about maintenance of characteristics of place which are transferable/general and associated with identity. In this way it connects with settlement identity whereby people seek out places that remind them of somewhere they feel positively about, through shared place identifications (Feldman, 1990). Settlement identity explains, for example, being a 'city person' or a 'country person'. In marine identity people feel they are a 'marine person'. Marine identity could therefore be considered to be place-congruence, particularly if bringing in a marine place attachment which is to any marine place and not one specific location. In this context of being a 'type of person', values and place are connected, and belonging to a place that is incongruent with values will lead to discontentment. This raises an interesting idea: is environmental degradation incongruent with marine identity due to changes in physical representations of place identifications, and sense of self as a marine person?

There is one point of deviation in the continuity aspect of place identity that relates to scale. In keeping with much place literature, place-referent continuity is described as relating to a specific location, i.e. a settlement of some kind, and

place-congruent identity about features of 'home'. However marine identity is related to a class of natural place rather than a specific location, suggesting that place-referent and place-congruence can also apply to a class of place, supported by the emergence of the marine place attachment concept. This generates some interesting questions:

What would be the connection between forming marine place attachment through experiences at a specific location, and the development of a more general marine identity? Could there be a difference between a marine identity formed through growing up by the sea and that formed as an occasional visitor to the sea? How do marine identities intersect with other identities held by marine citizens? It would also be interesting to see if other discrete types of natural environment, for example forest or desert, can also generate a strong place identity.

7.3.2.3. Self-esteem

"Positive evaluation of oneself or the group with which one identifies." (p208)

The positive evaluation of oneself, or self-esteem, is essential to wellbeing and a fundamental component of all identity theories (Breakwell, 1993). Environments support self-esteem where they are familiar, give comfort, pride and other positive feelings that relate to the self (as reviewed in Twigger-Ross and Uzzell, 1996). Place therefore is important to supporting this fundamental aspect of identity. To apply this idea to this research, viewing oneself as a 'marine person' connects sense of pride and self-evaluation with the marine environment, especially where the quality of the ocean supports positive self-evaluation. I propose there is a connection here with marine place dependency, where the ocean is the only place to provide this positive environment, and with actions for which the ocean is a setting, such as marine-relevant occupation or recreation, which promote self-esteem.

Viewing marine citizenship as a means of preserving social representations of place, it is only then a short step from the self-esteem component of marine identity to active marine citizenship. Being part of a marine group or project, and 'finding your tribe', together with the valued social capital of knowledge exchange and access to opportunities provided by social marine citizenship,

may contribute to building positive self-esteem. Likewise, being an active (marine) citizen will generate positive self-esteem where contributing to society or the environment is congruent with values and identity. As specific examples, the values of universalism and benevolence can easily be understood to be supportive of marine citizenship as something a 'good' and caring person might do.

The role of self-esteem may be important in engaging more people in marine citizenship, through identifying ways in which active marine citizenship can support different value sets and promote positive self-evaluation. Going beyond liking the place where one lives, to feeling pride and a boost to self-esteem from the qualities of that place.

7.3.2.4. Self-efficacy

"Individuals' belief in their capability to meet situational demands." (p208)

Self-efficacy is seen as important to psychological wellbeing and Twigger-Ross and Uzzell (1996) propose that the environment promotes self-efficacy when it supports or at least does not hinder the way of life of an individual. If the environment is unmanageable then it may threaten self-efficacy and thus place identity. In a marine identity, there is dependency upon the marine environment for aspects such as wellbeing and recreation which can only be met by experiencing the ocean, and therefore it becomes necessary to relocate to the sea (or frequently visit) in order to have self-efficacy.

Within the context of marine citizenship, self-efficacy leads to particularly interesting speculation. In environmental citizenship literature, locus of control is seen as important (Hawthorne and Alabaster, 1999) indicating that environmental citizens need to feel they are empowered to have impact – that they have self-efficacy in their efforts to reduce their impact upon the natural environment. Where marine dependency is based upon a marine environment in good health, degradation of it will reduce the sense of self-efficacy. If the sea is no longer the place where people can do what they like to do as part of their self-concept, then marine identity will be threatened. Self-efficacy may be improved by taking remedial action, helping to restore marine identity. In this

way the self-efficacy component might be the key to driving marine citizenship participation.

I mention above that estranged or marginalised people(s) may suffer from low self-efficacy which may increase conformity, which in this research was negatively associated with depth of marine citizenship. I found that marine citizens in this research were active citizens in other aspects of life, and participated in a range of civic actions. Feeling empowered was also an important component of the Hawthorne and Alabaster (1999) environmental citizenship model. It is logical that this relationship between self-efficacy and civic participation is influenced by educational and professional experiences which improve knowledge and lead to increased participation (Egerton, 2002) and that the implication of this is that marine citizenship participation will be more or less accessible to people according to how empowered they feel they are to be effective and competent people within wider society. My analysis of public participation in marine decision-making is therefore pertinent as an area where policy can directly promote marine citizenship. Devising effective and inclusive methods for wider public participation in marine decision-making will increase the self-efficacy of those participating, promote their self-esteem, and thus connect the marine environment more closely with their identity. This may also prove to be a mechanism by which to engage marginalised people in wider civic participation, using marine experiences as a gateway.

7.3.2.5. Summary

In the sections above I have described a theory of social identity and social representations to which the ocean as a place can be embedded. I relate my findings, such as values, environmental identity, place relationships, and understandings (or place identifications) of the marine environment, to these theories and propose a marine identity. This marine identity can be understood as being in line with social identity theory, incorporating components of distinctiveness, continuity, self-esteem and self-efficacy. In viewing marine identity in this way, it is logical to see how it can be threatened by environmental degradation and how marine citizenship may provide a way to restore congruence with place.

The key novel contributions described in this section are as follows:

1. Marine identity is a salient form of place and social identity which theoretically supports marine citizenship.

2. Evidence for this theory comes from the positive associations between environmental identity, marine place attachment, and particularly marine place dependency, with depth of marine citizenship; and from mapping findings from this research onto a model of social identity process applying theories from Breakwell (1986, 1993) and Twigger-Ross and Uzzell (1996).

3. The marine identity and marine place attachment concepts expand the theories of place and settlement identity beyond localities and social settlements to include classes of natural environment, demonstrating their capacity to underpin human place attachments.

4. Viewing marine identity as a form of place identity in this way suggests that marine citizenship may be a means of reinforcing congruence in the marine identity, where aspects are threatened by a degraded marine environment.

The thesis advanced here, that there is a marine identity which is supported by marine citizenship, and for which marine citizenship may be a remedy for incongruence caused by anthropogenic impacts, is a new way of looking at this form of civic participation. This concept expands the scope of marine citizenship participation beyond knowledge deficit, public perceptions, or factors influencing pro-environmental behaviours, and challenges researchers to look more holistically at the relationship people have with the ocean and how it is situated in society. It illuminates a path between formative experiences of the ocean, which promote positive bonds that can be understood as marine place attachment and ocean connectedness, and developing a marine identity which is both sustained by and promotes marine citizenship. There are various aspects along this route which policy could target. For example, delivering wider opportunities for a diversity of publics to engage in positive ways with the marine environment; using messaging and information which develops marine representations that will be accepted by a wider range of groups of people;

supporting restoration and protection of marine environments that provide high quality experiences connecting healthy oceans with marine place relationships; and delivering effective and inclusive participation opportunities for communities and the wider public for marine decision-making, marine planning, and local place-making.

Recent research in the Philippines has exposed a potential role for marine identity in marine citizenship. Jabar et al. (2018) used focus groups to discuss marine citizenship with urban and island residing young people in the Philippines and found that they viewed the ocean as a source of livelihood, food, comfort, restorative healing, and identity. The study also highlighted the tendency to view marine citizenship as pro-environmental behaviours, such as sustainable fishing practices or waste disposal, and there was little indication of a wider understanding of or engagement in civic participation. Whilst that research did not investigate the relationship between marine citizenship and identity, it did find that communities identifying more strongly with the sea were more engaged in marine citizenship. This provides a cross-cultural and cross-geographical perspective to my own findings.

Whilst this model lends itself well to interpretation of the findings uncovered in this research project, it has not been explicitly tested in this research. Further investigation is required to validate it and to examine its direct influence upon marine citizenship in practice. It is proposed here as a theoretical way to understand how factors examined in this research can explain the motivation to be a marine citizen. It is important to remember that the context of the marine identity proposed here is one which is congruent with a healthy marine environment. This is likely a function of the research subjects being active marine citizens. There may be other expressions of marine identity that are not founded on ecologically coherent place-relationships, which is of particular importance if other kinds of marine identity (for example built on extractive or purely recreational relationships with the sea) can serve to reinforce harmful marine practices. The existence of other expressions of marine identity and the means by which they are formed will be important for future investigation. It is probable that the context of formative ocean connections shape later marine identity.

7.3.3. BROADENING THE MARINE CITIZENSHIP DEBATE

Presented above is a discussion building on the environmental and marine citizenship literature, which is focused on identities and how they influence marine citizenship. Additionally, I have thoroughly examined the formerly over-looked, human-ocean place relationships pertinent to marine citizenship, uncovering a unique, natural-place-based marine place attachment, or thalassophilia, and highlighted the multi-dimensional ways in which humans connect to the ocean. I have furthered the marine citizenship debate by identifying a possible marine identity which theoretically may create a positive feedback loop in which marine degradation threatens the integrity of the identity and marine citizenship actions repair that disruption and reinforce the identity.

The motivation to participate in marine citizenship is only one part of the marine citizenship debate; the other being the policy framework and institutions within which marine citizenship is situated, and through which it is understood. Marine citizenship has been proposed as a policy channel with which to further the ecological agenda to reduce degradation of the marine environment (McKinley and Fletcher, 2012; Rees *et al.*, 2013). To respond to this debate, in this section I widen the field and challenge it to consider the legal and political framing of marine citizenship, broadening the scope of potential policy interventions that might nurture marine citizenship more widely.

There has been in the literature to date a fuzzy boundary between marine citizenship and ocean literacy (as a sub-section of wider environmental education), which has left unclear the distinction between knowing what kind of behaviours and choices are pro-environmental, and actively making choices. Marine citizenship, like the wider environmental citizenship, has evolved from environmental education roots and brought with it a strong dependence upon knowledge and awareness raising, without explicitly examining the political context of what citizenship is (Schild, 2016). This framing has been reinforced by research focused on the views of marine professionals (e.g. McKinley, 2010; Parsons *et al.*, 2014; Rees *et al.*, 2013) for whom knowledge, understanding and behaviour change are key aspects of their field. However in my research, which was concerned with the views of marine citizens themselves about their practice of marine citizenship, it was clear that a wider view of marine

citizenship was taken. Actions went beyond private, individual behaviours, to include public campaigning, protesting and civic participation. Responsibilities and duties were centred on the sustainable management of a common good, and the extent to which individuals were able to participate in shaping marine management. Whilst information can be an enabler of marine citizenship, it perhaps has most relevance further down the pathway to marine citizenship. Policy should be primarily concerned initially with access to marine citizenship.

Theoretically, the environmental movement has challenged traditional understandings of citizenship, particularly in relation to scale and boundaries, and by being a movement founded not on class but on universalism (Jelin, 2000). Ironically, the environmental citizenship models so far have tended to ignore the influence of the environment (as a material place) upon participation in environmental citizenship, focusing instead on individualistic psychological or knowledge-based factors (e.g. Blake, 1999; Hawthorne and Alabaster, 1999; Kollmuss and Agyeman, 2002; Stoll-Kleemann, 2019), and as such being predominantly interested in individual behaviour change. Yet social movements are collectivist and political, and the marine citizenship debate would be furthered by engaging in these aspects because they sit at the heart of why some people do/do not and can/cannot become marine citizens.

In traditional citizenship discourse both rights and responsibilities are highlighted and I have argued in Chapter Four that the rights aspects has not been given attention in marine citizenship research to date. Jelin (2000) argues that ultimately citizenship is the right to participate in constructing and transforming society. This is participation that happens not individually, in the privacy of the home, but publicly in the institutions of justice and democracy (in democratic nations at least) (Cao, 2015; Dobson, 2003; Jelin, 2000). Citizenship is about improving on the status quo and reshaping how things are done, part of which is challenging the rules of exclusion and demanding recognition of new political communities. Jelin (2000) states that to be human is to belong to a political community, and that human society is founded on public interactions and the inherent understanding that there is 'other'. Citizenship therefore becomes the struggle to define what is 'other' and the shape of public interactions. In current society, the 'other' is the marine and natural environment and placing it in political discourse might be through granting it a political

agency of its own, or through recognising a political community of marine citizens who advocate for it. Social movements are a collective process (Diani, 1992; Tindall, 2002) and one which resonated with the marine citizens in this research, who talked of empowering the grassroots, of the public being engaged, and of shaping local marine places as communities. These are framings which are very different from awareness raising, pro-environmental behaviours, or environmental education.

This line of thinking identifies a new set of challenges for scholars concerned with marine citizenship to investigate. I propose that to understand the capacity of marine citizenship in promoting good marine environmental health, we need to examine how the marine environment comes to be viewed as a common good requiring sound stewardship; how do people bring the ocean into their sense of identity, imbuing it with agency through them as a political entity; how can civic participation be increased in democracies; and how can the ocean be advocated for in non-democratic nations. Interdisciplinary thinking can help answer these questions.

This critique is not intended to undervalue the importance of environmental education or ocean literacy, nor is it intended to absolve individuals in taking responsibility for the environment they occupy and impact upon. However to view marine citizens only as influential in the sphere of their own private lives, is to do them a disservice (Chawla and Cushing, 2007; Jelin, 2000; Schild, 2016). Marine citizens have here been found to be strong advocates and champions of the ocean and of environmental action and activism. Voluntary (or professional) public engagement work is aimed at producing social learning and inspiring a collective response to the condition of the ocean. And in their public engagement, marine citizens have been intuitively using many tools which resonate with marine place attachment, formative marine experiences, promoting sensory and emotional human-ocean connections, and sharing the stimulating qualities of the sea. This is a powerful citizenry that has capacity to put pressure on social and political structures that have proven resistant to the environmental movement at large. As it develops, the marine citizenship field would benefit from more clarity over the goals and nature of what is ocean literacy and what is marine citizenship. Environmental education can be a tool to better equip environmental citizens in their activism and civic participation

(Chawla, 1999; Chawla and Cushing, 2007; Schild, 2016; Stoll-Kleemann, 2019). My research suggests that policy responses to marine citizenship therefore could focus not only on improving ocean literacy, but also on raising public understanding of democratic processes, and investigating how environmental decision-making is made accessible to the public to participate in, and how much regard it pays to the public's views. Additionally, if marine citizenship is to be a policy channel for improving marine environmental health, then there also is a need to examine the processes by which marine citizens can participate in environmental decision-making.

7.3.4. THE RIGHT TO BE A MARINE CITIZEN

In some ways the right to participate in marine decision-making is the final piece of the marine citizenship puzzle. Marine researchers and practitioners can look at policy measures to support development of sustainability-focused marine identities in the wider public. We can also look at delivering ocean literacy and citizenship education that equips the public with an understanding of what decisions and actions would contribute to improved marine environmental health, and what procedures can be utilised to effect policy change. If one views citizenship as the fundamental right to participate (Jelin, 2000), or breaking down citizenship dichotomies as the right to be responsible (Dobson, 2003), then the barriers to that participation and the structures through which participation occurs – which will vary nation to nation – come into the spotlight. Such an environmental social justice lens would be interesting to explore further.

For participation in environmental decision-making, the Aarhus Convention (United Nations Economic Commission for Europe, 1998) is currently the most important international, legislative tool for environmental citizenship and we should turn our attention to how effectively it (and its descendent regional and national legislations) provide for marine citizenship. But also policy thinking should not be limited only to specific participation legislation, but also the way participation is incorporated in wider marine environmental legislation (such as the *Marine and Coastal Access Act 2009* in the UK), and the procedures which are used.

The findings in this research which related to formal participation touch on three key areas, in the context of the marine environment: 1) awareness of rights to participate in environmental decision-making; 2) extent and nature of participation in environmental decision-making; and 3) how effective current procedures are in delivering the participation in environmental decision-making that they are intended for. These questions are addressed within the context of the UK legal framework due to the sample population used in this research.

It would seem from my research that in the UK, and other nations (Jabar *et al.*, 2018), awareness of legislation conferring participatory rights in marine decision-making is not common, notwithstanding the limited research investigating this. Marine citizens are much more familiar with the typical recourse of their elected representatives, and the most familiar procedures of planning consultation. That NGOs can have influence is recognised, but not their role, through the Aarhus Convention, to fulfil the right to participate via representations on environmental matters at a range of scales. The evidence from my research is that in most cases, the individual feels disempowered against the policy of government, but participation seems to be viewed more effective and fair when procedurally transparent and set on a more local stage, and NGOs recognised as the means effecting wide scale change. What then are the implications of this? It raises questions about whether individual marine citizenship participation can only exert influence on wider marine environmental health through a jigsaw of smaller scale actions. Given the criticism levelled at the Aarhus Convention about the role of NGOs (Lee and Abbot, 2003; Nadal, 2008), it's not yet clear what effective avenues there are for participative democracy where the marine environment is concerned. Scholars of environmental law can add to this debate through investigation not only of the conservation and economic implications of marine law, but also the nature of public participation written within them.

In addition to formal procedures, it is also important to remember that many individual and private acts of citizenship are informally done and barriers to these actions, such as time, health, other responsibilities and cost, are typical to other areas of civic participation and as such are a function of the wider systemic architecture (Kollmuss and Agyeman, 2002; Lorenzoni *et al.*, 2007; Sundeen *et al.*, 2007). Marine citizenship research would benefit from

interrogation by 'blue' political theory to examine systemic barriers to participation, which has the added dimension of being connected to the ocean as a place. An avenue of investigation of this sort would have much to say, for example, on the role of coastal communities in responding to significant climate change impacts.

And finally, there is a signpost in this research for the need to better understand collective marine citizenship. This has been a study of individual marine citizens, some of whom practice some of their public marine citizenship through marine groups, and its investigation of those groups is therefore limited. However it has emerged in my research that marine groups serve to exchange knowledge of all kinds, improve legitimacy of local knowledge, to offer moral support and connection to others with a marine identity, and to create targeted change in local coastal places. What is the recognised role of marine groups within marine policy-making and would situated marine citizenship be better supported by recognising grassroots marine groups in a similar way to how formal coastal partnerships are recognised in the marine policy landscape?

7.4. A NEW DEFINITION OF MARINE CITIZENSHIP

In what is a relatively new area of academic research, there is scope to examine the definition of marine citizenship. I have raised in this discussion two very striking gaps within the marine citizenship literature, which are the lack of investigations into how marine citizens relate to the ocean as a place, and the lack of consideration of the rights contained within the current definition of marine citizenship. Figure 7.2 presents a schematic of the key components of marine citizenship, as identified in this research (see 2.3.2 for analysis). On the left are the place variables, bringing in the new findings of human-ocean place relationships, for which very little prior research has been conducted in the context of marine citizenship. On the right are the policy variables, examining the societal framework within which marine citizenship takes place and areas of opportunity for fostering marine citizenship. There has been limited research investigating the role of marine citizenship as a policy channel. In the middle of the diagram are the internal, person variables and the individual responsibilities within marine citizenship. These individualistic aspects of personality and behaviour have faced the most interrogation in the literature. However social

identity is about how individuals view themselves in relation to wider society; identities don't exist in a vacuum but are referent to others. Therefore, the marine identity, together with a political framing of marine citizenship which also examines rights, illuminates a more public and sociological facet of marine citizenship that has not yet been investigated in the marine citizenship literature.
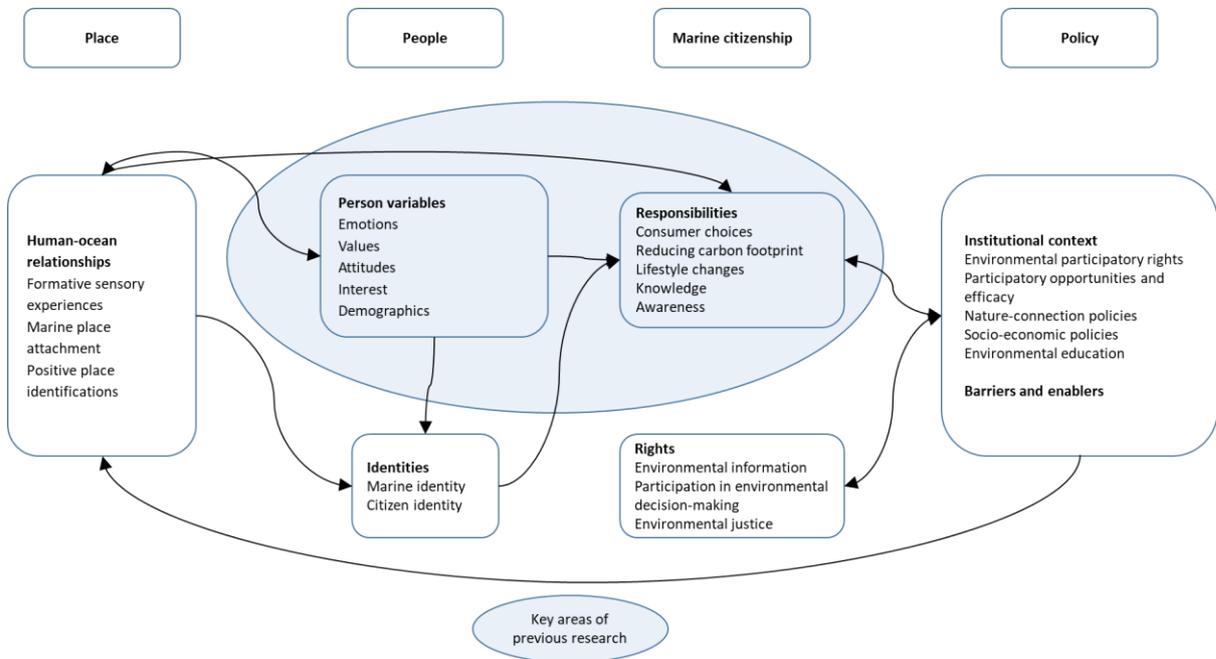
Figure 7.2 Schematic of key factors associated with marine citizenship, organised according to the themes of this thesis: Citizenship, Policy, People and Place. Arrows indicate direction of influence, established through previous and this research, both quantitatively and qualitatively. Shaded sections indicate areas that have typically been investigated in marine citizenship studies.

This research indicates a need to revisit the definition of marine citizenship and help fill in some of these gaps to help it be more inclusive of the societal contract that is citizenship, and to broaden the agenda beyond ocean literacy and individualistic pro-environmental behaviours.

At this point I would remind the reader of the current definition of marine citizenship most typically used:

"*The rights and responsibilities of an individual towards the marine environment, with individual marine citizens exhibiting an awareness of, and concern for, the marine environment, an understanding of the impacts of personal and collective behaviours on the marine environment, and is motivated to change personal behaviour to lessen its impact on the marine environment.*" (McKinley and Fletcher, 2012, p840)

This definition thoroughly fleshes out the responsibilities as being aware of and concerned about the impacts upon the marine environment – an indication that learning and knowledge is an act of citizenship – and that personal behaviours are changed as a consequence. What this definition does not touch on is the wider meaning of citizenship as participation in societal transformation, nor does it provide context for what the rights might be that a marine citizen should enjoy.

Taking the empirical findings and theoretical reflections presented in this thesis, I would propose the definition to be refined as follows:

> **Marine citizenship is exercising the right to participate in the transformation of society's relationship with the ocean, and acceptance of responsibility to make informed decisions and choices about personal and collective actions that will contribute to a sustainable marine environment now and into the future.**

In so doing, this new definition poses the questions that need answering over how that right is expressed to the public, how participation is procedurally delivered, and how participation can be used to create transformation. It also challenges marine citizens to be responsible, be informed, and to participate in creating change. Finally, it acknowledges a goal that is in line with wider legislative frameworks, such as the Sustainability Development Goals, to promote sustainability into the future, because to be effective it can't only be about reducing impacts, it has to be about changing the relationship that humans collectively have with the ocean.

7.5. IMPLICATIONS OF THIS RESEARCH AND AREAS OF FURTHER STUDY

Throughout this thesis I have provided examples of where this work contributes to fields of study concerned with sustainable human interaction with the sea. Without repeating these key findings again, I will summarise some of the key implications of this research for those fields of study.

The most significant implication of this research is that it makes the case for changing our understanding of marine citizenship, which has typically been interpreted as a collection of pro-marine environmental behaviours that can be

prescribed and performed according to willingness and/or ability. The findings situate PEBs as being part of a set of identities and values which includes a broader social sense of responsibility. A fundamental question is raised about whether people can be active marine citizens if they are not active citizens, or whether marine citizenship might be a means or promoting more general active citizenship in individuals, particularly if effective participation in marine decision-making could be a gateway to wider civic participation and enfranchisement.

The biggest concern is that marine citizenship currently is exclusively for people who feel a part of society, and empowered to take some action, and that those who are marginalised and disfranchised may not feel able to be active in marine citizenship. Likewise, the important role of identification and emotional attachment to the ocean as a place raises questions about how those without physical access to the ocean can develop marine citizenship. Can vicarious experiences such as documentaries or aquariums be sufficient to generate emotional bonds or do we need programmes of marine experiences embedded into education, and made accessible to adults? Do we need whole populations of marine citizens, or will the ocean-climate nexus mean that pragmatically speaking wider environmental citizenship would also effect sufficient positive change? Additionally, the notion of marine citizenship as a right – the right to participate in marine environmental decision-making – is novel in this context. Despite legislation for broad environmental participation, this has not before been acknowledged as an important facet of marine citizenship. Future research might explicitly consider 'blue' politics and the citizen role within.

Within the study of place, this research has highlighted a novel concept of attachment to a type of natural place that is not a fixed locality, and shown that this attachment is of significance for generating active marine citizenship. As well as how this influences pro-environmental behaviours, this has implications for how we understand human place attachments and raises questions about other such generic type attachments that are not based on social communities, such as in settlement identity. These findings make a case for future place research that is broader in scope and examines the schema of our place understandings, particularly how such attachments intersect with cultural meanings of place. Specifically for marine research, does the cultural meaning

of the sea identified in this research translate from the UK setting of this research to other nationalities?

Furthermore, there is a question about the origins of such categorical place attachments and their relationship to these cultural meanings. For example, do people attach to the sea because they understand it as a place of freedom and challenge and they view themselves as people who embrace freedom and challenge, and if so does that preclude such attachments in people who have different values and identities, or can they be nurtured? There are implications here for environmental psychology and fields such as public perceptions. How we understand shared environmental meanings has implications for how they can promote self-identities. Do we need to promote experiences of an environment that are tailored to a variety of personal identities so as to prevent conflict with the self-concept? This goes beyond investigation of perceptions and attitudes, into the heart of who we believe we are and how place supports that identity.

It has been possible in this research to map the findings onto wider social psychological theories of identity and representations. Social theorists may have an interest in taking the marine identity model forward to better understand how it is situated alongside other identities held by marine citizens, and empirically investigating the components. Those interested in the psychological aspects of this work might be interested in further empirical investigation of the connection between the basic human values and marine citizenship, maximising the effectiveness of social marketing techniques.

For marine social science, this is a case study of a complex human-ocean interaction with multiple influential components. It highlights that investigations on a smaller theoretical scale may only uncover some pieces of the puzzle, that the interactions between factors may be synergistic or antagonistic, and that important factors might sit well outside what might usually be considered as relevant to a topic. The mixed methods, interdisciplinary approach may be usefully applied to future studies in this arena to investigate connections and relative importance of factors.

And finally this study used a novel means of quantifying depth of marine citizenship. Future research may wish to replicate and/or refine this method to

examine and improve its wider applicability in the study of marine citizenship and as a tool for evaluation of intervention efficacy.

7.6. STUDY LIMITATIONS

7.6.1. MARINE CITIZENS AND THE GENERAL POPULATION

This research was designed with the explicit intention to investigate people who are already active marine citizens. It was not designed to investigate factors in the general public in relation to marine citizenship, nor was it designed to empirically examine factors in their efficacy in promoting active marine citizenship. When considering the findings, this should be borne in mind. Tools developed in this study, such as the marine citizenship scale, could be employed (with or without adaptation) to studies in the general population or for examining changes in marine citizenship activity following interventions. The ideas that have emerged around the sea as a category of place, values and identities, can be used in future research in order to illuminate contrast or similarity between marine citizens and other members of the general public.

Though it's known some participants in this research had grown up in other countries, the research investigated the UK legislative setting of environmental participation, was delivered in English, and the participants all lived in the UK. Given the emergent findings around meanings and understandings of the sea, it must be acknowledged that these may not be universal. Future research would be welcomed which replicates some of this work in other nations, particularly non-European and non-English speaking nations, to examine any differences in cultural understandings of the sea. It should be a shared goal of the growing field of marine social science to seek an international understanding of marine citizenship, and to uncover similarities and differences in different populations that can influence marine policy.

7.6.2. UNEXPLORED FACTORS

Despite making conscious efforts in the research design to allow space for emergent factors in this holistic study, it is inevitable that some factors will emerge that have not been actively explored. The study therefore cannot be claimed as a fully comprehensive understanding of marine citizenship influences and motivations. For example in Chapter Five: People, it's noted that

other research into civic participation finds that familial influences are important for who grows up to be active in citizenship, but this was not a factor that was strongly emergent in these findings. The use of open-ended interview was intentional to create space for all factors to emerge, but participants may have had many influences in their lives that they no longer consciously recall. It is hoped that the most significant factors have been uncovered but future research will no doubt uncover additional influences.

Social formative experience, as inductively emergent, has not been thoroughly engaged with in this research project. However the emergence of a possible marine identity calls for an examination of how that identity arises and what the social influences are that produce a marine identity which is consistent with a healthy marine environment. Dewey (1903) identifies all learning as being social, with interpersonal interaction modulating relations between both human-human and human-physical objects. A marine identity therefore raises the significance of the social learning experience. It is notable in this research that an important aspect of self-reported marine citizenship activity is public engagement, through a variety of means, acting upon the social context around human-ocean interactions. Further and deeper investigation specifically into how marine citizens were socially conditioned to be so is warranted and will aid design of future public engagement and interventions.

The environmentalist framing of this research may provoke limits to the analysis of the data as it moves towards marine identity and place relations, and away from pro-environmental behaviour. Though interdisciplinary, this research has not extended into areas of the humanities, and there may be lessons to be learned from wider disciplinary investigation. Certainly in anthropology there are examinations of the emotional and embodied experience of physically interacting with the ocean (Anderson, 2012) and challenges to understanding of citizenship to include the ocean as a non-human power authority, which frames human-ocean political relations in a non-environmentalist way (Whyte, 2019). There is likely to be valuable insight to be gained from anthropological investigation of marine identity, perhaps especially in those who would not consider themselves to be active marine citizens. The language of anthropology, giving agency to the materiality of the environment, might find

unexpected synergy with the ecological science base of pro-environmentalism which acknowledges intrinsic value of the environment.

It is important to remember that the marine identity theory postulated in this chapter is untested against marine citizenship. To do so quantitatively would need a metric to be devised and tested. To do so qualitatively would require design that examines the four components of place identity to be investigated in direct association with marine citizenship. As mentioned above, the marine identity characterised in this work is one that resonates with marine citizens who are already pro-environmental and there may be different characterisations of marine identity serving to reinforce different behaviours. The key contribution of this theory is to add an important place component to models of environmental citizenship which are lacking one.

7.6.3. QUANTIFYING MARINE CITIZENSHIP

There is not one measure used to assess marine or environmental citizenship, nor to measure pro-environmental behaviours, though a range of measures have been used in the literature. In this research a novel measure of marine citizenship was developed in order to test/investigate some quantitative statistical relationships with other measurable factors. The goal of the measure used in this research was to enable measurement of activity even where participants did not live near the coast or did not participate in a given activity (e.g. sailing, coastal walking). I therefore created a scoring system for each activity listed in the survey, which created ranked categories of effort from simply not doing something (not littering) up to the heavy citizenship lifting of creating political campaigning, which requires considerable time and effort. By using a mean score for each category, participants were not excluded through lack of access to a given item. In this way the metric used measures how 'thick' the citizenship is rather than a tick-box list of pro-environmental behaviours. Such findings therefore would benefit from replication of this measure and the research field would benefit from a refined and consistent measurement tool.

Having completed the research and discovered the findings presented in this thesis, this measure could be refined to accommodate emergent findings such as the public engagement aspect of marine citizenship, or expanded to give more items and a more reliable mean for each category. A more complicated

measure could incorporate elements of time or financial commitment to the items to assist with categorising according to investment. Such ideas could be investigated together to examine relative reliability and methodological usefulness, together with appropriate statistical tests to examine reliability and predictive power. Place research in particular is plagued by differing measurement tools, some designed generally and others for more specific places, making comparison of findings difficult. A standardised and accepted measurement tool for marine citizenship to ensure comparability between studies would be welcome as this field grows, and early investigation and adoption of such a measure would be encouraged.

7.6.4. MIXED METHODS DESIGN

The choice of mixed methods in this study is justified as giving multiple perspectives to a complex and little studied concept. However, in taking this approach it is acknowledged that the work does not sit firmly within specific quantitative or qualitative disciplinary practices and the results may not be as deep as they might be if a single method were employed. The inductive nature of the study was chosen to allow significant themes to emerge and to signpost areas of interest for future study that might focus on more select methodologies. The findings therefore are offered as a springboard for future research that empirically investigates select areas of interest. Additionally, as a methodology, it is offered as a useful approach for gathering a sweeping understanding of a complex human-environmental concept, to elucidate higher level connections and relationships, and to generate an holistic picture of the concept.

7.7. CONCLUSION

This PhD research project set out to examine the role of marine citizenship in promoting good environmental health. I took the approach not of an environmental scientist looking to establish a direct connection between individual pro-environmental behaviours and improved water quality and biodiversity, but of an interdisciplinary marine social scientist wanting to understand what marine citizenship is and how we might use it to improve our shared marine environment, which faces impacts from every level and structure of our society.

I investigated three key areas to provide an holistic investigation of marine citizenship. These were Citizenship, People and Place. In Citizenship I sought to investigate the external, social factors that produce, influence or preclude marine citizenship. I considered the kinds of people who are able to be active marine citizens, together with the socio-economic factors that act upon them, particularly in relation to education, knowledge, and profession. I looked at the ways they act as general and as marine citizens, from individual, private actions like reducing their carbon footprint, through shared actions such as organised beach cleans and citizen science, right up to very public participation in the democratic structures in place for marine environmental management.

I found that having education or professional associations with the environment was more common amongst marine citizens but not a pre-requisite, and that marine citizens came from all walks of life. I found that marine citizens are generally active citizens, participatory in society as voters and petition signers, and that they use their sense of agency to the benefit of the marine world. I found that they had a strong understanding of marine issues and legal instruments aimed at conservation and marine environmental protection. But they were not aware of their rights to get involved in environmental developments. This of course has raised more questions.

Can the sea be a means of engaging people in broader civic participation or do people need first to feel empowered in society before they can get on board with environmental action? This has serious implications for members of society who are marginalised. It could mean they are excluded from exercising their environmental rights and shaping their environmental futures, or it could mean that the ocean has the power to reconnect marginalised people with society, and introduce to them to structures of democracy that give them agency. There is also a question for environmental law: do people need to be aware of their participatory rights in order to exercise them? Logically, a lack of awareness must be disempowering since people don't know they can seek participation and the power rests with the institutions who are obliged to engage with the public concerned, to determine who is concerned and how to engage them. It also emerged that the most effective participation in decision-making seemed to be at local scales, because this enabled greater transparency of the process

and better communication about the outcomes. Marine citizens did not rate highly participatory experiences where the outcome was unknown to them.

In People, I directly investigated basic human values, simple environmental attitudes, and environmental identity. Through the inductive methodology, emotions also emerged as an important variable. These psychological and sociological components are important to understanding who we are and how we understand ourselves and in various ways have been widely used in the investigation of pro-environmental behaviours. Whilst values such as self-transcendent universalism or benevolence (or the related biospheric or ecocentric values which occupy the same dimensions) are common in those who would engage in environmental citizenship, they did not have an impact on how deeply marine citizenship was engaged in by the marine citizens in this research. Instead this was associated with strong stimulation and weak conformity values – polar opposites on the basic human values wheel. Whilst environmental attitudes of non-materialism and belief that humans are abusive to the environment were strongly held, they did not typically have an impact on marine citizenship depth. Conversely climate change concern was positively associated, situating marine environmental health within the wider global context as an ocean-climate nexus in the minds of marine citizens. But the most statistically significant factor was environmental identity, which was strongly associated with intention to consider impacts upon the marine environment. Feeling a part of the environment and it a part of oneself, being moved to spend time in it and to act on behalf of it was, quantitatively, the most important component in this strand of investigation. But also striking was the emotional engagement with the sea expressed as a motivation for marine citizenship. Marine citizens did not say they were engaged in marine citizenship because they had acquired knowledge about marine environmental issues, they said they were engaged because they love the sea and they are passionate and worried about it. Qualitatively, this emotional affinity to the sea was clearly very important.

And finally in Place, I investigated a breadth of ways in which humans connect to place: the emotional connection that is termed place attachment; the sense of belonging and identity that composes place identity, which was investigated in environmental and social terms, and at a range of scales from neighbourhood to

global; and dependency upon the marine environment for wellbeing, recreational, or livelihood needs. These investigations provided further quantitative evidence to the qualitative emotional affinity: there is a thalassophilia, a marine place attachment. Unusually for place attachment, this is not limited in location to a local coast or the coast where a marine citizen grew up, but in the whole coast, the whole ocean, wherever that might be in the world. Marine citizens seek out the sea to live near it and spend time in, on, under and by it. Almost any sea will do, but it must be the sea and not some other environment, as evidenced also by the strength of marine place dependency. Examination of scaled place identity showed that marine citizens identify more with environments than with society, and feel belonging most strongly at local and global scales. But these did not have an impact on marine citizenship depth. The reason for these strong relationships with the marine environment seemed to stem from sensory experiences – another factor that emerged from the data. Marine citizens described a wide range of formative experiences that stimulated the senses and couched their physical interactions with the sea in terms of the senses.

The quality and breadth of this investigation into marine citizenship has only been made possible by adopting an interdisciplinary methodological approach. Using a range of methods drawn from across disciplines, and adopting an inductive approach to qualitative analysis, enabled new understandings of marine citizenship as a concept to emerge. To date, the body of literature relating to marine or ocean citizenship (and arguably much of the environmental citizenship literature), has grown from environmental education and ocean literacy, and associated environmental science concepts of knowledge and understanding, and broadened to include psychological concepts of values, attitudes and behaviour. Public perceptions research has pushed at these boundaries to recognise that people bring their own meanings and these must be acknowledged to have public engagement in environmental issues.

Meanwhile, sociologists and social psychologists have been questioning the role of identities and social ties in people's engagement in pro-environmental behaviours. The study of place within human geography has examined the relationship people have with their local place (or the world) and how this affects their attitudes towards pro-environmental policy decisions. Those involved in

political theory, have looked at the democratic processes and participatory constructs of citizenship in an environmental context and questioned their current suitability to creating an environmentally engaged civic population. These varied approaches to environmental citizenship indicate what a complex concept it is. To date there have not been efforts, at least in the marine context, to pull these strings together and situate marine citizenship in the wider body of literature. This thesis has been an attempt to do that.

I cannot claim that I have incorporated every possible disciplinary perspective, nor that the factors investigated are fully comprehensive. It would surely be impossible to do such a thing. However I can claim in this thesis to have brought together high level perspectives from environmental psychology, environmental science, human geography, green political theory and environmental law. I have investigated key ideas from these disciplines and identified and contributed to important gaps, most notably in the marine and the citizenship aspects of the concept of marine citizenship.

Though human-ocean relationships have been touched on in the marine citizenship literature, they have not been explicitly investigated and this has been a striking gap in the literature. Here I have identified both a specific marine place attachment, a thalassophilia, which is transferable across locations. This is an important contribution also to the place literature as it develops the concept of settlement identity and promotes the idea that non-civic types of place can also provoke strong emotional attachments. I have also proposed the existence of a marine identity. Drawing on social psychological theories of environmental identity, place identity and social identity, I have advanced a tentative proposition of marine identity which offers a framework for connecting together values, social relationality, and place relationships to marine citizenship. Through marine identity new avenues of research are called for to directly examine its role within marine citizenship and to further investigate the social and political context to the human-ocean relationship.

When I began the research I knew my own connection to the sea was strong but did not presume it would be the same for other people. However the data clearly showed that the fundamental point of marine citizenship was the ocean. The ocean as a home to fascination, adventure, and beauty; as a gift to

bequeath to others now and in the future; and as a place for deep emotion, sensory experience and connection to life lived. To support impact of my research I have engaged with many different publics to share my findings and consistently the Place chapter findings are what have most resonated with people. To attempt to describe scientifically this deep affinity with the sea is possibly futile, but I hope that uncovering marine place attachment and marine identity is a firm step in that direction, and a challenge to researchers of marine citizenship to widen the debate and to not forget the sea.

With marine citizenship having been proposed as a policy tool for marine management, it's important that these findings are incorporated into the models being developed. Evidence does not support environmental education as the sole means of producing changed behaviours, rather the findings in this research suggest that the relationship people hold with the sea might be the most effective and stable way to produce marine citizenship. Positive experiences with the sea should be a priority policy measure for people of all ages. But we must also look at the external setting of marine citizenship because it doesn't happen in a vacuum. Addressing societal civic participation might be key to improving environmental citizenship more widely, so that people are better equipped to navigate democratic structures. Institutionally there needs to be consideration of how participatory processes are conducted and how those processes and the outcomes are communicated to participants. From an academic perspective, there must be acknowledgement that there is a fundamental lack of awareness of rights to environmental participation even amongst some of the most environmentally active people. The implications of this need further interrogation and recommendations developed to decrease the distance between people and environmental decisions.

The findings in this thesis should be of interest to researchers in a wide range of disciplines who are concerned with environmental civic participation, environmental and ocean management, environmental education, pro-environmental behaviours, geographies of the sea, environmental psychology, and social-ecological systems. They will also be of interest to practitioners working at the ocean-society interface. The novel contribution of this research to the field, in exposing the importance of the ocean as a place, through marine place attachment (thalassophilia) and marine identity, and in examining the

rights aspect of marine citizenship, will support the maturing of this field of enquiry and its capacity to promote good marine environmental health in future.

8. APPENDICES

APPENDIX 1 ONLINE SURVEY AND PARTICIPANT INTRODUCTION/CONSENT INFORMATION

UNIVERSITY OF EXETER

Marine Citizenship [CoCoasts]

Page 1: Introduction and consent

Thank you for clicking to participate in this survey.

About this research

My name is Pamela Buchan and I am a post-graduate researcher at Exeter University. My PhD research investigates marine citizenship - people voluntarily performing activities for the common good of the marine environment - and how it can help promote a healthy marine environment. It looks at a number of UK case studies, of which Capturing our Coasts forms one, which differ in the way people engage with marine environmental issues. The aim of the research is to better understand the different factors related to citizenship and how these influence citizenship, specifically marine. This research has been approved by the University of Exeter Ethics Committee.

How will data be collected and used?

Data will be collected through this survey, interviews, focus group, and shadowing of participants at events. I will ensure participants are fully informed and consent to participation. Participants have the right to withdraw from the research should they change their mind up until the point at which data has been anonymised, after which it will be unidentifiable. Data collected will include answers provided to survey questions, audio recordings of interviews, and notes taken by myself. It will be used to produce a PhD thesis and may be published in

scientific journals. To protect the privacy of participants, your name will not be associated with any information you provide. Data will be safely stored at the university and destroyed five years after the research has been completed.

The Survey

This survey includes a range of questions designed to investigate your opinions and values about citizenship of all kinds, with particular emphasis on your marine citizenship activities. It will also collect general demographic information. In addition to closed questions, there are also opportunities for you to use your own words for some questions. With the exception of consent, questions are optional or have a 'prefer not to answer' option, but the more fully you are able to answer the survey the more informative the research will be. Remember that the data is anonymised so answers will not be identifiable to you personally unless you additionally volunteer and are asked to participate in a focus group. The survey should take around 30 minutes to complete, depending on how much detail you choose to provide, and is best displayed on a computer screen rather than on a mobile phone. You can save the survey and return to it at a later time but may find it easier to complete it in one sitting. At the end of the survey you will be given the option to volunteer to participate in a focus group. Expression of interest neither guarantees nor commits you to participate in the interview or focus group. You can print out your responses at the end, should you wish to.

Questions

If you have any questions about this research either during or after participation or wish to withdraw from the research after having participated, please do not hesitate to contact me. You can reach me on email at pb381@exeter.ac.uk. Please make a note of my email address for future reference.

Prize draw

Survey respondents can choose to be entered into a prize draw for a £25 Amazon voucher. To opt into this draw, please provide an email address when requested to do so at the end of the survey.

Consent

1. I have read the information provided and understand the aims and objectives of this research. I understand that data collected in this research will be used for publication in a PhD thesis and scientific journals, that my data will not be connected to my name and that any data which might be personally identifiable will only be used with my additional consent for that data. I understand that I can stop participating at any time without prejudice and that I can ask to remove my data from the study prior to it being anonymised after which point it won't be possible

to identify my data. ✳ *Required*

  ○ Yes

2. I agree to participate in this survey. ✳ *Required*

  ○ Yes

3. I confirm that I am 18 years old or over. ✳ *Required*

  ○ Yes

Page 2: Some general information about you

4. Which gender do you identify as?

5. Please type your age in years in the box.

Please enter a whole number (integer).

6. If you have an educational or professional background related to the environmental or specifically marine issues, please specify. e.g. I have a degree in marine science; I have worked for a conservation NGO.

7. For how long have you lived in the local area where you live now? Please type in the number of years. If less than a year, type in 0.

Please enter a whole number (integer).

8. Please provide the first part of your home postcode, e.g. PL1. This is to determine how far you live from the sea.

Please enter a valid UK postcode.

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9. How often do you visit the sea? Please select the closest option.

- ○ Every day
- ○ Once a week
- ○ Once a month
- ○ A few times a year
- ○ Less often

Page 3: Thinking about citizenship

10. You are participating in this survey because of your citizenship involvement with Capturing our Coasts. What motivates you to be involved in this and other citizenship activities related to the marine environment?

10.a. In what ways has your participation in Capturing our Coasts influenced your marine and other citizenship participation?

11. In which of the following ways do you actively participate generally as a citizen? Please select all that apply.

☐ Vote in elections

☐ Join in with campaigns organised by others on issues that are important to you

☐ Start up your own campaigns on issues that are important to you

☐ Sign petitions

☐ Volunteer with local organisations doing work in your local area

☐ Volunteer with organisations working nationally

☐ Volunteer with organisations working internationally

☐ Pick up litter

☐ Participate in environmental action e.g. nature monitoring, citizen science, land regeneration

☐ Member of a trade union

12. In which of the following ways do you actively participate specifically as a marine citizen? Please select all that apply.

☐ Pick up beach litter

☐ Don't drop litter on the beach

☐ Stick to recognised paths to avoid erosion

☐ Support marine conservation charities or campaigns e.g. donations of time or money, campaign activities

☐ Organise marine environmental action e.g. beach cleans, public events

☐ Make consumer choices to protect the environment e.g. certified sustainble fish, toiletries without plastic microbeads

☐ Make lifestyle choices to directly protect the marine environment e.g. not consume fish

☐ Make lifestyle choices to indirectly protect the marine environment e.g. reducing your carbon footprint by using less fossil fuel based energy, paying more for green energy

☐ Make conscientious choices in your recreational pursuits e.g. not finning close to sea bed when diving, choosing less harmful antifoulant paints for your boat, ensuring all fishing gear is retrieved

☐ Participate in marine citizen science

12.a. Are there other ways in which you feel you act as a marine citizen?

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12.b. What things enable you to be an active marine citizen?

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12.c. What things prevent or get in the way of your marine citizenship activities?

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13. In what ways do you think marine citizenship is important for marine environmental health?

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14. Please rank on the following scale how active a marine citizen you believe you are.

Please don't select more than 1 answer(s) per row.

	1 - I never consider the impact I have on the marine environment	2	3	4	5	6	7 - I always consider the impact my actions have on the marine environment
As a marine citizen	☐	☐	☐	☐	☐	☐	☐

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Page 4: Marine policy and decision-making

15. Are you aware of any international/EU/national legislation which promotes the processes of citizenship and public participation in environmental and marine decision-making? Please describe what you are aware of?

16. To what extent do you think each of the following are involved in marine and coastal decision-making?

Please don't select more than 1 answer(s) per row.

	1 – Not at all involved	2	3	4	5 – Strongly involved	Don't know
Local residents	☐	☐	☐	☐	☐	☐
Local government/local politicians	☐	☐	☐	☐	☐	☐
National Government/Government ministers	☐	☐	☐	☐	☐	☐
International Government/Government ministers	☐	☐	☐	☐	☐	☐
Environmental organisations	☐	☐	☐	☐	☐	☐
Aquatic recreation organisations	☐	☐	☐	☐	☐	☐

17. In what ways do you think marine citizenship is important for the process of marine decision-making?

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18. Have you ever been involved in a **marine** decision-making activity? E.g. marine conservation zone consultation, submission to a government enquiry

○ Yes
○ No

18.a. If yes, please list any such activities and how you contributed.

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18.b. Please describe in what ways and to what extent you think your views were or were not taken into account?

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19. If you are not happy with an environmental decision from a regulatory body and/or law or regulation, which avenues are available to you for legal redress?
Please also describe if you have ever used one, or how else you can raise your concerns. If you don't know, please state so.

Page 5: You and the sea

20. To what extent do you feel a weak or a strong sense of belonging to the **built and natural features** of the following environments?

Please don't select more than 1 answer(s) per row.

	1 – No sense of belonging	2	3	4	5 – Very strong sense of belonging	Don't know
The neighbourhood where you live	☐	☐	☐	☐	☐	☐
The region of the country where you live	☐	☐	☐	☐	☐	☐
The UK	☐	☐	☐	☐	☐	☐
Europe	☐	☐	☐	☐	☐	☐
The Earth / The whole world	☐	☐	☐	☐	☐	☐

21. To what extent do you feel a weak or a strong sense of belonging to the **people and society** in the following areas?

Please don't select more than 1 answer(s) per row.

	1 – No sense of belonging	2	3	4	5 – Very strong sense of belonging	Don't know
The neighbourhood where you live	☐	☐	☐	☐	☐	☐
The region of the country where you live	☐	☐	☐	☐	☐	☐
The UK	☐	☐	☐	☐	☐	☐
Europe	☐	☐	☐	☐	☐	☐

							Not applicable, I don't live near a beach or coastline
The Earth / The whole world	☐	☐	☐	☐	☐	☐

22. How attached are you to your local beach or coastline? Please rate how much you agree or disagree with each statement.

Please don't select more than 1 answer(s) per row.

	1 - Strongly disagree	2	3	4	5 - Strongly agree	Don't know	Not applicable, I don't live near a beach or coastline
Living in this place was my conscious choice.	☐	☐	☐	☐	☐	☐	☐
I have strong family connections to this place.	☐	☐	☐	☐	☐	☐	☐
The marine environment is the best place for the things I like to do.	☐	☐	☐	☐	☐	☐	☐
There are many coasts in the UK and in the world where I could live.	☐	☐	☐	☐	☐	☐	☐

23. How do you feel about the marine and coastal environment in general? Please rate how much you agree or disagree with each statement.

Please don't select more than 1 answer(s) per row.

	1 - Strongly disagree	2	3	4	5 - Strongly agree	Don't know	Not applicable
I miss the sea when I am not there	☐	☐	☐	☐	☐	☐	☐
I am proud of the marine environment	☐	☐	☐	☐	☐	☐	☐
The sea is part of me	☐	☐	☐	☐	☐	☐	☐
I want to be engaged in affairs of the sea	☐	☐	☐	☐	☐	☐	☐
I take pleasure in looking at the sea	☐	☐	☐	☐	☐	☐	☐

24. In what way do you feel dependent upon the marine environment?

Please don't select more than 1 answer(s) per row.

	1 - Strongly disagree	2	3	4	5 - Strongly agree	Don't know
I depend upon the sea for my livelihood	☐	☐	☐	☐	☐	☐
I depend upon the sea for my wellbeing	☐	☐	☐	☐	☐	☐
I depend upon the sea for my recreation or other interests	☐	☐	☐	☐	☐	☐

Page 6: A bit more about you and your citizenship

25. The following statements are about the world around you and yourself. Think about each statement and indicate to what extent you agree or disagree with them. *[If you have difficulty viewing the whole table, you can select the option to show it as seperate questions.]*

Please don't select more than 1 answer(s) per row.

	1 - Strongly disagree	2	3	4	5 - Strongly agree	Don't know
The balance of nature is very delicate and easily upset.	☐	☐	☐	☐	☐	☐
When humans interfere with nature it often produces disastrous consequences.	☐	☐	☐	☐	☐	☐
Humans are severely abusing the environment.	☐	☐	☐	☐	☐	☐
If things continue on their present course, we will soon experience a major ecological catastrophe.	☐	☐	☐	☐	☐	☐
I admire people who own expensive homes, cars and clothes.	☐	☐	☐	☐	☐	☐
Some of the most important achievements in life include possessing things such as expensive cars or clothes.	☐	☐	☐	☐	☐	☐
I don't place much emphasis on the amount of material objects people own as a sign of their success.	☐	☐	☐	☐	☐	☐

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I worry a great deal about climate change.	☐	☐	☐	☐	☐	☐
Climate change is a more serious challenge than our politicians like to think.	☐	☐	☐	☐	☐	☐
I spend a lot of time in natural settings (woods, hills, countryside, lakes, ocean).	☐	☐	☐	☐	☐	☐
Being a part of an ecosystem is an important part of who I am.	☐	☐	☐	☐	☐	☐
I have a lot in common with environmentalists as a group.	☐	☐	☐	☐	☐	☐
Behaving responsibly toward the Earth - living a sustainable lifestyle - is part of my moral code.	☐	☐	☐	☐	☐	☐
I feel that I receive spiritual sustenance from experiences with nature.	☐	☐	☐	☐	☐	☐

26. Below some people are briefly described. Please read each description and say how much each person is or is not like you. Please complete every line. *[If you have difficulty viewing the whole table, you can select the option to show it as seperate questions.]*

Please don't select more than 1 answer(s) per row.

Please select at least 21 answer(s).

	Very much like me	Like me	Somewhat like me	A little like me	Not like me	Not like me at all	Don't know

Thinking up new ideas and being creative is important to them. They like to do things in their own original way.	☐	☐	☐	☐	☐	☐	☐
It is important to them to be rich. They want to have a lot of money and expensive things.	☐	☐	☐	☐	☐	☐	☐
They thinks it is important that every person in the world should be treated equally. They believe everyone should have equal opportunities in life.	☐	☐	☐	☐	☐	☐	☐
It's important to them to show their abilities. They want people to admire what they do.	☐	☐	☐	☐	☐	☐	☐

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It is important to them to live in secure surroundings. They avoid anything that might endanger their safety.	☐	☐	☐	☐	☐	☐	☐
They like surprises and are always looking for new things to do. They think it is important to do lots of different things in life.	☐	☐	☐	☐	☐	☐	☐
They believe that people should do what they're told. They think people should follow rules at all times, even when no-one is watching.	☐	☐	☐	☐	☐	☐	☐

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It is important to them to listen to people who are different from them. Even when they disagree with people, they still want to understand those people.	☐	☐	☐	☐	☐	☐	☐
It is important to them to be humble and modest. They try not to draw attention to themselves.	☐	☐	☐	☐	☐	☐	☐
Having a good time is important to them. They like to "spoil" themself.	☐	☐	☐	☐	☐	☐	☐
It is important to them to make their own decisions about what they do. They like to be free and not depend on others.	☐	☐	☐	☐	☐	☐	☐

It's very important to them to help the people around them. They want to care for others' well-being.	☐	☐	☐ 334	☐	☐	☐	☐
Being very successful is important to them. They hope people will recognise their achievements.	☐	☐	☐	☐	☐	☐	☐
It is important to them that the government ensures their safety against all threats. They want the state to be strong so it can defend its citizens.	☐	☐	☐	☐	☐	☐	☐
They look for adventures and like to take risks. They want to have an exciting life.	☐	☐	☐	☐	☐	☐	☐

It is important to them always to behave properly. They want to avoid doing anything people would say is wrong.	☐	☐	☐	☐	☐	☐	☐
It is important to them to get respect from others. They want people to do what they say.	☐	☐	☐	☐	☐	☐	☐
It is important to them to be loyal to their friends. They want to devote themselves to people close to them.	☐	☐	☐	☐	☐	☐	☐
They strongly believe that people should care for nature. Looking after the environment is important to them.	☐	☐	☐	☐	☐	☐	☐

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Tradition is important to them. They try to follow the customs handed down by their religion or their family.	☐	☐	☐	☐	☐	☐	☐
They seek every chance they can to have fun. It is important to them to do things that give them pleasure.	☐	☐	☐	☐	☐	☐	☐

Page 7: And finally...

27. Which of the following is the highest level of educational qualification you hold?

- ○ O Level / GCSE / NVQ Level 1-2 or equivalent
- ○ A Level, AS/A2 Level, NVQ Level 3-4 or equivalent
- ○ Undergraduate degree (e.g. BA, BSc)
- ○ Postgraduate degree (e.g. MA, MSc, PhD)
- ○ None of the above
- ○ Prefer not to answer

28. Gross household income combines your income with that of your partner or any other household members with whom you share financial responsibilities before any taxes or deductions. What is your gross HOUSEHOLD income from any source?

- ○ Under £5,000 per year
- ○ £5,000 to £9,999 per year
- ○ £10,000 to £14,999 per year
- ○ £15,000 to £19,999 per year
- ○ £20,000 to £29,999 per year
- ○ £30,000 to £39,999 per year
- ○ £40,000 to £49,999 per year
- ○ £50,000 to £99,999 per year
- ○ £100,000 and over
- ○ Don't know
- ○ Prefer not to answer

29. Which party do you most closely align with politically?

- ○ Conservative
- ○ Labour

C Liberal Democrat

C Scottish National Party (SNP)/ Plaid Cymru

C Green Party

C Don't know

C Would not vote

C Prefer not to answer

C Other party (please specify)

29.a. If you selected Other, please specify:

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To fully understand the findings of the survey and the way individuals pursue marine citizenship activities, I will be working with a small number of participants in activities such as focus groups, interviews, and observing at events. If you would be interested in further participation of this nature, please provide your name and a contact email address/telephone number below. If selected I will contact you to discuss the next stage.

30. Name:

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31. Email address:

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32. If you would like to be entered into the prize draw for a £25 Amazon voucher, please provide your email address below. This data will be removed from the rest of the survey so please complete this box even if you have already provided contact details.

33. If you have comments, please use this space to share them.

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Page 8: Thank you!

Thank you for participating in this survey. The answers you have provided will help scientists to better understand the relationships we have with the sea and what drives us to want to improve its health.

As a reminder, your data is confidential and you will not be personally identifiable from it. Should you have any questions about this survey, further opportunities to participate, or generally about this research, please do get in touch: pb381@exeter.ac.uk.

APPENDIX 2 PARTICIPANT INTRODUCTION/CONSENT INFORMATION FOR INTERVIEWS

Participant Information Sheet
Investigating marine citizenship and its role in creating good marine environmental health

My name is Pamela Buchan and I'm a post-graduate researcher at Exeter University. My ESRC (Economic and Social Research Council) funded PhD research investigates marine citizenship and how it can help promote a healthy marine environment. It looks at a number of case studies which differ in the way people engage with marine environmental issues. The aim of the research is to better understand the different factors related to marine citizenship. Please consider this following information and ask me any questions you may have.

What is this stage of the research about?
I am contacting you now because you expressed in the online research survey that you would be interested in participating further. This stage of the research is all about you and your relationship with the sea. Though the group I initially contacted you by will be relevant to how you are engaging with the sea as an active citizen now, it will be only one part of the story. This stage is about more deeply exploring the experiences that have shaped your attitude towards the sea, and the facets of your character and values that showed to be particularly relevant in your survey responses.

The aim is to uncover the different ways that different people become connected to the sea and begin to see it as their duty to promote its health, in order to better inform ways in which others may be similarly inspired.

How will data be collected and used?
Data will be collected through shadowing of participants at events and follow up interview. Participants will be asked to let me shadow them at a marine citizenship event or activity of their choosing, and participate in a follow up interview, ideally on the same day, of around an hour. As well as written and oral note-taking, data collection will include audio recordings of interviews in order to ensure accuracy in transcription. Photographs may also be taken. Recorded and written data will include things like quotes, observations of what is happening and what you are doing, and the nature of event. The data will be used to produce a PhD thesis and may be published in scientific journals and other scientific and relevant outputs.

This research is aimed at improving our understanding of the ways in which people grow to care about the marine environment in such a way that they feel a sense of duty towards it. By understanding the different routes people take to this place, we can develop a better range of ways of encouraging others to be active marine citizens.

To protect the privacy of participants, your name will not be associated with any information you provide. In the exceptional case that any data to be used is sufficiently unique that it could be personally identifiable, it will only be included if additional consent is obtained. Audio recordings will be transcribed into text and the audio file subsequently deleted. A copy of that transcription will be made available on request should you wish to check for accuracy. You have the right to withdraw from the research at any time should you change your mind. Data can likewise be withdrawn up until the point at which data is anonymised and analysed. Personal identifiable data, such as email address and email communications, will not be stored with research data and will be retained only until completion of the research in case additional consent, as previously described, is sought. Contact details will also be kept should you wish to

be kept informed of the research progress and outcomes. Anonymised research data will be processed for the purposes of this research and future scientific output.

How will my information be kept confidential?

The University of Exeter processes personal data for the purposes of carrying out research in the public interest. The University will endeavour to be transparent about its processing of your personal data and this information sheet should provide a clear explanation of this. If you do have any queries about the University's processing of your personal data that cannot be resolved by the research team, further information may be obtained from the University's Data Protection Officer by emailing dataprotection@exeter.ac.uk or at www.exeter.ac.uk/dataprotection

This project has been reviewed by the Geography Research Ethics Committee at the University of Exeter.

Reimbursement

As the research is designed to take place alongside your usual activities, it's not anticipated that any costs will be incurred. If you are asked to travel anywhere specifically for this research, then reasonable travel expenses will be reimbursed.

Questions

If you have any questions about this research before, during, or after participation please do not hesitate to contact me. You can reach me on email at pb381@exeter.ac.uk or by phone on 07764492220.

Participant Identification Number:

CONSENT FORM

Title of Project: Investigating marine citizenship and its role in creating good marine environmental health

Name of Researcher: Pamela Buchan

Please initial box

1. I confirm that I have read the information sheet dated for the above project. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time
without giving any reason and without my legal rights being affected.

☐

3. I understand that relevant sections of the data collected during the study, may be looked at by members of the research team, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.

☐

4. I understand that taking part involves anonymised interview transcripts/photographs/audio recordings to be used for the purposes of:

Reports published in an academic publications

☐

Reports published in non-academic publications related to public engagement in marine management

☐

I agree that my contact details can be kept securely and used by the principle researcher from to contact me about research outputs

☐

5. I agree to take part in the above project.

☐

_____	_____	_____
Name of Participant	Date	Signature

_____	_____	_____
Name of researcher	Date	Signature

taking consent

When completed: 1 copy for participant; 1 copy for researcher/project file

APPENDIX 3 SUMMARY OF KEY DATA OF RESPONDENTS AND SURVEY POPULATION

		Whole sample mean/ proportion	Whole sample min.	Whole sample max.	Interview sample mean/pro portion	Interview sample min.	Interview sample max.
Demo-graphics	Women	61.20%			70.00%		
	Age	53	19	82	50.2	24	79
	≥Degree education	78.50%			80.00%		
	No stated relevant professional experience	79.80%			50.00%		
Environ-mental values	Humans abuse	4.50	1.00	5.00	4.15	2.50	5.00
	Non-materialism	4.36	1.33	5.00	3.33	3.33	5.00
	CC Concern	4.29	0.00	5.00	4.20	2.00	5.00
	EIDI	4.10	1.00	5.00	4.26	2.60	5.00
Basic human values*	Security	-0.23	-2.79	2.67	-0.65	-2.43	0.76
	Conformity	-0.59	-3.57	2.14	-1.05	-3.57	0.76
	Tradition	-0.23	-3.02	1.93	-0.05	-1.02	1.48
	Benevolence	0.95	-2.19	2.76	0.91	-0.93	1.93
	Universalism	1.34	-1.24	3.00	1.27	-0.14	2.48
	Self-direction	0.77	-2.26	3.00	0.86	-0.86	2.14
	Stimulation	0.14	-2.86	2.76	0.51	-1.02	2.14
	Hedonism	-0.56	-3.29	3.38	-0.65	-2.07	1.43
	Achievement	-0.81	-3.10	2.10	-0.50	-2.52	1.43
	Power	-1.49	-3.29	1.00	-1.30	-2.57	-0.43
Proximity	Residence (yrs)	19.50	0.00	79.00	17.40	1.00	9.00
	Sea proximity (mins)	19.60	2.00	114.00	8.80	6.00	16.00
	Sea proximity (Postal Districts)	1.83	1.00	10.00	1.00	1.00	1.00
Place identity – environ-ment	Local	3.98	1.00	5.00	4.50	3.00	5.00
	Regional	4.16	1.00	5.00	4.40	3.00	5.00
	National	4.00	1.00	5.00	4.00	2.00	5.00
	Europe	3.62	1.00	5.00	3.50	1.00	5.00
	Global	4.40	2.00	5.00	4.70	4.00	5.00
Place identity - social	Local	3.57	1.00	5.00	3.7	3.00	5.00
	Regional	3.61	1.00	5.00	3.8	2.00	5.00
	National	3.49	1.00	5.00	3.1	2.00	5.00
	Europe	3.28	1.00	5	3.2	1.00	5.00
	Global	3.94	1.00	5	4.4	3.00	5.00
Place Attach-ment	Score	4.30	1.14	5.00	4.60	3.86	5.00

Place depend-ency	Livelihood	1.848148	1.00	5.00	2.6	1.00	5.00
	Wellbeing	3.996403	1.00	5	4.3	3.00	5.00
	Recreation	3.97482	1.00	5	4.8	4.00	5.00
Marine Citizen-ship	Sum	6.71	2	10	8.5	6	10
	Score	7.72	1.7	15	12.29	5	15

Appendix 3 Comparison of basic quantitative measures of whole survey sample and interview sample.
*These are centred value scores derived from the Portrait Value Questionnaire (Schwartz, S. H., 2009).

APPENDIX 4 INTERVIEWEE CHARACTERISTICS

Pseudonym	Marine Group	Gender	Age (yrs)	Highest educational qualification	Marine citizenship score	Participated in marine environmental decision-making	Marine place attachment	Marine place dependency			Environmental attitudes		
								Livelihood	Wellbeing	Recreation	Humans abuse environment	Non-materialism	Climate Change Concern
David	2	M	24	Undergraduate	13.3	Yes	4.57	4	4	4	4.25	3.67	4.5
Sarah	1	F	26	Postgraduate	15	Yes	4.71	5	5	5	3.75	3.33	4
Simone	2	F	37	Postgraduate	15	Yes	4.71	2	5	5	4.75	4.33	5
Clare	2	F	41	Postgraduate	13.3	Yes	4.86	3	4	5	4	4.67	4
Jemma	1	F	41	A-level	5	No	4.86	1	4	5	4	5	4
Elizabeth	2	F	51	Undergraduate	15	Yes	5	5	5	5	2.5	5	2
Sonia	2	F	62	Postgraduate	5	No	5	2	5	5	5	5	5
John	1	M	69	Undergraduate	12	Yes	3.86	1	3	4	4.25	4	4
Marie	1	F	72	Undergraduate	14.3	Yes	4	1	3	5	4.25	5	4.5
Terry	1	M	79	None of the above	15	Yes	4.43	2	5	5	4.75	5	5

Pseudonym	Environmental Identity Index score	Basic Human Values centred scores									
		Security	Conformity	Tradition	Benevolence	Universalism	Self-directon	Stimulation	Hedonism	Achievement	Power
David	2.6	0.76	0.76	0.26	-0.24	0.43	-0.24	0.26	-0.24	-1.24	-0.74
Sarah	3.8	0.14	-0.36	-0.36	0.64	0.81	-0.86	0.14	0.64	-0.36	-0.86
Simone	5	-1.52	-1.52	-1.02	1.48	2.14	-0.52	1.48	-0.52	-0.02	-1.02
Clare	4.2	-2.07	-3.57	-0.57	0.43	1.1	0.93	0.93	1.43	1.43	-0.57
Jemma	4.6	-0.9	-0.9	-0.9	1.6	2.1	1.1	0.1	-1.4	-0.4	-1.4
Elizabeth	5	0.48	-1.02	1.48	1.48	2.48	1.48	-1.02	-1.52	-2.52	-2.52
Sonia	4.6	0.43	-1.07	0.93	1.93	1.43	1.43	0.93	-2.07	-2.07	-2.57
John	4.6	-1.86	-1.86	-0.86	1.14	1.14	2.14	2.14	-0.36	-0.36	-1.86
Marie	3.8	-2.43	0.07	0.07	-0.93	1.24	2.07	-0.43	-0.43	0.57	-0.43
Terry	4.4	0.52	-0.98	0.52	1.52	-0.14	1.02	0.52	-1.98	0.02	-0.98

Appendix 4 Key data for interview participants.

APPENDIX 5 CODE BOOK

INTERVIEW CODING	CODING SCHEME GENERATED FROM INTERVIEW DATA
People	Codes relating to people chapter of thesis
Demographics	
EID	Environmental Identity. Predominantly related to the EID components.
Environment for development	Formative for child development. Connects to ocean literacy in school or family settings. About geographic roots being connected with nature. May fall under time in nature, ultimately.
Environmental aesthetics	Nature more beautiful than art. Links to senses around sight.
Environmental citizenship	Time/money are only barriers to doing more for the environment. Things in common with environmentalists (politics). Pro-environmental behaviours engaged in. Sustainability as a moral code.
Part of nature	Humans as part of the natural world, not above or in charge of it, it not here to serve us. Linked to Universalism. Self-image as being nature-based. Sharing connection with other species. Pride in e.g. survival skills.
Time in nature	Spending time in nature is important. Gardening, outdoor recreation, bringing mementos of outside indoors, views of nature important in urban/human setting, needing to live close to nature, something is missing when nature is not close.
Wellbeing from nature	The environment gives wellbeing to humans through being in it. Improves mental or physical health. A spiritual connection. Improves mood.
Emotions	Relating to specific words and sentiments used to describe various aspects of the topic. Will be a second code alongside other things so will highlight how emotions are implicated in motivations or values.
Annoyed	
Boredom	Or needing something to do, not being idle.
Calm	
Cry	
Curiosity	
Envy	
Frustration	
Guilt	
Happy	
Love	
Magnitude	Will cross reference against other coding but may shed light on strength of emotions around certain issues or experiences.
Passion	
Pride	

Regret	
Sad	
Shock	
Worry	
Environmental concern	Relating to concern for climate change or (marine) environment.
Consumerism status	Do or don't have feelings about status of others or self in relation to consumption.
Facing ecological catastrophe	The sense of impending doom. Characterised by strong feelings/language, apocalyptic. Climate change concern. Urgency.
Humans abuse	Abuse environment, create disaster. Blame lying with humans and there being serious consequences.
Legacy	Focus on impacts for next generation, leaving them, to deal with a mess. Linked to Benevolence in the sense of the environment being given to the next generation.
Nature balance upset	Specifically about balance. Sense that we're part of the system, rather than just creating disaster, and we've tipped things over. Could be restored. Not apocalyptic particularly. Sense of equilibrium required to restore balance. Linked to Universalism.
Experiential	About the power of experience and its impacts.
Formative	Relating to shock experiences, or childhood memories etc. The experiences that set us on our path.
Media	Role of media in creating experiences for the public that may change minds or shape attitudes.
Occupation	Professional experiences due to related or connected job.
Serendipity	May not really get used, but about finding things by chance and this being a formative moment. Could be merged with formative.
Wildlife encounter	Specific episode of engaging with wildlife that has had an impact on values or behaviour. May be in third person in context of public engagement.
Group Social	Could go under policy group nodes but really is a people experience about the society a group offers. Friendship, company, support etc.
HVS	Schwartz basic human values
Achievement	DEMONSTRATION of COMPETENCE. Seeking others' approval, or I would argue one's own approval, using standards and measurables. Qualifications, tangible outcomes, policy changes. But something of the external gaze on those achievements too, as a driver.
Benevolence	People centred, may be on more local scale e.g. family, village community, other environmentally minded people. Key is on in-group but in-group may be broader scale (connection here to scale of social identity. About giving, kindness, sharing.
Conformity	Conforming to social norms. In my coding this includes negative expressions of CO, e.g. surprise at how other people are.

		Hedonism	SELF and PLEASURE. Confused boundary with Stimulation. Is tangibly about personal satisfaction and need. Not necessarily selfish, but is looking to fulfil own needs. Might include thrill-seeking if that gives pleasure. Pleasure is probably key.
		Power	STATUS CONTROL DOMINANCE OVER OTHERS/THINGS. to be responsible for exerting change or governing others' actions. Generally very low in entire cohort but looking at group leaders or those working closely with policy. Empowerment.
		Security	Relating to needing to be secure. Might be environmental, local.
		Self-Direction	INDEPENDENCE and DRIVE. Driving oneself forward independently. Setting things up. Steering one's path. Proactive.
		Stimulation	CHANGE and EXCITEMENT. Bit hazy against Hedonism. Thought of as being related to interest, but is more free than that. Freedom, risk, maybe more sensory.
		Tradition	Not just national cultural tradition but on a smaller scale, family tradition. Replicating childhood experiences. Connection from modern day sentiments ro behaviours to childhood family practices.
		Universalism	Recognising humans as part of a wider work that includes animals and environment.
	Politics		
	Senses		Participants explaining things in terms of bodily sensations. Mostly connected with values or place experiences.
		Cleanliness	Possibly connected with space. Likely connected with EID and environmental concern. Conveys a need for a lack of human impact on natural spaces.
		Movement	May be of the ocean or recreation, or may be seeing it. Some cross over between senses.
		Olfactory	Smell or taste stimuli that invoke sensation, emotion, experience.
		Sight	And light and colour.
		Sound	
		Space	This is like the opposite of claustrophobia. A positive sensation.
		Temperature	
		Touch	
	Social learning		Knowledge exchange, learning, through social means.
Place			Codes relating to Place chapter of thesis
	Attachment		
	Dependency		Needing to be by the sea for specific means.
		Living	To earn a living
		Recreational	For sport and leisure
		Wellbeing	For mental and physical health and peace of mind. Connects to EID.
	Place identity		Specifically about where one feels one belongs. Distinguished environmentally and socially, though may be same for each. Scale of identity. Where and who are you a citizen of?
		Belonging	Where do you call home?

	Connectedness	May be subsumed into other place identity codes. Relates to EID.
	Environmental	Citizen of a natural place, belonging to a natural place
	Social place	Citizen of a socially defined place, e.g. town, in-group. Scale related.
	Familial	
Proximity to sea.		Could be barrier or enabler. Could be about identity. But relating to distance to the sea. Likely to be coded alongside others.
	Frequency visit	Frequency of visits as a factor of other experiences or values.
	Inland vs coastal	Perceptions and tensions specifically relating to distance to the sea.
Scale		General code which will be associated with others.
	EU	Not likely to appear a lot but about connectedness via sharing policy.
	Global	Belonging in the world, Whole ecosystem approach. Crossing human-made boundaries.
	Local	Local beach, local coast, local town/village/city.
	National	About the UK as a nation. Territorial boundaries. May relate to policy reach.
	Regional	South West, Far South West, a large area, connected sea.
The Sea		The sea as a place
	Freedom	May be subsumed into unknown. Relates to absence of boundaries. Connected with values and possibly EID.
	Importance	Expressions of the sea as an environment that has particular importance to humans or the ecosystem, or as a key part of addressing climate change. May reflect in SE value.
	Ownership	Who owns it, how does a sense of ownership be conveyed, what impacts
	Quality	Relates to cleanliness as emotion. Relates to environmental concern. Is about the condition of the sea and its impacts of users of the sea and the wildlife.
	Unknown	The sea as a challenge (St) or freedom or open space. Enticing intellectually (Ac) and emotionally.
Urban v nature		Likely to relate to EID and UN. May not come up much, but about differing standards or attitudes or perceptions between urban and more rural environments,
Policy		Codes relating to Policy chapter of thesis
Barriers and Opportunities		Each code could be either if present/absence/dependent on individual circumstances.
Access		May be physical or not
Dependents		
Facilities		
Health		
Innovation		
Knowledge		Generally lack of. Relates to knowledge deficit.
Local support		
Money		
Self-image		Consciousness of the way viewed by others or self

	Systemic	Maybe institutional? Might need refining.
	Technology	
	Time	
Citizenship general		
	Journey	
	Responsibility	
	Volunteering (formal)	Formal, organised volunteering as a means of citizenship, marine or otherwise. NOT as a policy.
Environmental profession		
Group		All data relating to group purpose, organisation and impact.
	Aims	Purpose of group and goals.
	Knowledge exchange	Sharing of knowledge with members and external others.
	Networks	Relationships with other organisations
	Organisation	Management, structure, leadership, internal policy,
	Policy and impact	Effecting change on external policy e.g. via consultation contribution or lobbying.
	Reach	
Knowledge		References to learning, knowledge, education, formal and informal
	Education	Self-learning and teaching, formal and informal.
	Formal education	Ocean literacy, scientific literacy, school/FE/HE delivered.
	Public education	Educating the public, may be more or less formal, about developing ocean literacy in the public. Connects with knowledge deficit approach.
	Knowledge deficit	Expression for or against this idea of public motivation.
	Literacy	Knowledge of natural biota. May be place specific or more generic. Ocean, environmental, scientific.
	Local Env Knowledge	Relating to local environmental knowledge such as wildlife, places for recreation, tides etc.
	Longevity	Lasting knowledge. Generational knowledge. Discovering anew.
	Place knowledge	Knowledge relating to a specific place: geographical, social, recreational
Legitimacy		Themes of whose experience or knowledge or action is valid. In relation to others' approval. May link to Achievement or Power.
	Economic	
	Scientific	Scientific data as legitimate where other knowledge types may not be. Connects to knowledge deficit and ocean literacy. Also to citizen science as a citizenship activity.
Marine citizenship		Types and qualities of marine citizenship as an outcome
	Empowerment	Empowering individuals or community groups to take action as marine citizens
	Collective action	About working together with others to achieve change. Other individuals or groups.
	Grassroots	Power at grassroots level, role in marine policy and creating change.

		Marine citizenship opportunity	Creating a framework or opportunity to facilitate the practice of or development of marine citizenship. E.g. public events, education programmes, knowledge shared.
		Marine citizenship types	Specific activities described as being marine citizenship
		Art	
		Changing attitudes	Working to change attitudes of others, friends or public.
		Choices	Consumer, behavioural choices made with a view to improving marine environmental health
		Clean up	Beach cleaning, litterpicking on land to reduce waste into sea, removal of ghost gear etc.
		Financial gifts	
		Lobbying	
		Plastic reduction	
		Professional	Career related activities that form part of a marine or environmental professional role, with an understanding that the role was actively chosen as a form of citizenship.
		Recording	citizen science, wildlife recording, submitting records to databases, CoCoast
		Stewardship	Taking responsibility for an aspect of the marine environment or wildlife. e.g. reporting incidents to wildlife police, reporting damage to council, monitoring for illegal activity.
	NGO		Relating to role of NGO in public participation in environmental decision making.
	Public engagement		
	Regulation		Formal regulation of activities relating to the marine environment,
		Corporate responsibility	Businesses to act and be responsible for impacts and promoting change. Inc CSR and regulations such as polluter pays.
		Taxation	As a means of enforcing change to behaviours.
		Wildlife protection	Use of law and policy to enforce protections.
	Resources		Primarily funding, but also people required to perform environmental activities including citizenship.
	Trust		
	Volunteering		Volunteering as a policy, not individual citizenship. Will need double checking at end.
Survey coding			**Nodes specifically relating to survey data**
Motivations			Key themes and words for motivation to perform marine citizenship activities.
Champion			Encouraging others, working as teams, a social activity, sharing.
Citizenship			Expression of environmental citizenship - duty, help, contribute, give back
Concern			And other negative emotions associated with the changes we produce in the marine environment. e.g. despair worry
Conservation			Words around maintaining a natural composition, not specifically against human action, Including biodiversity, habitat etc.
Control			Expression of need to know or need to do. Empowerment.
Enjoyment			Expressions of personal, emotional reward and wellbeing.

Env Values	EID/Env values
Exposure concern	Concern generated through professional or other exposure to the marine environment
Future gens	Reference to sustainability for future generations
Health (physical)	
Human Values	
Interest	Fascination
Knowledge	Learning new things, teaching, information including research, exchange, dissemination, acquisition. Awareness
Love	Expressions of intense or deep emotional attachment - love, passion, caring.
Profession	Activities provide quantifiable reward for education or profession. For now also any connection with profession. Skills.
Protection	Words about defence from human activity inc impact, inc implicit reference, ie talking about improvement or quality.
Pollution	Material e.g. plastics, and chemical e.g. CO2/climate change
Recreation	Outdoor/marine pursuits
Sidekick	Doing it because others are
Social	
OtherCit	Statements of other volunteering or programmes participating in.
Outcomes	Impacts of this volunteering in others ways
Action independent	Made personal changes or performing actions as consequence of marine citizenship.
Barrier	Barriers to doing more
Barriers overcome	
Changed values	Increase in importance, new consideration etc. May have indirect influence on future citizenship.
Contemporary marine	Awareness or knowledge of marine issues - self, not others
Dissemination	Impact in other audiences beyond own circle
Emotional resilience	Supported ongoing/other citizenship through not feeling so alone.
Empathy	Emotional understanding of others in context of marine issues
Empowered	Expressions of making a difference.
Event	Single events as consequence of participation in this case study
Learning	Personal learning.
Marine Citizenship	Nodes relating to the practice of marine citizenship - types of activities
Animal rescue	
Barriers	Factors inhibiting participation in marine citizenship
Access	
Apathy of others	
Companions	

	Confidence	
	Culture	
	Dependents	
	Disability	
	Distance	
	Funding	
	Health	Age, physical fitness, specific conditions
	Lack of knowledge	
	Lack of professional support	Collaborators, facilitators
	Local opportunities	
	Motivation	
	Natural constraints	
	Weather	
	No barriers	
	Policy	
	Cit Sci specific	
	Companies	e.g. manufacturers, lack of choice.
	Safety	
	Time	Not enough, other commitments or interests.
	Transport	
	Uninteresting	
	Values	
Beach litter		
Champion		Encouraging others, disseminating
	Anti-marine citizenship	
	Art	
	Children	Specifically about educating, inspiring the next generation or influencing their values.
	Public engagement	Talks, events etc
	Social media	Specific code for SM as a means of dissemination and championing, due to sedentary nature of the action.
Collaborative working		
Enablers		Factors enabling participation in marine citizenship
	Culture	Contemporary issues coming to the fore, fashion, historic cultural norms
	Enabler Knowledge	
	Logistical	Access to tools, facilities, equipment etc
	Communications	e.g. social media. Passive, not group action.

Term	Description
Funding	Grants etc, also personal finances
Problems	The issues themselves are enabling by their existence
Time	Free time, flexibility
Person	Emotions that motivate, values, internally derived factors, physical and mental wellbeing and ability
Emotional value	Interest, passion
Empowerment	A means to make a difference, address feelings of futility etc
Env values	Concern, env identity
Health	
Hobbies	
Professional	Or educational opportunities
Proximity	To sea or project locations
Social	People, friends, colleagues, voluntary groups etc Collective action, existence of projects
Unusual	Could be interpreted in different ways, or requires looking at again.
Env values	Development of values in self or others.
Knowledge	
Lifestyle choices	Consumer, lifestyle, recreation
Lobbying	
Local action	
Marine litter	Clearing at sea
Media	
Policy development	
Position of authority	e.g. trustee
Pro Bono	
Professional output	
Project	Participation in projects for specific purpose
Recording	
Seeking	Looking out for ways to do marine citizenship; new to place/concept/values
Stewardship	Action and confrontation at the sea
Sustainable fishing	Practicing or consuming
Teaching	Dissemination via formalised means
Volunteering	Organisations or general references
Networked	Participation has created networks.
None	No impact on other citizenship
Other vol	Other volunteering done as a consequence.
Place attachment ID	Reference specifically to emotional relationship with the coast.

Professional		Widened horizons in work or study, skills or tools
Project		Specific projects arisen because of participation in case study.
Policy		Data relating to structural processes and problems e.g. funding, policy making, consultation etc.
Accessibility		
Awareness PE policy		
Cited policies etc		Policies, projects, legislation
Agenda 21		
AONB		
Aarhus Convention		
BAP		Biodiversity Action Plan
Bathing		Bathing Water Directive
Birds		SAC
CITES		
EIA		
EMA		
EU Directive 2003 4 EC		on public access to environmental information and repealing Council Directive 90/313/EEC
EU Directive 90 313		on the freedom of access to information on the environment no longer in force
Habitats		EU Habitats Directive
Marine regions		GIS data sharing
MARPOL		
MCA MCZ		
MSFD		EU Marine Strategy Framework Directive
Ramsar		
SDG14		Sustainable Development Goals
SEA		Strategic Environmental Assessment
SSSI		
SUSCOD		Sustainable Coastal Development in Practise ICZM project finished 2013
UK Planning		
UN Ocean Conf		
UN seabed stakeholder		UN international seabed authority stakeholder participation for interested persons
UNESCO		Biosphere, Geopark
VMR		no take zones, vol marine reserves
WCA		Wildlife and Countryside Act
WFD		EU Water Framework Directive
Citizen science		Seasearch, MCZ evidence

Conservation management	Conservation and marine management policy
Fishing	
Consultation	Legislation requiring consultation
Criticism	Comments relating to legislation efficacy
Devolved Wales	
Direction	Knowledge assumed to be held by others who ill disseminate
EU	References to the EU
MP lobbying	
NGOs	
PE leg None	Awareness of public engagement legislation
Public participation	
Rio	convention on biodiversity 1992
Some (unspecified)	
UN	
Collective action	
Environmental redress	
Elected officials	
Env redress barrier	
Env redress gov body	
Env redress networks	
Env redress petition	
International NGO	
Legal advice or action	
Local NGO	
National NGO	
Policing bodies	
Protest	
Public participation in decision making	
Social media campaign organisations	
Experience participation	Experience of participation in decision making
Citizen science	
Coastal partnership	
Consultation general	
Env designation	
LA	

	Law	
	Local marine planning	
	Marine education	
	MCZ	
	MP MEP MSP AM Cllr	
	NGO campaign	Participation in any NGO campaign or lobbying activity.
	Not decision making	
	PE	
	Petitions	
	Pioneer	
	Planning	
	Press or media	
	Professionally	As part of job
	Report author	
	Unknown impact	
	Value of the sea	
MarCit value		Importance of marine citizenship, what it can contribute.
	Accessible	
	Apathy	Prevents apathy is involved.
	Applied Knowledge	eg scientific, to be used for management
	Awareness raising	Outcome of marine cit
	Behaviour change	
	Campaign	
	Capacity	
	Caring	As an outcome of marine cit
	Collective action	Has more impact
	Communication	Making someone an effective communicator, peer to peer influence, networking
	Community knowledge	
	Empowering	Even is subjectively, like giving a feeling of doing something.
	Future generations	Developing a culture for the future
	Important	Words stressing important/vital etc.
	Inspire others	
	Knowledge deficit	Assumption of pathway to action from knowing.
	Marine health	Outcome of marine cit
	Minority	Sense of standing up to prevailing culture or norms.

Necessity		If citizens don't do it, nobody will
Not understood		
Ownership		
Participation		
Place attachment		Familiarisation, exposure leading to emotional attachment - passion, caring etc
Proximity		Assumption of closeness leading to citizenship or caring
Responsibility		
Scale		References to scale - global/local
Shapes self		Influence on own self, values
Small consequence		
To decision making		value of mar cit in policy
	Capacity	
	Citizen pressure	Pushing on decision makers and public opinion
	Collective action	
	Communication	Between communities and governance
	Component	Alongside other bodies
	Conflict resolution	
	Criticism	efficacy depends on other factors
	Diversity	
	Don't know	
	Emotionality	Internalised influence
	Environmental advocacy	
	Impactful	
	Ineffective dk	Dk=don't know
	Information provision	citizen science
	Integrated decision making	
	Knowledge deficit	
	Legislative	
	Legitimacy	
	Local knowledge	To make better decisions
	NGO collaboration	
	Participation Incentive	An action appealing to public/decision-makers, encourages participation in decision-making
	Personal decisions	Improved
	Power balance	
	Purity	Professionals as biased, citizens as honest

	Rights	
	Specific functions	e.g. planning
	Sustainability	Necessary
	Volunteering	
	Universalism	Affects everyone so all implicated
	Unusual	
NGO efficacy		
Participation efficacy		
Tourism		Data relating to visitors/tourists
	Familial	Family or childhood connection.
Unusual		Data that doesn't fit general themes, for later classification.

APPENDIX 6 SAMPLE OF CODED TRANSCRIPT

Appendix 6 Excerpt from an interview transcript with NVivo coding.

APPENDIX 7 ETHICAL APPROVAL

https://www.exeter.ac.uk/staff/ethicalapproval/index.php

Details	
Title of project	Investigating marine citizenship and its role in creating good marine environmental health
Type of project	PhD
Name of researchers	Pamela Buchan
Correspondents email address	Pb381@exeter.ac.uk
Estimated start date	01/03/2017
Research groups:	Geography (Streatham)
Project supervisor:	Louisa Evans
Summary	
Lay summary (400 words)	This research will critically analyse the spectrum of stakeholder engagement and participatory approaches employed within the marine environmental sector in the UK. In collaboration with case-study partners it will empirically examine examples of applied citizen science and engagement in marine policy and planning, to illuminate successful approaches that can be applied to environmental policy more broadly. This interdisciplinary research will bridge the interface between marine science, governance and policy, and behavioural and educational theories. This research will review existing sociological theories about public engagement in policy and environmental issues, including democratic theories and post-normal science, and apply them to the following research activities: 1. Review experiences of stakeholder and community engagement and empowerment in the context of the new political background created by the UK's Marine and Coastal Access Act 2009 and the Marine Policy Statement through: document analysis of the four English regional MCZ consultations; survey of stakeholders who participated in single regional case study; key-informant interviews. 2. Conduct in-depth empirical analyses of three case-studies of applied citizen science and engagement, including Coastwise, Sea-Changers and Capturing Our Coasts, by: ethnographic approach shadowing organisations; mixed methods approach to integrate quantitative and qualitative data from document analysis, surveys and interviews on opportunities for different publics to participate. 3. Investigate ways to incorporate the increasingly important role of community/public engagement in policy-making through: analysis of successful activities currently in practice as elucidated in activities 1-2; action research to pilot and evaluate engagement approaches.
Does your study involve animals	No
Communication and Consent	
Will you describe the main experimental procedures to participants in advance, so that they are informed in advance about what to expect?	Yes
Will you tell participants that their participation is voluntary?	Yes

Will you obtain written consent for participation?	Yes
If the research is observational, will you ask participants for their consent to being observed?	Yes
Will you tell participants that they may withdraw from the research at any time and for any reason?	Yes
With questionnaires, will you give participants the option of omitting questions they do not want to answer?	Yes
Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	Yes for the majority of respondents. There may be a few exceptions – see below.
Will you debrief participants at the end of their participation (ie. give them a brief explanation of the study)?	Yes (on closing page of survey, verbally as part of interviews, written handout with details at conclusion of participation)
If you have ticked No to any of the questions in section 1 and you consider that your project has no significant ethical implications, please give an explanation here	A possible exception to anonymisation may occur for the qualitative data associated with ethnographic approaches or interviews (for example derived from the group leader). If data risks not appearing anonymous additional consent will be sought for the specific data and use proposed.
Participants	
Will your project involve deliberately misleading participants in any way?	No
Is there a realistic risk of any participants experiencing either physical or psychological distress or discomfort?	No
Vulnerable Groups	
Are your participants under the age of 18?	No
If your participants are under the age of 18, will you be recruiting from schools/colleges?	N/a
People with learning or communication difficulties	No
Those at risk of psychological distress or otherwise vulnerable	No
People in custody	No
People engaged in illegal activities (e.g. drug taking)	No
Projects involving animals	
Track A : No significant ethical implications	

I consider that this project has no significant ethical implications to be brought before the Departmental Ethics Committee.	Yes
What ethical issues are raised by your research and how will you minimise their impact? If you answered yes to the above, please explain what ethical issues are raised by your research etc	The research will uphold the core pillars of ethical research: Autonomy; Beneficence; Non-maleficence; Confidentiality; Integrity. Research is worthwhile and important and will be conducted with integrity. No apparent harm will come from involvement in this research and all participants, including those recruited via collaborative organisations, will be fully informed and free to choose to participate or not. Anonymity will be maintained in all cases of survey response and focus groups. In the case of shadowing, it may not be possible to anonymise the participants of the study from other group members. This will be clearly explained to group participants prior to consent. The research will be conducted with honesty. As a Sea-Changers trustee and Chair of trustees at time of funding application, I have a connection with this charity which has enabled this collaboration. As with all partnerships, this collaboration will seek to promote both the aims of the research and the aims of the charity. There is no monetary connection between myself and Sea-Changers and the partnership was chosen due to the synergy of our respective aims – that of promoting and understanding participation in marine citizenship activities. Sea-Changers primarily fundraises from marine businesses, however this collaboration will be focused on the network of grant recipients. There is no apparent conflict of interest. Recruitment – CoCoast – organisations delivering the project will facilitate self-selecting recruitment for surveys. There will be project evaluations which will include my own research questions. Any additional surveys of my own will also be distributed via the project network. Some secondary data will also be used, collected by CoCoast for their project (e.g. volunteer postcodes). Follow on focus groups/interviews will be recruited for via local CoCoast organisations. Coastwise – participants in both surveys and ethnography will be self-selected through from finite pool of Coastwise members. Additional surveys/research, e.g. via Sea-Changers, will be similarly recruited through self-selection. Surveys - Responses will be anonymous and/or data will be anonymised. Sensitive personal information such as sexuality will not be collected. Any questions that could be deemed sensitive will be optional and data will be anonymised. Anonymity will be discussed in the consent form and directly with participants. Interviews - Interviews will be recorded and prior consent for this will be obtained. The prospect of a permanent record is an ethical implication. This will be addressed by transferring audio transcripts to text and destroying the original audio copies. Use of direct quotes or data that may risk anonymity will only be included with consent. Text data will then be stored and eventually deleted in accordance with standard procedure. Shadowing* – Shadowing will involve attending events with key participants and/or the main group and observing their participation in the event and engaging in follow up or concurrent discussion with participants. Consent will be sought on an ongoing basis to ensure participants are happy to engage in the shadowing experience and fully understand the procedure. In the case of non-public events, such as meetings, consent for researcher presence will be sought from other attendees that are not the subject of research. Private information heard during shadowing will be treated as confidential, where necessary transcripts/notes/writing drafts will be shared with participants to ensure approval for their inclusion in the results. Similarly,

participants will be provided with privacy as needed during shadowing periods.

Attempts will be made to remain in the background, however if called upon to participate I will weigh up the situation as to potential effects upon participant-researcher relationships and objectivity of research.

Shadowing experiences over a period of months at key group events, rather than as a single intensive period of time will minimise the risk of shadowing becoming too intrusive or intense for participant and/or researcher.

Data storage – in accordance with university guidelines, electronic and paper primary data will be securely stored for five years after completion and publication of the research, after which it will be destroyed. Audio data will be transcribed and the audio deleted. Stored data will be anonymised. Data will be handled and stored in accordance with the Data Protection Act.

I will take a reflexive approach towards this research, being aware of ethical implications and seeking additional consents or modifying my research practice as circumstances arise to ensure research complies with University ethical guidelines.

* The following texts were consulted for guidance on ethics of shadowing:

Johnson B. (2014) Ethical issues in shadowing research. *Qualitative Research in Organizations and Management: An International Journal* 9(1): 21–40

Iphofen R. (2015) Research Ethics in Ethnography/Anthropology. European Commission, DG Research and Innovation.

9. CHAPTER EIGHT: BIBLIOGRAPHY

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