A fulfilled human life: Eliciting sense of place and cultural identity in two UK marine environments through the Community Voice Method

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ABSTRACT

Human impacts on the marine environment threaten the wellbeing of hundreds of millions of people. Marine environments are a common-pool resource (CPR) and one of their major management challenges is how to incorporate the value of ecosystem services to society in decision-making. Cultural ecosystem services (CES) relate to the often intangible benefits people receive from their interactions with the natural environment and contribute to individual and collective human wellbeing. Priority knowledge gaps include the need to better understand shared values regarding CES, and how to effectively integrate these values into decision-making. We filmed 40 Community Voice Method interviews with marine stakeholders in two areas of the UK to improve on the valuation of coastal and marine CES. Results show that cultural benefits including sense of place, aesthetic pleasure and cultural identity were bi-directional, contributed directly to a 'fulfilled human life' and were associated with charismatic marine life and biodiversity. Other-regarding self-transcendence values were salient underscoring a desire for sustainable marine management. We critically reflect on our analytical framework that integrates aspects of the UK National Ecosystem Assessment and IPBES conceptual frameworks. The thematic codebook developed for this study could prove useful for future comparative studies in other marine CES contexts. We propose that values-led management could increase the efficacy of marine planning strategies.

1. Introduction

Unprecedented levels of human impact on the marine environment threaten the wellbeing of hundreds of millions of people worldwide who depend on the ocean for their food and livelihoods (WWF, 2018). Some of the most common drivers of change in the marine environment relate to the loss of productive/species-rich habitats, plastic pollution and overexploitation of fish/invertebrates (IPBES, 2018). Marine environments are a common-pool resource (CPR) shared at local, regional and international levels, through national and international marine management policies (e.g. UNCLOS, OSPAR, EU Marine Strategy Framework Directive) that enable different types of users at multiple geographic scales to access oceanic resources and services.

Effectively managing CPRs is challenging due to the complexity of socio-economic and environmental drivers that threaten marine ecosystems and the services they provide. On the one hand, valuing aesthetic qualities in a seascape may motivate moral actions to protect it

(Cooper et al., 2016). On the other hand, poorly managed or degraded CPRs can diminish aesthetic qualities and reduce people's sense of place thereby encouraging ecologically destructive behaviour, which leads to further degradation of the marine environment (Brehm et al., 2006). Whilst there are cases of well-managed CPRs based on principles of stewardship and community-level management (e.g. Jones et al., 2010; Kahui and Richards, 2014; Artelle et al., 2018), major challenges remain, including the difficulty in quantifying the value of ecosystem services and embracing these values in decision-making (Haines-Young and Potschin, 2009; Atkins et al., 2013).

It is possible to better anticipate and manage conflicts in marine and coastal contexts by making stakeholders' shared values explicit, providing procedures for their expression and formation, and incorporating them into decision-making processes (Kenter, 2016a). This is especially the case if supported by policies and practices with appropriate institutions at various levels of decision-making (Jones et al., 2010; Kahui and Richards, 2014; Artelle et al., 2018). Values-led management can

enable the formation of sustained relationships in places where they have been disrupted or are lacking (Artelle et al., 2018). A broader recognition of the potential for place-based, values-led approaches to environmental management could become part of the wider arsenal of science, law, policy and practice interventions necessary for addressing socio-ecological challenges (Artelle et al., 2018).

This study focuses on cultural values as an important type of shared values. Kenter et al. (2015, p. 88) define cultural values as 'Culturally shared principles and virtues as well as a shared sense of what is worthwhile and meaningful. Cultural values are grounded in the cultural heritage and practices of a society and pervasively reside within societal institutions.' We consider cultural values regarding the sea and coast in relation to the benefits people derive from marine cultural ecosystem services (CES).

In this paper we interpret CES as the diverse cultural benefits (e.g. symbolic, aesthetic, [1] spiritual), that accrue from particular interactions between people and nature (including both livelihood and leisure-related; Fish et al., 2016), implying that CES and their values are context-specific (Bryce et al., 2016; Kenter, 2016b). Benefits in this context often relate to human wellbeing[2] as deriving from various ecosystem services (e.g. Carpenter et al., 2009; Raudsepp-Hearne et al., 2010; Turner et al., 2014; Bryce et al., 2016; Bullock et al., 2018). We explore CES concerning marine and coastal places, practices, experiences, identities and management principles.

The links between place, practice, experience, identity and management have been investigated through various disciplinary lenses, mostly from the perspective of place-meaning and place-attachment (including sense of place) (for reviews see e.g. Milligan, 1998; Stedman, 2002; Wynveen et al., 2010; van Putten et al., 2018). Sense of place therefore concerns the 'collection of symbolic meanings, attachment, and satisfaction with a spatial setting held by an individual or group', and is thought to consist of affective (place attachment), cognitive (place identity) and conative (place dependence) components (Stedman, 2002, p. 563; Jorgensen and Stedman, 2001).

Place meaning and attachment are strongly linked to identity since the physical environment is transformed through socio-cultural phenomena into landscapes that reflect how we define ourselves (Greider and Garkovich, 1994). When the meanings of these landscapes are challenged (e.g. through abrupt change), people's conceptions may also change through a process of negotiating new symbols and meanings (Greider and Garkovich, 1994). Both social and environmental factors can therefore strongly influence sense of place in a continuous feedback loop, meaning sense of place and identity are dynamic, evolving over time (Eisenhauer et al., 2000; Bricker and Kerstetter, 2002; Wynveen et al., 2010; Urquhart and Acott, 2014).

Different conceptual frameworks have sought to operationalise the relationship between ecosystem services, cultural values and human wellbeing, including the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Conceptual Framework (Díaz et al., 2015), and the framework developed by Fish et al. (2016) for the UK National Ecosystem Assessment follow-on (UK NEA, 2014; Church et al., 2014). Both frameworks have some key differences in the manner they conceptualise these relationships, but essentially depict feedback loops whereby nature and culture shape and enable each other.

The IPBES framework (a) represents the complex relationship between nature and human society, (b) explicitly includes multiple knowledge systems, and (c) highlights the central role that institutions, governance and decision-making play (Díaz et al., 2015). The initial 2015 IPBES framework was eventually superseded by an updated framework revolving around the concept of 'nature's contributions to people' (Díaz et al., 2018), though not without contestation: for critiques see (Braat, 2018; De Groot et al., 2018; Kenter, 2018; Peterson et al., 2018). However, it is interesting to note that the broader IPBES framework now conceptualises 'non-material contributions' (roughly corresponding to CES) largely following the UK NEA place-based framework described below (Church et al., 2014; Fish et al., 2016).

The NEA conceptual framework aims to increase understanding of CES and other benefits related to the environment and cultural practices that arise from interactions between humans and ecosystems. This framework was specifically designed to elaborate CES and represent the dynamic relationship between biophysical and cultural domains. Here, benefits are essentially experiences, identities and capacities derived from interactions between human activities/practices and ecosystems.

Studies of marine and coastal CES are limited and typically focus on recreation, cultural heritage/identity and aesthetic services, with fewer exploring sense of place (Garcia Rodrigues et al., 2017). When it comes to CES assessment, qualitative methods are commonly used (Garcia Rodrigues et al., 2017). Assessing the cultural values associated with CES favours the deployment of deliberative and non-monetary valuation approaches. This is because understanding these cultural values entails understanding how people's shared values, histories, places and practices are formed (and reflected) through their way of life (Kenter, 2016a; Kenter et al., 2016a). Different methods have been used in marine and coastal ecosystems including interviews (e.g. Urquhart and Acott, 2014; Willis, 2015), focus group discussions (e.g. Sousa et al., 2013), storytelling (e.g. Kenter et al., 2016b), archival analysis (e.g. Thiagarajah et al., 2015) and participatory mapping (e.g. Klain and Chan, 2012; Gould et al., 2015; Kenter, 2016c). However, despite their strengths there is still a lack of knowledge about more subjective and intangible CES classes, including inspirational experiences, cultural identity and sense of place (Garcia Rodrigues et al., 2017).

One of the most promising techniques for eliciting and conveying diverse stakeholder perspectives in a democratic, non-confrontational and cohesive way is the Community Voice Method[3] (Cumming and Norwood, 2012). This typically involves three-stages designed to: (1) elicit shared values and subjective experiences; (2) establish management options and criteria; and (3) establish value indicators for different environmental benefits and policy options through deliberative workshops (Cumming and Norwood, 2012; Ranger et al., 2016). However, despite its potential the Community Voice Method has rarely been deployed in coastal and marine settings (Richardson et al., 2015; Switzer, 2015; Ranger et al., 2016), or to elicit marine and coastal CES.

The aim of this paper is to highlight how the Community Voice Method can be used in conjunction with the two conceptual frameworks described above to interpret relationships between tangible and intangible marine and coastal CES and derived benefits. To achieve this, we used this novel method in two UK marine environments to: (1) identify linkages between CES from coastal/marine social-ecological systems with different worldviews in the context of values-led management; (2) critically reflect on whether this method could elicit, identify and conceptualise marine CES; and (3) present a new marine cultural ecosystem benefits codebook. This study focuses on Stage 1 of the Community Voice Method and has involved filming qualitative interviews with diverse stakeholders representing the full array of stakeholders' shared values and points of contention in the two sites. These were then distilled into a documentary film as a vehicle for data analysis, presentation, and contribution to Stages 2 and 3 of the process (Kenter et al., Forthcoming).

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[1] The value found in aesthetic response to nature is diverse and may result in manifold experiences such as sensuality, spirituality, love or endearment, patterns and regularity, with no one definitive 'payoff' (Godlovitch, 1998).

[2] Wellbeing is increasingly becoming a common goal of environmental management plans (e.g. Potts et al., 2014; Artelle et al., 2018) and has been enshrined in some laws such as the Well-being of Future Generations (Wales) Act 2015.

[3] For more information about the Community Voice Method refer to: www.communityvoicemethod.org.

Section 2 outlines the study sites and the main data collection and analysis methods. Section 3 presents the main results in terms of marine and coastal CES as elicited from the application of the Community Voice Method in the two studies. Section 4 distils the main findings of the study, including key methodological reflections to inform the deployment of the techniques in other contexts.

2. Methods

2.1. Study sites

The marine environments of the western coasts of the UK are generally less well studied, compared to other parts of the country. For this reason, our study focuses on two regions in the western coasts of the UK: the Southwest of England (SW) and the West Coast of Scotland (WCoS). Both these areas contain numerous coastal settlements with diverse and nationally important socio-ecological characteristics. For example, both sites support highly valuable fishing grounds and wildlife tourism activities, while the SW has experienced significant renewable energy development and the WCoS sustains internationally renowned seabird breeding colonies. Both also contain existing and proposed marine protected areas (MPAs), including the Defra Southwest (North Devon) Marine Pioneer (SW) and the Inner Hebrides and the Minches candidate Special Area of Conservation (SAC) (WCoS). These sites present various management challenges including changing regulatory frameworks for fisheries quotas, and potentially negative interactions between fisheries and sea-angling activities. The study of these socio-ecological characteristics can inform marine-related policies and practices elsewhere in the UK (Fig. 1; Table 1).
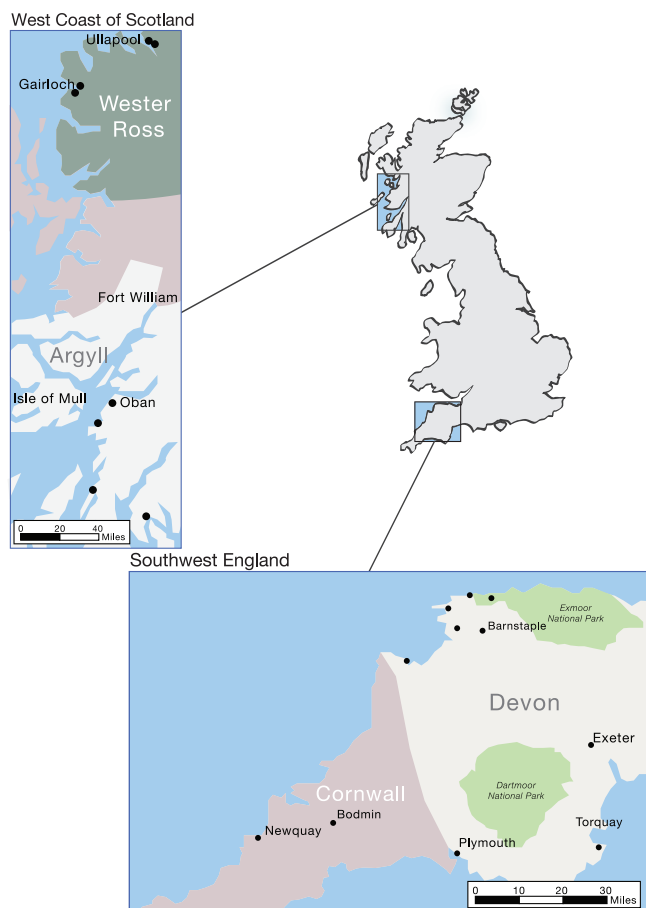

Fig. 1. Map of Great Britain highlighting the geographic location of the two study areas. Dots indicate sites where interviews took place.

2.2. Data collection and analysis

First, we designed a guide for semi-structured, qualitative interviews (Young et al., 2018). The guide was designed to allow interviewees to articulate the non-monetary values (and associated benefits) obtained from ecosystems in the study areas, as well as facilitate the emergence and detection of unanticipated topics and salient values (Gould et al., 2015). We focus on questions exploring important marine places, practices, experiences and identities (Questions: Q1a-4d); and important guiding principles for managing the marine environment (Question: Q5) (Table S1, Supplementary Electronic Material).

Q1a-4d were open-ended and sought to reveal the recreational, aesthetic, and spiritual benefits obtained through the interaction between people and nature, following Fish et al. (2016) and Ranger et al. (2016). In Q5, we presented interviewees with a list of 15 transcendental values (Kenter et al., 2015; Raymond and Kenter, 2016), or guiding principles, relating to five value clusters that can help predict pro-environmental attitudes and behaviour (Stern et al., 1998) presented to participants in random order. We requested interviewees discuss any principles that stood out in relation to the management of the marine environment. Interview material was tested and approved during two pilot interviews in WCoS with an inshore fisherman and a stakeholder from the tourism sector. As the quality of both pilot interviews was deemed high, they were both included in the final analysis (see below). We distributed this material to interviewees in advance to enable familiarisation with the content.

We purposively selected interviewees through an elaborate stakeholder analysis, which initially identified 289 individuals through past projects and snowballing. The research team collaborated on the respondent recruitment to balance and maximise stakeholder interests within (and across) the two case study regions. We incorporated voices from as many coastal communities as possible, including typically 'forgotten voices' of people who are not normally involved in conservation decision-making processes (i.e. two local residents).

Two of the authors conducted 40 one-hour stakeholder interviews that were filmed in June 2017 in the SW (GA; 20 interviews) and WCoS (SO; 20 interviews). Interviewees were engaged in, cared about or directly impacted by marine management processes in the two study sites, and were selected because they participate professionally and/or recreationally in marine/coastal activities. We asked each interviewee to choose an interview location that was contextual and meaningful to them to help them feel at ease, and to visually convey sense of place in the documentary. Interviews were filmed in diverse coastal settings including on boats, in harbours, estuaries, gardens/balconies, and offices or living rooms usually containing marine-related gear, photographs and other material linked to the local marine environment.

Interview footage was professionally transcribed, and textual transcriptions were imported into NVivo 11 (QSR International Pty) for coding and analysis. The two authors coded their own interviews using a new codebook they jointly developed by adopting elements from the two conceptual frameworks (Díaz et al., 2015; Fish et al., 2016) (Section 1). The two authors also created new thematic sub-codes from recurring themes emerging from the interviews which were not evident in the existing frameworks (Table S2, Supplementary Electronic Material). The codebook was used to sort concepts within the interview text according to one or more sub-codes. Text coded within each sub-code could then be quantified and cross-tabulated in NVivo to identify common themes. To mitigate individual researcher bias and increase consistency, inter-coder comparison analyses were conducted until an acceptable level of agreement was achieved (average of 0.704 across four interviews) (Landis and Koch, 1977). We then conducted two different and completely separate analyses using the themes identified through this coding; one for the film and one for the data presented in this paper.

The first analysis, focused on the film and aimed to broadly represent: (a) each interviewee at least once, (b) key benefits derived

Table 1

Summary of relevant socio-ecological characteristics and regulatory challenges in the two case study regions.

Socio-ecological characteristics	Southwest of England	West Coast of Scotland
Provisioning services	– Includes the three largest fishing ports in England and Wales. – Shellfish aquaculture is increasing in importance. – Largest European offshore mussel farm.	– One of the UK's most valuable fishing grounds. – Ideal geomorphology for finfish and shellfish aquaculture. – Seaweed harvesting is locally significant and of growing importance.
Tourism/leisure/recreation	– Most ports operate wildlife watching and sea angling trips, especially during the summer. – Renewable energy development, shipping, recreational diving and boating, and beach-related recreation (by residents, tourists).	– Popular for adventure tourism, sea angling and wildlife watching due to remoteness and lack of industrialisation. – Contain internationally renowned breeding colonies of seabirds, dense seasonal aggregations of migratory cetaceans and basking sharks (*Cetorhinus maximus*), and significant porpoise (*Phocoena phocoena*) and grey seal (*Halichoerus grypus*) populations.
Regulatory	– Contains the South West Marine Plan Area, with numerous conservation zones, including the Defra Southwest Marine Pioneer (North Devon). – Fisheries are restricted in the conservation zones. Areas in Lyme Bay closed to scallop dredging and bottom trawling since 2008 to protect reef habitats of particularly high species richness (identified as a marine biodiversity "hot spot"). – The proposed SAC at the Bristol Channel Approaches is a seasonally important area for porpoises (listed on Annex II of the Habitats Directive).	– Includes numerous Special Areas of Conservation and Marine Protected Areas, primarily to protect sensitive sessile species and habitats, including minke whale (*Balaenoptera acutorostrata*), Risso's dolphin (*Grampus griseus*) and basking shark.
Management challenges	– Total allowable catch (TAC) and national quotas for major internationally managed fish stocks are regulated by the EU. However, such regulations are in doubt given the UK's decision to leave the EU. – Inshore extractive sea-angling can compete with commercial fisheries. – Fisheries can degrade the quality of recreational sea angling opportunities.	– Competition between commercial fisheries and sea-angling for whitefish species. – Suppression of cod stock (*Gadus* sp) recovery by seal predation (Cook et al., 2015). – Entanglement of seals and large cetaceans in creel lines. – Depletion of food stocks for cetaceans by fisheries. – Seabird and cetacean by-catch in trawl gear. – Potential conflicts between fish farms and use of seal-scarers, with wildlife tourism. – National management of stocks (mainly shellfish) harvested entirely within the 12 mile limit, raising disputes over access to traditional fishing grounds following the establishment of MPAs. – Strict control of finfish aquaculture production (e.g. nutrient emissions, release of drugs into the environment, disease transmission risk). However, there are targets to increase production by 2020 (by 17%).

from marine ecosystem services, and (c) a wide range of perspectives including shared values and competing interests. To identify these benefits, shared values and competing interests, we selected appropriate segments of footage based on the most frequently occurring themes in the interviews, and those which offered contrasting perspectives. We transcribed these segments to create a film script.

The second analysis focused on the data from Q1a to Q5 and aimed to identify and conceptualise the marine and coastal CES presented in this study. This involved developing a value framework integrating aspects of the two conceptual frameworks relating to a good quality of life[4] (Díaz et al., 2015) and cultural ecosystem benefits (Fish et al., 2016) (Fig. 2) (Section 1). We created a high-level code called 'fulfilled human life' (henceforth 'FHL'). This encompasses the concepts of a good quality of life and cultural ecosystem benefits to develop a more comprehensive understanding of shared wellbeing aspirations in the context of marine and coastal CES, including relevant thematic codes and sub-codes. We used this new integrated framework to characterise the key marine CES, and how they are reflected in the cultural values, places, practices, identities, experiences and capabilities derived by stakeholders in the two case study regions. The data gathered was also used for further analysis specifically focusing on intrinsic values, published separately by O'Connor and Kenter (2019).

We conducted the qualitative analysis of Q1a to Q4d with NVivo software following three steps: (1) identifying cultural benefits by cross-

tabulating data relating to the cultural practices identified by Fish et al. (2016) (i.e. playing and exercising, creating and expressing, producing and caring, gathering and consuming) against the FHL codes in NVivo; (2) exploring how cultural benefits may be affected by anthropogenic and natural drivers, by cross-tabulating the three most commonly occurring benefits identified in Step 1 against data captured within the anthropogenic and nature codes identified by Díaz et al. (2015) (i.e. 'anthropogenic assets', 'direct drivers', 'institutions, governance and other indirect drivers', 'nature', and 'nature's benefits to people[5]'); (3) determining conceptual relationships among cultural benefits and among anthropogenic and natural drivers by using the 'coding stripes: nodes most coding' option in NVivo to reveal in which theme(s) a benefit or driver had most often been coded. Due to the complex and overlapping nature of the themes (Fish et al., 2016), some concepts are multi-dimensional and were therefore coded in more than one theme. For example, the following text '*I don't want to live anywhere else. It's both very relaxed and very lively, and I think it's an incredible place to bring up children*' was coded under the 'sense of place' and 'belonging' sub-codes.

To analyse data for Q5, we coded interviewees' comments regarding each principle they discussed and ranked the principles in order of frequency. Then, we cross-tabulated comments for each principle against the FHL codes to quantify common ideas regarding how these

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[4] Díaz et al. (2015: 13) define a good quality of life as 'the achievement of a fulfilled human life, the criteria for which may vary greatly across different societies and groups within societies.'

[5] The concept of 'nature's benefits to people' derives from the IPBES framework and is separate from 'cultural benefits'. In this paper it refers to results where interviewees provide explicit examples of how nature may benefit people (see Table S3, Supplementary Electronic Material).
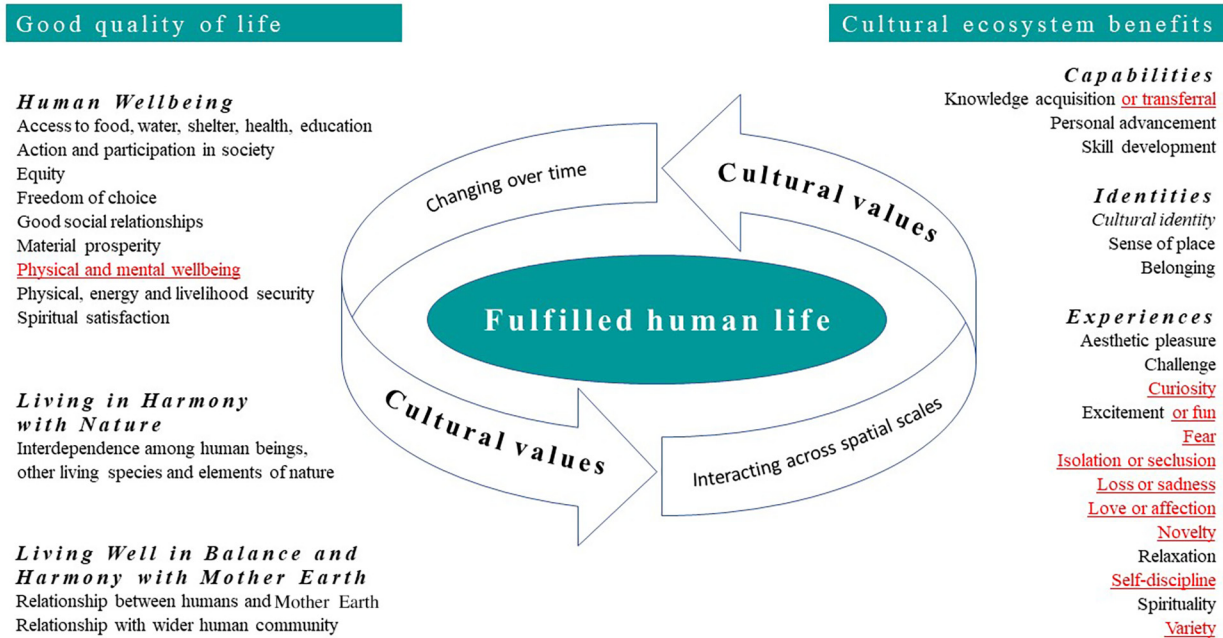
Fig. 2. Conceptual diagram of a fulfilled human life in the marine environment. *Note: This diagram builds on* Díaz et al. (2015) and Fish et al. (2016). The diagram demonstrates that the relationship between 'good quality of life' (Díaz et al., 2015), 'cultural ecosystem benefits' (Fish et al., 2016) (black text), and the results of this study (red, underlined text) are dynamic, linked and contribute to a fulfilled human life in the marine context. The curved arrows in the central part of the figure can go both clockwise and anti-clockwise, emphasising that cultural values both derive from and enable this multi-dimensional, bi-directional relationship between nature and culture. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

principles might relate to human wellbeing.

The film script was sent to all interviewees for their approval prior to beginning video editing. Three interviewees opted not to be included due to personal reasons or concerns that their message(s) had not come across as expected. The final film[6] included 37 interviews (see Table S3, Supplementary Electronic Material): six women and 33 men (one interview featured a married couple while another featured two men), aged 20–70+ (four were below 40 years old). Several interviewees were engaged in multiple marine-related professions or activities and are therefore categorised based on their primary or preferred activity, as opposed to solely on their occupation. This resulted in 13 regulatory (R) representatives, 12 provisioning (fisheries) (P); 10 tourism/leisure/recreation (TLR), and two local residents (LR) who participated in various marine/coastal activities. Two interviewees were related (father and son) and several knew (of) each other through living in small, tightly knit, coastal communities.

The key themes reported in Section 3 are based on the number of interviewees who directly mentioned or inferred a theme in respect to understanding CES. In accordance with ethical clearances obtained and prior consent given, results are supported by interviewee quotations which are anonymized using pseudonyms and generic profession (e.g. 'R#1 – environmental management' denotes a regulatory interviewee).

3. Results

3.1. Places and practices

Interviewees most commonly visited islands, the coast, and estuaries, followed by cliffs, sand dunes, beaches, offshore areas, harbours, lochs and shores. Islands, coasts and estuaries were commonly referred to in terms of identities (e.g. sense of place), experiences (e.g. curiosity, variety, aesthetic pleasure) and nature (e.g. ecosystems). As most

interviewees lived on or near the coast, they conducted multiple types of marine-related cultural practices in these places (Table 2), mixing work and play around marine life and associated infrastructure. As an inshore fisher explained:

> '*In the winter, I fish for herrings out here in the bay, but I'm also a boatman, so I take passengers out on small boat trips… For pleasure… I visit harbours more than I visit anywhere else, mainly to look at boats*' (P#5 – inshore fisher).

The existence of (and/or ability to interact with) highly diverse marine wildlife was repeatedly found to enhance the cultural practices people carried out. For example, according to a tourism/leisure/recreation interviewee: '*I take a lot of underwater photography, so the sites I like to dive are those where I'm gonna get a good variety of species*' (TLR#3 – dive club manager). Indeed, interviewees named over 60 species of marine wildlife, mainly seabirds, fish, mammals, crustaceans, jellyfish, corals and nudibranchs. They then linked these species to different cultural practices and places. For example, fish, mammals and crustaceans were mostly discussed in terms of their use to humans via provisioning services or tourism, whereas seabirds, jellyfish, corals and nudibranchs were mostly discussed regarding their intrinsic value.

3.2. Cultural benefits

Regarding the benefits derived from cultural practices in relation to a fulfilled human life, interviewees most frequently mentioned topics related to '*sense of place*', '*cultural identity*'[7] and '*aesthetic pleasure*'. Although the order of frequency in which benefits were expressed differed slightly by stakeholder type, this difference was insignificant. '*Sense of place*' and '*aesthetic pleasure*' were often expressed simultaneously

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[6] The final film can be found here: http://sharedvaluesresearch.org/merp-marinevalues/.

[7] Different cultures value nature in different ways and have different connections with their natural environments (Pilgrim and Pretty, 2010). It can also be argued that they have different cultural identities, which reflect the shared values of individuals within a given cultural group.

Table 2

Most common cultural practices among interviewees.

Type of practice	Number of interviewees	Examples
Producing and caring	37	Commercial fishing, research and monitoring, general science, farming, forestry, manufacturing, marine management
Playing and exercising	34	Tourism, water sports, recreational fishing, observing nature
Creating and expressing	9	Arts and crafts, photography, writing, gardening
Gathering and consuming	8	Locally provenanced food

suggesting synergies between these CES, therefore they are discussed together in Section 3.2.1. Specific themes relating to 'cultural identity' are strongly linked to 'sense of place' but discussed separately (Section 3.2.2).

3.2.1. Sense of place and aesthetic pleasure

When discussing the effects of anthropogenic and natural drivers of ecosystem change on cultural benefits, interviewees most often referred to 'effects of nature on quality of life', 'biodiversity', and 'intrinsic value'. These three themes were often expressed simultaneously, so they are described jointly below. 'Natural climate and weather patterns' were also related to 'sense of place' and 'aesthetic pleasure', though less so for the latter. Hence, this theme is explored separately.

Interviewees frequently identified specific ecosystem attributes, such as species or abiotic features, as fundamentally important to their enjoyment of life. Many drew a direct link between special places, preferred practices and improved wellbeing, commonly through a sense of wonder about the wildlife they encounter. Knowledge about the existence of wildlife in certain places often directly influenced behaviour and increased quality of life. For example, one wildlife tourism operator described how for recreation they regularly visit a remote site which they love because it is also frequented by seals. Similarly, a fishing charter operator explained that daily encounters with dolphins near his home made him feel lucky to live in what he perceived to be a beautiful, and unique place where he could enjoy experiences that other people usually pay for.

For some interviewees, special wildlife encounters were described as good for business and an important means of facilitating enjoyment of the natural world for other people. This raises awareness of local places and can encourage others to undertake nature-based activities. For example, a wildlife tourism operator described how participating on one of their guided shark trips prompted a passenger to engage in nature-based 'creating and expressing' by donating the proceeds from his artworks to a shark charity. Similarly, this fishing charter operator (P#1) describes how an individual wild dolphin gripped the public's imagination:

> 'A couple of years ago we had a dolphin called Dave… He would spend two weeks in Ilfracombe… and would just play for attention: the more you'd clap, the more he'd jump… He's got his own Facebook page and everything. The trips would be "spend an hour with Dave the dolphin".'

The landscape and varied geographic features (e.g. the transition from moors and valleys through estuaries to the coast), were also central to sense of place and aesthetic pleasure for some interviewees. For example, some expressed an emotional attachment to places because of their 'sparseness', 'timelessness' or 'romantic' atmosphere. Others preferred places for the social interactions they facilitate. As one local resident recalled:

> '…so that stretch of coast there is where, as a family, we explore, go for picnics, go snorkelling, take our canoe out, just really good days out. We take families, sometimes we have school sports days as well out on the beaches, which are fantastic, and the grown-ups get carried away and build huge sandcastles and stuff' (LR#2- local resident).

Interviewees' comments regarding 'natural climate and weather patterns' were mostly positive. Climatic patterns were particularly evident in descriptions of 'wild' winters and 'beautiful' summers. Comments often referred to the dynamic relationship between coastal features and climatic conditions, with several interviewees describing the wellbeing effects of winds or gales and rain associated with exposed cliffs and sheltered bays. According to an environmental manager: 'up on the high cliffs there… if it's a stormy day when you've got really big waves and high winds, lots of energy there, that's a great place to get your lungs full of wet, salty air' (R#1 – environmental manager).

Some interviewees linked the geographic diversity along the coastline to diversity in ecosystems, habitats or species, and weather or climate. For example, a scientist (R#4) described how areas sheltered from gales along a peninsula host a 'very rich marine habitat and some very interesting species'. Comments sometimes related to opportunities to encounter or learn about different ecosystems at various times of the year, e.g.: 'it really is an understanding of how that particular part of the coast fits in and has a sense of place' (R#6 – conservation manager). Some interviewees made this link for certain species with seasonal needs such as migratory seabirds.

People's activities were also directly linked to weather or climate. Summers were linked to heightened coastal activity and an influx of tourists holidaying on the coast, or locals organising public events (e.g. shore safaris), diving, visiting the beach, or travelling to other parts of the coast or nearby islands. Winters were associated with lower coastal activity, with certain activities in some places ceasing or being curtailed by poor or unsafe weather (e.g. porpoise monitoring, diving or fishing) or migration of target species. Therefore, interviewees sometimes travelled to other locations to pursue such activities.

3.2.2. Cultural identity

Regarding the effects of anthropogenic and natural drivers of ecosystem change on 'cultural identity', the most common themes related to 'biocultural diversity', 'effects of nature on quality of life' and 'built infrastructure'. When discussing the marine environment, comments often revealed a complex relationship between the natural environment and the cultural significance people place on it. For example, a marine stakeholder coordinator interpreted this relationship by perceiving the physical natural environment as being the foundation from which the economy emerges, with sense of place and the cultural landscape sitting above both.

Interviewees typically talked about cultural identity at the human scale. They tended to relate mostly to the area in which they lived and worked or to defined geographic boundaries. Cultural identity was often linked to geographic variability along the coastline. For example, North Devon (SW) was described by an environmental manager as having its own cultural and biological identity, distinct from the rest of Devon. An inshore fisherman (P#6) described how he loves living in Oban (WCoS) because it has the sea, mountains and a Celtic legacy 'of community and kindness to other people'.

A common theme was the idea of belonging to a coastal culture through communal worldviews regarding activities and places. For example, some interviewees often related cultural identity to historical traditions at different temporal scales. These ranged from inter-generational timescales: 'My family have always been fishermen' to different eras: 'there's some really ancient hut circles there…and very good fishing just off them, so people of ancient times knew exactly where the good fish were' (LR#2 – local resident).
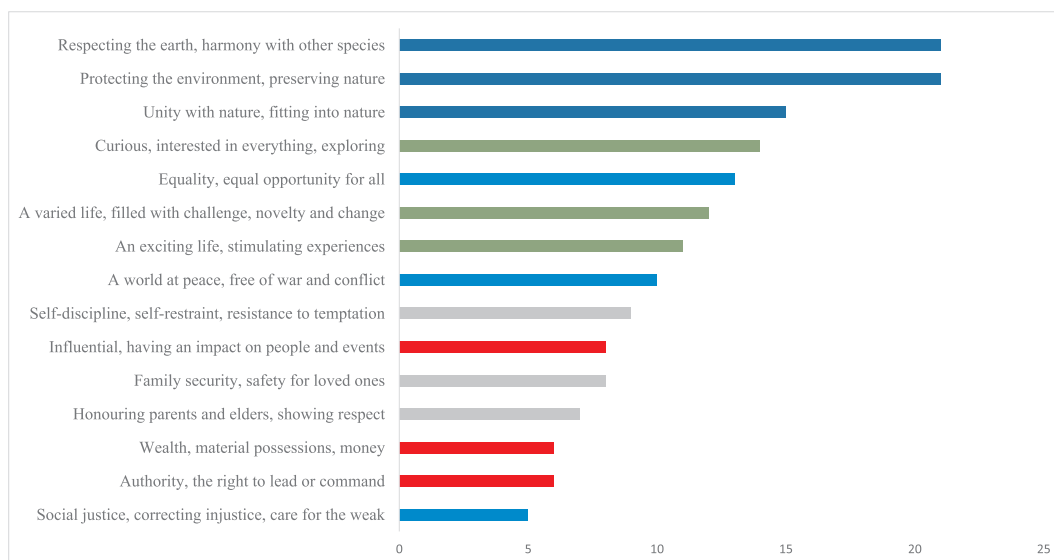
Fig. 3. Interviewees' preferences regarding guiding principles for managing the marine environment. *Note:* Number of interviewees for whom each guiding principle stood out in terms of managing the marine environment. The five value clusters are shaded as follows: dark blue bars = 'biospheric'; green = 'openness to change'; light blue = 'altruistic'; grey = 'conservation/traditional)'; red = 'self-enhancement'. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

A sense of nostalgia was evident in some places that have traditionally been associated with certain practices. This nostalgia was sometimes associated with a longing for those traditions to continue in those places. For example, a marine stakeholder coordinator told how some fishermen in the southwest still utilised 1000 year-old salmon fishing practices, despite the lack of any economic imperative from engaging in this practice considering the significant decline in the salmon population. Rather, they felt they needed to honour their fishing ancestors, re-enact historical traditions and assert ownership and authority over the river where they have lived and fished for generations.

One interviewee highlighted how the WCoS has '…*everything from sheltered sea lochs, estuaries to open sea*' that currently provide a large variety of seabed habitats from which various resources like flame shells, kelp, seaweed and diverse fish species can be harvested. He explained how communities have had to adapt their cultural practices to maintain fishing traditions over time according to species availability, including whitefish (*Coregonidae* sp.), herring (*Clupeidae* sp.), finfish (e.g. *Gadus* sp. such as cod, haddock), and most recently prawns and crabs. However, not all communities can readily adapt to changes as alluded to by an inshore fisher when reflecting on the fragile relationship between biocultural diversity and livelihood diversity:

'*Here, on the West Coast, it's a very hard place to make a living. Most of the jobs here are seasonal, poorly paid, and the traditional industries: crafting, fishing, forestry, they've either been mechanised or they've fallen out of favour. There's very little crafting activity here now. And fishing, from here in Badachro… at one time there was over 200 people employed here in the fishing industry: that was between fishermen, fish curers, coopers… blacksmiths, shops, chandleries, everything…*' (P#11 – inshore fisher).

On a similar note, another inshore fisherman commented on the lack of knowledge about fish species among the general public, citing how many of the people he encounters do not know what a cod looks like. He also commented that he would not want to put the marine environment in '*the pure tourism category*' because people like to see a working industry. However, it was suggested that tourism could facilitate the continuation of diverse cultural practices and potentially sustain biocultural diversity through public education, e.g. by enabling tourists to experience (and learn about) a working fishing industry. Indeed, tourism was frequently mentioned as a potential conduit for maintaining cultural identity, partly because tourist destinations require a good level of marine resource management to '*sell themselves*' (e.g. clean, healthy beaches and oceans). Further to providing livelihoods to those involved in nature-based tourism and associated industries, coastal tourism was described as important for national and international visitors due to the unique geography and cultures of the study areas.

Regarding built infrastructure, coastal settlements were described as '*hugely important*' hubs for residents and visitors. Infrastructure such as harbours, ports, marinas and boatyards were often mentioned when describing thriving cultural practices and identities, especially in relation to provisioning activities. According to an environmental manager:

'*Well, people are in our communities and the heritage and culture behind those communities are an element of why it's so attractive and exciting a place to live and work. I mentioned harbours and the heritage behind our fishing communities, I really enjoy the link between the place and food, for example so fisheries are important for leisure activities but also looking at the whole food chain to enjoying lunch by the beach*' (R#2 – environmental manager).

Coastal settlements were also considered to be important for multiple industries such as tourism, manufacturing, defence, the renewable energy sector and various other small and medium-sized enterprises that depend directly or indirectly on the marine environment. An illustrative example is the small town of Ullapool that was originally established to support the herring industry. However, an aquaculture manager explained how after investment in port infrastructure Ullapool became busier than other ports because the ferry route started attracting more visitors than before. This led to Ullapool's emergence as a significant brown crab (*Cancer pagurus*) landing port.

3.3. Guiding principles for managing the marine environment

Overall, interviewees most often discussed other-regarding guiding principles from the 'biospheric' and 'altruistic' value clusters (jointly known as 'self-transcendence' values), and the 'openness to change' cluster (Fig. 3). The two most frequently discussed principles were 'respecting the earth, harmony with other species' and 'protecting the environment, preserving nature'. Common ideas mentioned by several interviewees included: (a) preference for sustainable resource

management; (b) respect for species upon which people depend for their livelihoods; (c) recognition of the intrinsic value of non-human species; and (d) acknowledgement that humans are part of nature (see also O'Connor and Kenter, 2019, for more detailed discussion). As one regulatory interviewee explained: 'Real sustainability is not just the nature, it's the community, the people, it's the whole ecosystem' (R#11 - regulatory).

A smaller number of interviewees also related to 'conservation/ traditional' and 'self-enhancement' values. The most important principles were 'self-discipline, self-restraint, resistance to temptation', 'influential, having an impact on people and events' and 'family security, safety for loved ones'. Common ideas mentioned by one or two interviewees included: abiding by social norms, positively influencing peers, ensuring personal and job security; and maintaining good social relationships.

4. Discussion

4.1. Values-led management

Our study contributes to the current literature on marine and coastal CES and to the place-based literature by describing how contributions from marine environments can support fulfilled human lives. We sought and identified many shared values among different marine stakeholders about the interactions between places and practices, and between sense of place, aesthetic pleasure and cultural identity (see Section 3.2). Such links between sense of place, aesthetic pleasure and identity concur with existing place-based literature (e.g. Greider and Garkovich, 1994).

Collectively, sense of place, aesthetic pleasure and cultural identity were positively linked to human wellbeing especially through wildlife encounters. This supports the Ocean Health Index (OHI) assessment of the ocean's role in the cultural, spiritual and aesthetic life, which directly links the effective and comprehensive protection of coastal areas and species, with a sense of place and biodiversity (Halpern et al., 2012). Furthermore, our study identifies synergies and trade-offs between sense of place, human wellbeing, biodiversity and intrinsic value, as well as with abiotic factors (e.g. geographic features, climate and weather patterns) (Section 3.2.1). Synergies between cultural identity, biocultural diversity and human wellbeing were also identified (Section 3.2.2).

Based on our interviews, marine stakeholders belong to a coastal culture where people's identities and ways of life are fused with the sea including its geography, climate and wildlife. Wynveen et al. (2013) found that those living close to the marine environment held a deep place attachment. It is likely that both the deep cultural attachments and the importance that interviewees place on the marine environment depend on an intimate socio-ecological bond between culture and nature, which strengthens with experience. To illustrate, cultural identity was strongly linked to time and place, and depended upon factors relating to biocultural diversity, effects of nature on quality of life and built heritage (e.g. harbours). Such an example was the continuation of 1000-year-old salmon fishing practices in the southwest, which is similar to reciprocal relationships described elsewhere between people and place, sense of security, traditional values, and cultural subsistence (Urquhart and Acott, 2014; Pascua et al., 2017). For example, in Hawai'i, place-based or indigenous perspectives of CES are linked to knowledge, spiritual landscapes, social interactions and physical and mental wellbeing (Pascua et al., 2017).

Sometimes activities overlap between different places, indicating a cognitive interrelatedness (e.g. memories, attitudes, values, conceptions of behaviour) between different settings which serve to satisfy biological, psychological, social and cultural needs (Proshansky et al., 1983). In many cases, professional practices have inspired the recreational practices of interviewees (or vice versa), and increased their quality of life, indicating that the sea (and its environs) promote a way of life, which can fulfil many human needs. Similarly, interviewees gave

geographically specific meanings to their activities (e.g. '*For pleasure I visit harbours*'). They also valued places for both social and environmental reasons emphasising the multidimensional nature of their place attachment (Eisenhauer et al., 2000; Bricker and Kerstetter, 2002; Wynveen et al., 2010). It is worth noting that interviewees have likely assigned multiple meanings to places that may be shared across social groups (Williams and Patterson, 1995; Stedman, 2003) suggesting that multiple metaphors may be salient to understanding the CES benefits they derived (Raymond et al., 2013).

Reflecting the cognitive component of sense of place, biocultural diversity was important to interviewees. We refer specifically to the cumulative knowledge that interviewees expressed through specialised vocabulary to describe diverse marine wildlife (e.g. 'whitefish'), habitats (e.g. 'maerl beds'), traditions (e.g. 'sein net fishing') and livelihoods (e.g. 'chandleries'). There was a feedback loop in this relationship, whereby encounters with wildlife enhanced enjoyment of places and/or relevant practices, in turn influencing people to visit these specific places and/or conduct these specific practices to increase encounters with wildlife and reinforcing their knowledge about them. As such, these repeated encounters likely increased the significance of place meanings to individuals, making them central to forging strong place- and practice-based attachments (Wynveen et al., 2010). This is particularly important, as sense of place plays a critically important role in influencing the success and efficacy of management interventions (Eisenhauer et al., 2000; Bricker and Kerstetter, 2002; Wynveen et al., 2010). The importance of place attachment among marine users as discussed in this study supports this notion of the UNESCO-IOP that, among other things, effective marine spatial planning should be ecosystem-based and place- or area-based, and that stakeholders should be actively involved (Ehler and Douvere, 2009).

Strong place-based relationships are especially complex among residents who depend on local places for both their livelihoods and recreation (Davenport and Anderson, 2005). Such relationships can foster social and political involvement in the preservation of important physical and social landscape features (Mesch and Manor, 1998). Although our study did not explore the negative interactions between local people and the marine environment, conflict over the meanings people assign to places may be the source of conflict regarding their management (Stedman, 2003; Kyle et al., 2004). Possible examples in the study areas could be conflicts between fish farms and the use of seal-scarers with wildlife tourism, or the detrimental impacts of wildlife recreation on important seabird colonies (Table 1). Better understanding of such possible negative interactions is an important area for future research. Problems relating to marine CPRs extend beyond fisheries to include other oceanic services and assets, such as natural products derived from the ocean, habitat health, and species richness (Rickels et al., 2016; Jobstvogt et al., 2014). To illustrate, marine activities significantly influence the physical landscape and development of coastal settlements (Urquhart and Acott, 2014).

Given the importance of wildlife and biodiversity, aesthetic pleasure and built infrastructure to human wellbeing in the study areas (Sections 3.1, 3.2.1 and 3.2.2 respectively), conflicting values and interests among marine stakeholders are likely to revolve around marine development. References to built infrastructure reflect the need for appropriate investment in coastal communities (e.g. ports, harbours) to facilitate cultural practices, prevent coastal population decline and avoid limiting access to coastal areas, which can in turn diminish sense of place and association with cultural heritage (Thiagarajah et al., 2015; Chakraborty and Gasparatos, 2019). However, coastal and marine development interventions must consider the wellbeing benefits that local communities derive through their interactions with charismatic marine wildlife that have varying ecological requirements (e.g. seabirds, cetaceans), and from their aesthetic appreciation of the marine environment. This is important since marine and coastal CES (e.g. scenery) are important for the European public, with such public perceptions being important in supporting marine planning, including

interventions to reduce plastic pollution (Potts et al., 2016; Hartley et al., 2018).

It is worth mentioning that interviewees' relationships with the marine environment were bi-directional: that is, interviewees received benefits from the marine environment and their practices within that environment were intended to be sustainable (Section 3.2.1). This reflects the debate about the duties that humans have towards nature, and their role in forming and shaping the ecosystems of which they are a part (Maffi, 2007; Comberti et al., 2015; Cooper et al., 2016; Kenter, 2018; O'Connor and Kenter, 2019). Other-regarding, self-transcendence values are clearly linked to environmental behaviour (Stern et al., 1998; Raymond and Kenter, 2016). The salience of guiding principles relating to respecting the earth and protecting the environment among interviewees underscores their desire for sustainable marine management. Conservation, traditional and self-enhancement values were important to some interviewees, as highlighted by their interest in principles relating to self-discipline and restraint, influence over people and events, and family security (Section 3.3). This reveals the breadth of values captured by the Community Voice Method, but also emphasises that diverse values do exist and ought to inform decision-making processes. Such processes need to facilitate group deliberations about value-trade-offs and encourage broad stakeholder buy-in (Kenter et al., 2016a; Orchard-Webb et al., 2016).

Concepts such as sense of place, aesthetic pleasure and cultural identity can inform future management decisions and guide policy-making. Some of the relevant applications relate to MPAs, tourism, leisure and recreation, bird and marine mammal conservation, and marine renewables, as well as regional development and tangible/intangible cultural heritage policy (van Putten et al., 2018). Many indigenous and local communities are already developing management plans that explicitly state shared values, as a means of intentionally guiding environmental management and providing the foundation for the resurgence of time-honoured and place-based management practices (Artelle et al., 2018). For example, the Canadian Haida worldview is based on values such as respect, balance, and reciprocity that promotes a return to local or place-based management (Artelle et al., 2018). Within marine planning, this has the potential to rebuild connections to place, and strengthen local management through approaches that are conservation-oriented, community-based and that attach direct values to coastal quality (Zagonari, 2008). Such plans often appear to be based on similar values to those expressed by the interviewees in our study sites.

4.2. Methodological reflections for non-monetary valuations

An important element of this project was the use of a novel research method (the Community Voice Method) and the integration of two conceptual frameworks to interpret relationships between tangible and intangible marine and coastal CES and derived benefits.

The Community Voice Method has two advantages over traditional public participation techniques because it attempts to address known issues of representation within deliberative forums and accommodate diverse modes of expression beyond rational argument (Cumming and Norwood, 2012). By interviewing participants in the familiar environmental context of their own livelihoods, the Community Voice Method can also foster a positive power dynamic between the participants and the researcher. This relates to the aim of the Community Voice Method to dissipate problems in environmental management arising from the gap between 'expert' and 'lay' knowledge, and different conceptions of human-environment relationships, particularly when the type of knowledge that is of interest (as here) is personal and local (Raymond et al., 2010).

Overall, this method was successful in eliciting tangible benefits relating to marine CES, which emerged verbally through narrative discourses (Section 4.1). Several interviewees said they found the research process empowering and helped them learn more about their

own values by actively reflecting on their relationship with the sea. This supports previous theoretical and empirical research reporting that even for those experienced with ecosystems and their services, processes of value expression and formation are tightly coupled (Kenter et al., 2016a).

Filming added a compelling audio-visual context to the study results. Holding interviews in interviewees' preferred settings may have somewhat addressed known issues around expressing intangible values associated with landscape features (e.g. sense of place) (Klain and Chan, 2012). The intimacy with which individual messages were conveyed at an affective and cognitive level is powerful. Communicating in this 'dialectic' way (i.e. representing contrasting opinions to understand the truth) can help marine users better understand their shared values and competing interests. This can positively influence the likelihood of stakeholder perspectives being included in decision-making processes (Cumming and Norwood, 2012).

However, implementing this method was challenging and resource-intensive in terms of time and capital. We relied on a professional media team to conduct filming and editing to create a high-quality documentary. Stakeholder willingness to be filmed was critical, as the lack of anonymity, camera-shyness and other factors likely influenced responses beyond availability and perceived lack of expertise. Despite women and younger people having a professional role in the marine context (e.g. Coates and Stacey, 2017), they are under-represented in key sectors including fisheries and angling. It was difficult to recruit such interviewees from these groups due to the reasons stated above. Hence our sample was strongly biased towards older men (Section 2.2). Additionally, we grappled with the issue of how to catch truly representative community voices. We used snowball sampling once we exhausted other sampling methods. Even though it may have been beneficial for recruitment after gaining the trust of certain participants, it could not address these biases. Thus, future research should focus on ways to more effectively engage people who may hold different perspectives, including younger people and women.

As mentioned in Section 2.1, we combined two conceptual frameworks for describing marine CES into a single coding framework to conceptualise the cultural benefits of marine ecosystems in the study sites. This analytical approach was successful up to a point, as most (but not all) themes emerging from our data could be coded within the elements and categories exemplified in these frameworks.

The marine environment in our study sites seemingly offered a wider range of emotional experiences than previously captured (e.g. by Fish et al. (2016)), especially relating to biodiversity and the climate and weather. Furthermore, perceptions about different species were highly significant in our research, as biodiversity is typically associated with high non-monetary values (e.g. Klain and Chan, 2012). Even though the importance of biodiversity for CES is recognised by both conceptual frameworks, it is not described sufficiently in these frameworks to allow us to fully capture the range of CES evoked by the interviewees (e.g. as benefits or direct drivers of change), and it is not just the diversity of life but also specific forms of life that matter to people. Thus, explicitly including species in the codebook and frameworks is useful because of the importance of species in providing ecosystem services to the general public and to the scientific community in terms of assessing ecosystem health.

To overcome this constraint, we created several new sub-codes for our codebook based on themes emerging from our data. These were primarily inserted into the code 'experiences' (e.g. 'love or affection') and into 'anthropogenic direct drivers' (e.g. 'degradation of habitats *or species*') (Fig. 2). With further testing, our new codebook could provide a useful tool for future comparative studies in other contexts. Furthermore, while not considered in detail here but discussed elaborately by O'Connor and Kenter (2019), our codebook gives explicit attention to intrinsic values of nature, so that these can be considered on a par with benefits to people in ecosystem management.

5. Conclusions

Helping marine users understand each other's perspectives is vital to developing more trusting and effective relationships among stakeholders, and to guiding marine management. This is important since marine users bear the cost of (but often have a limited say in) marine management decision-making processes.

Previous studies exploring processes of value expression and formation focused on group deliberative contexts. This study suggests that the type of dialectic deliberation that occurs through Community Voice interviews may engage such value formation processes. Future research may compare these processes between individual, dialectic and group-based deliberative processes. Future Community Voice studies could also contribute to conflict management by sharing and articulating different stakeholder values.

We propose that values-led management in marine contexts could increase the efficacy of planning strategies by incorporating the cultural values of local communities who ultimately have the motivation and means to protect the marine environment. Moreover, the close coupling in perception, identities, and sense of place of both natural and human-built features of the environment suggest the importance of more integration between management of natural and tangible (e.g. built by humans) and intangible (e.g. knowledge and practices) cultural heritage. This can happen through mechanisms such as marine planning, regional development planning and maritime, fisheries and cultural heritage sectoral policies.

Importantly, many of these benefits rely on natural as well as tangible and intangible anthropogenic coastal features and practices. Factors that contribute to human quality of life such as place identity are not solely based on contributions from nature to people but also on the ways that people provide services to ecosystems through, for example, conservation actions for example. Further conceptualisations of CES, or contributions from nature to culture, including by IPBES, need to closely link material and non-material dimensions and recognise the relationship between nature and people as a two-way affair. They should also respect multiple approaches to interpreting the human–environment dynamic according to different management objectives and indicators of success.

Acknowledgments

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ecoser.2019.100992.

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