A Sense of Place in Cultural Ecosystem Services: The Case of Cornish Fishing Communities

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Abstract

Fishing communities in Europe are facing significant challenges due to policy measures aimed at reducing fishing effort in order to cope with the 'crisis' in key stocks. While it is imperative to ensure sustainability of the resource, such policies may overlook the contribution of fisheries to the social and cultural wellbeing of coastal communities. This paper explores the contribution that sense of place can make to understanding the relationship between fishing and cultural ecosystem services, drawing on case studies from Cornwall, south-west England. Through semi-structured interviews with fishing community stakeholders we outline how fishing contributes to sense of place in terms of individual and community identities, as well as a particular place character associated with the physical presence of fishing. We suggest that a co-constructionist account of the relationship between sea and land can provide a starting point for understanding the cultural landscape that emerges as a result of fishing.

Introduction

Human demand for fish as a food is at an all time high, with fish accounting for 15.7% of the world population's intake of animal protein in 2007 and providing 1.5 billion people with almost 20% of their average intake of animal protein (FAO 2010). Of the 90 million tonnes of global capture fisheries, 80 million are from marine natural resources (FAO 2010). However, the Food and

Agriculture Organization (FAO) reported an increasing trend in the percentage of overexploited, depleted or recovering marine fish stocks in 2008, and a decreasing trend in underexploited or moderately exploited stocks (FAO 2010). This, alongside concerns over changes in key stocks attributed to overfishing, climate change (Perry and Ommer 2010; MCCIP 2012) and ocean acidification (Portner 2008; OARUG 2009) have led to what has been termed a "crisis" in fisheries (for example, Blades 1995; Clark 2006; McGoodwin 1990).

The response to these ecological problems has been to develop policies and management strategies to reduce fishing effort in order to allow stocks to recover (FAO 2010; EC 2009). Measures under the European Common Fisheries Policy (CFP) include fixing upper limits on the quantities of fish that can be caught per year (Total Allowable Catch TAC), allocated via national quota, alongside technical measures to reduce fishing effort, such as net mesh sizes, closed areas, closed seasons and decommissioning of vessels. However, there are concerns over the effectiveness of measures adopted under the CFP, which is now undergoing its third reform, and many fish stocks are still outside safe biological limits (EC 2001). A number of commentators have also suggested that such policies come at a substantial social cost (EC 2009; Symes and Phillipson 2009) and often overlook the wider contribution of fisheries to the social and cultural well-being of coastal communities (Urquhart et al. 2011). The loss of fishing as a way of life can lead to erosion of the social fabric of communities, with higher unemployment and changes in social structure, such as the outmigration of young people who are unwilling to enter fishing due to its insecurity (Urquhart et al. 2011). Yet policy rarely addresses the social and cultural impacts of fishing on coastal communities, with strategies focused, understandably, on ecological resilience. Where social objectives are included, these often centre on the measurable components of livelihoods and dependency (EC 2011).

The ecosystem approach to fisheries (EAF) has been accepted as a key instrument for improving fisheries management (De Young et al. 2008) and is related to the livelihoods approach that recognises the broader context of households, communities and the socio-economic environments in which fishing occurs (Allison and Ellis 2001). While the values that society holds for a fisheries ecosystem include capture fishing, habitats, life support functions and livelihoods, preserving the resource for future uses, intrinsic preservation and biodiversity, there are also non-material benefits or

cultural ecosystem services that people obtain from ecosystems. These include cultural diversity, spiritual and religious values, knowledge systems, educational values, inspiration, aesthetic values, social relations, identity, cultural heritage, recreation and ecotourism (MEA 2005) and are further defined by Chan et al. (2012) as "ecosystems' contributions to the non-material benefits (e.g., capabilities and experiences) that arise from human-ecosystem relationships" (p. 9). The ecosystem service approach is dominated by economic valuation techniques that attempt to put an economic value on the goods and services that ecosystems provide society. The rationale is that policy-makers and natural resource managers must often make difficult decisions involving trade-offs when allocating resources and market failures occur when markets do not fully reflect the social costs or benefits of an environmental good. However, it is difficult to put an economic value on all cultural services or benefits and this often results in those non-material cultural services remaining marginalized or becoming hidden as externalities (Chan et al. 2012). In the context of marine fishing, Chan et al. (2012) argue that "inspiration and identity benefits are commonly associated with fishing – a valued way of life and source of employment – but they are not fully reflected in monetary valuations of market goods associated with the provision of fish for harvest… valuation frameworks are impoverished if they purport to represent the value of the provision of fish for harvest without accounting for these crucial but often intangible benefits associated with the process of fishing" (p. 14). Capturing these intangible benefits is important if the full spectrum of ecosystem services for fisheries is to be integrated into management and policy decisions, even if it makes the decision-making process messier (Chan et al. 2012).

Therefore, in this paper, we start to address the problem of valuing the social and cultural benefits of fishing by exploring the role that marine fishing has for cultural ecosystem services. We approach this by exploring how marine fishing contributes to a particular sense of place in fishing places that is influenced by both contemporary and historic fishing activity, and how individual and community identities and attachments to fishing places are constructed. Through an exploration of the relationship between individual fishers' place identity, community identity and the physical environment in fishing communities in Cornwall we start to document the complexity and interrelated elements that make up cultural ecosystem services of fisheries. Although the activity of catching fish takes place at sea,

fishing and the marine resources exert a strong place-based influence on land through the shore-based activities of the fishing industry (such as unloading the catch, processing and selling fish) as well the presence of fishing boats and gear in the harbour. We argue that understanding these often intangible but crucial social and cultural benefits needs to include not just economic valuation, but more nuanced narratives and discourses that start to unpack how place attachments are formed and transformed and how individual and community identities influence people's views and actions towards management. Such approaches have the potential to help decision-makers design policies or management strategies that can help achieve socially, ecologically and economically equitable and sustainable outcomes.

The following section reviews the literature on sense of place and discusses its contribution to understanding fishing communities. Then follows an outline of the research context and the methods, before the results and discussion are presented. Finally, conclusions are drawn, outlining the contribution of this paper to the ongoing challenges of valuing cultural ecosystem services.

Sense of Place

While there are calls for the inclusion of sense of place in natural resource management (Williams and Stewart 1998), the lack of organisation in much sense of place literature has hindered its incorporation (Jorgensen and Stedman 2006) and, although recognised as an important benefit of ecosystems (MEA 2005), it is often overlooked. This is not least because understanding how people relate to places is a challenging task with place-based meanings conceptualised and examined across a range of disciplines including anthropology, environmental sociology, psychology and human geography (Davenport and Anderson 2005; Kyle and Chick 2007; Clay and Olson 2007). The term 'sense of place' (Shamai 1991) is a multidimensional construct often used to encompass the concepts of place identity, place attachment and place dependence, which are frequently understood as representing cognitive, affective and conative dimensions (Jorgensen and Stedman 2006).

Often a phenomenological approach is taken to exploring people-place relationships, with spaces becoming places through activity and lived experience (Davenport and Anderson 2005; Relph 1976; Steele 1981; Tuan 1974; Seamon 2000) and are expressed through a variety of social, cultural and semiotic processes (Low and Altman 1992). Thus, place attachment is concerned with the emotional

attachments people form with a locale and implies a need to intimately know a place in what Tuan terms 'topophilia', a love of place (Tuan 1974). This is often referred to as a sense of belonging or rootedness (Hidalgo and Hernandez 2001) or "the extent to which an individual values or identifies with a particular environmental setting" (Kyle et al. 2003, p. 250).

There is an extensive literature on the role of place in identity (overviews include Cresswell (2004), Holloway and Hubbard (2001) and Massey and Jess (1995)). People use places to construct and maintain their self-identity (Proshansky et al. 1983; Manzo 2003; Proshansky 1978) and, according to Scannell and Gifford (2010) "individuals may connect to a place in the sense that it comes to represent who they are" (pg. 3). From a natural resource management perspective it is meaningless to ascribe an economic valuation to transformative values such as cultural identity as these values will differ between individuals and by their nature are not static, but will change over time and space. To further add to the complexity in marine fishing, the act of catching fish takes place at sea, with identities and attachments representing an entanglement of human-ecosystem relationships (see, for example, St. Martin and Hall-Arber 2008).

Attachment to place may also be affected by both individual and collectively held meanings. Individually, people may form personal connections to a place based on their own memories, experiences and perceptions that they associate with particular places (Manzo 2005). Collective and community influences can also mediate these identities and attachments. These meanings may reflect kinship ties, genealogical attachment (Low 1992), emotional attachment, religious or spiritual attachment (Holloway and Hubbard 2001). According to Scannell and Gifford (2010) definitions that focus on social bonding or collective identity "suggest that social place attachment can sometimes center upon the place as an arena for social interactions, or as a symbol for one's social group" (pg. 5).

Therefore, sense of place can be conceptualised as the meanings that people, both individually and collectively, attribute to places. These meanings are socially constructed as a result of emotional, behavioural and experiential dimensions, as suggested by Holloway and Hubbard (2001):

"...individuals have an emotional need to identify with often personal and intimate places, and hence 'construct' these places for themselves on the basis of repeated experiences (of the sounds, smells,

sights and sensations encountered in a place), the formation of behavioural routines ... and ties of spirituality and kinship (involving, for example, religious belief and family connection" (pg. 75).

In addition to the social attachments that people form with places, the physical environment and landscape itself may also shape meanings and attachment. Sampson and Goodrich (2009) argue that communities carry a specificity that binds them to particular locales, while locales influence the possibilities that can be symbolically drawn upon. So, while identity is culturally reproduced, this is mediated by the particular attributes within landscapes (Sampson and Goodrich 2009). Stedman (2003) argues that places are co-constructed through the socially mediated constructions of humans, and are influenced by the material reality of the biophysical world: "Although social constructions are important, they hardly arise out of thin air. The local environment sets bounds and gives form to these constructions" (pg. 671), and, as Urquhart and Acott (2013) contend, sense of place and place identity are not static, but are fluid, shifting and evolving over time, emerging from relations, the physical environment and social constructions.

Place Identity, Attachment and Character in Fishing Communities

A common thread that runs through social studies of fishing communities is the emphasis on fishing as not just an occupation or a means of earning a living (Brookfield et al. 2005; Jacob et al. 2001; Nuttall 2000). Fishing is a "way of life" and defines fishers' identities as individuals, households and communities. Brookfield et al. (2005) investigated the concept of fisheries dependence in four UK fishing ports. They concluded that fishing provides social capital and "the community understands and makes sense of the world from a perspective that is garnered from years of involvement with the fishing industry. For fisheries-dependent communities, fishing is the glue that holds the community together" (p. 56). Jacob et al (2001) concur, suggesting that fisheries-dependence relates to the "character of the community ... there is a dependence of an industry to support the sense of community and the history of that community" (p. 17-18). However, what does 'character' mean in the context of fisheries dependence? Deconstructing notions of 'character' can begin to reveal how fisheries are entangled and embedded within broader constructions of place identity and attachment.

A number of authors suggest that communities often depend on fisheries for their cultural identity even when it is no longer their main source of income. For example, van Ginkel (2001) suggests that fishers: "relation to fishing is expressive and existential ... Therefore, fishers often persist in working in a failed fishery" (p. 189). Similarly, Williams found that fishing was at the centre of social structures and identity in North-east Scotland fishing communities, with fishers coming from a long line of fishing families, and fishing enterprises often passed on from father to son (Williams 2008). The social life of these close-knit communities revolved around the fishing harbour and boat sheds, and in the homes of fishing families. Thus, for these communities fishing is at the centre of social organisation and provides the setting for community members to articulate themselves and the social interaction through which meanings are mediated (Sampson and Goodrich 2009). To illustrate, in their study of fishing in a small community of Grand Manan Island (off Canada), Marshall and Foster (2002) found that tasks associated with fishing dictate social life and behaviour and shape "the very identity of islanders" (p. 71).

Thus, for many coastal communities fishing is a way of life and their attachment to fishing goes beyond an economic livelihood (van Ginkel 2001; Brookfield et al. 2005; Jacob et al. 2001; Nuttall 2000; Pollnac and Poggie 2008). There is often a long tradition of fishing which adds to the construction of place-based meanings associated with fishing (Symes and Frangoudes 2001). Therefore, in this paper, we attempt to unpack some of these relationships in the context of cultural ecosystem services and explore the way in which fishers develop an attachment to their fishing places, and how these attachments are mediated through community and shaped by the physical environment.

Research Context

Located on the south westerly peninsula of England jutting out into the sea, Cornwall has a coastline of over 300 miles and around 47 ports, most of which are or have been fishing ports. Cornwall is one of the UK's most important regions for marine fishing, landing 8,600 tonnes of fish with a value of £18 million in 2010 (MMO 2010a). Of the UK administration ports, Newlyn had the largest number of registered vessels (619[1]) in 2010, with 88% being under 10 metres (MMO 2010b). Fishing places

in Cornwall are diverse and range from the busy fishing port of Newlyn, with around 150 fishing vessels working out of the harbour, to small fishing coves such as Penberth, with a handful of small open day boats pulled up on the shore. Fishing has a long history in most fishing ports and harbours in Cornwall, with many having roots in the pilchard and herring fishery in the late 18th and early 19th centuries. Shipbuilding and processing facilities were built in order to service the boom in the fishing industry. The legacy of this period is still present today in the form of the buildings associated with fishing, old capstan houses and net or sail lofts, as well as records and displays in local and national museums. However, with a reduction in fish stocks and policy measures to reduce fishing effort, most fishing ports have seen a decline in their fishing effort over the past decade.

Today, the main industries in Cornwall are agriculture and tourism. Tourism is estimated as contributing 24% of Cornwall's GDP (Cornwall Tourist Board) and supports about 1 in 5 jobs. Five million tourists visit Cornwall each year for its natural environment and cultural heritage. The county is well-known for its fish, seafood and fishing heritage with many tourism brochures using images of fishing boats and romanticized descriptions of quaint fishing villages to market the region.

Method

In this study we took an inductive qualitative approach to explore the range of attachments that fishing communities and individuals form with fishing places. Ten different ports or villages (Table 1) were included to capture the diversity of fishing communities from the large port of Newlyn, to smaller fishing harbours such as Mevagissey, to tiny fishing coves with a few small punts launched directly from the beach (Figure 1). These locations were selected using four criteria: the value and volume of fish landings; number and type of fishing vessels; population size and the extent of tourism. Interviews were conducted with stakeholders, including fishermen, representatives of the fishing community, fishermen's organisations, tourism providers, heritage providers and artists in order to explore the perceptions of fishers and the wider community (Table 2). Tourism providers included local authority tourism officers, along with holiday home owners/agents and restaurant owners. Heritage providers included museum curators, the National Trust and historic society representatives.

Interviewees were selected via a purposive sampling strategy to ensure a range of stakeholders were included. Potential participants were approached either directly by email or telephone, through contacts in the community or snowballing (Babbie 2010).

Table 1: Interviews conducted in case study sites.

Location	**No. interviews**
Newlyn/Penzance	10
Cadgwith	7
Mevagissey	5
Mullion Cove	4
Cornwall general	3
Helford	3
St Ives	3
Polperro	2
Porthleven	2
Sennen Cove	1
Penberth	1

Table 2: Participant types in study

Participant type	**No. interviews**
Fisherman	12
Artist/Gallery	7
Heritage provider	7
Tourism provider	6
Fishermen's organisation	4
Harbour master	2
Fishing community	1
Fish processor	1
Fish buyer	1

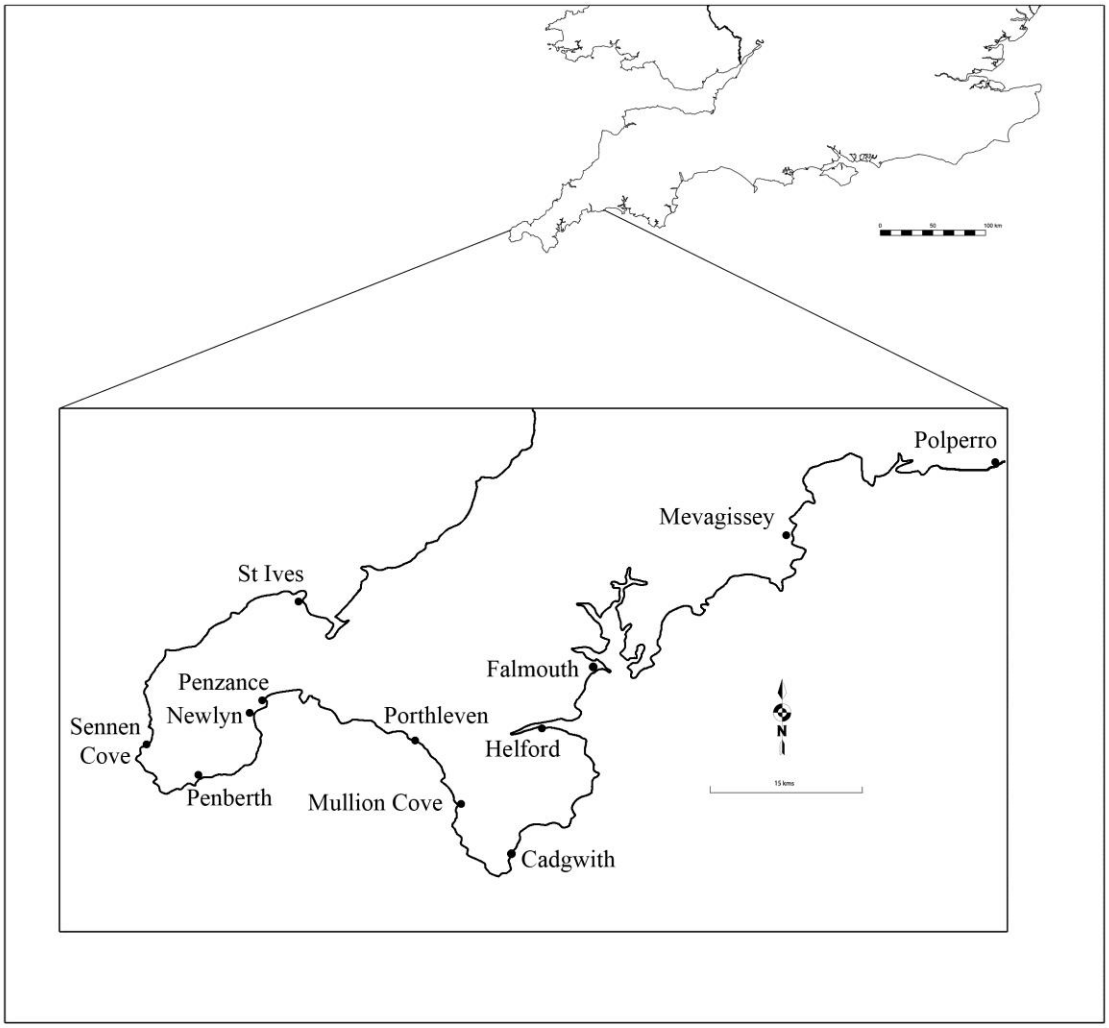

Figure 1: Case study sites in Cornwall, south west England.

Fieldwork was undertaken over a 4-week period in August 2010. Semi-structured interviews (Wengraf 2001; Silverman 2010) were conducted with 41 participants, 9 of whom were women. An interview guide was used to ensure that, firstly, all participants were asked the same range of questions (although it was tailored to specific stakeholder groups) and secondly, to ensure consistency between the research team of two interviewers. Participants were asked if fishing, both past and present, contributed to the character and identity of the town and the community, and, if so, how.

Fishermen were asked about their fishing activities and what fishing means to them, including their hopes and concerns for the future of the industry. The interview aimed to draw out the different perceptions and attitudes people have towards fishing in terms of its contribution to a particular place character and its role in facilitating individual and community identity. The importance of fishing was also considered by asking participants to think about the value of past fishing in terms of the cultural heritage of fishing, through to considering what the impacts of the loss of the fishing industry might mean to a community and to its sense of place.

Interviews ranged from 10 minutes to 120 minutes in duration and were transcribed verbatim. The transcripts were organised and coded using NVivo9 software and the emergent themes informed the findings reported in this paper. Coding involved identifying themes in the data (Auerbach and Silverstein 2003). These were either identified *a priori*, emerging from the types of questions in the interview guide or were identified during the coding process. As a case study approach was taken the results are not meant to be representative of one particular community but rather they are indicative of the role and importance marine fishing plays in communities across Cornwall. These results are drawn from a wider project investigating the social and cultural contribution of marine fishing to coastal communities of the English Channel in England and France as part of the CHARM III Interreg 4a project (which adopted an ecosystems approach for the development of understanding and tools to manage human activities for the long-term sustainability of living marine resources in the English Channel).

The following sections outline the findings from the Cornwall case studies and provide a narrative or story for starting to understand the non-material cultural benefits derived from marine fishing. In our study sense of place was articulated in terms of personal identity, collective identity and social cohesion, along with the contribution of the physical environment to place character. Firstly, a discussion of how fishers form place attachments based on their occupational roles as fishers and their rootedness in place through genealogical histories is presented. Next, the role of shared discourses in mediating community identity is presented, and finally, the role of the physical environment in shaping place identity and attachment is examined both through fishers' connections to their natural

environment and the non-natural elements of fishing that create distinct place-based identities grounded in contemporary and traditional fishing practices.

Fishers' role-based/occupational identity

As in many anthropological studies of fishing communities (e.g. Williams 2008; Kelty and Kelty 2011), fishers in our study described fishing as much more than a job:

> "And it isn't a job, it's a way of life. You know you dream about it in the night, you dream about how you can catch a bigger bass and all the rest of it. And it's a way of life" (Victor, fisherman)
>
> "It's more than a job. It's not a job really. I don't treat it as, I don't ever say I'm going to work in the morning, I'm just going to sea" (Gordon, fisherman)

One fisherman from Cadgwith, a small fishing cove on the Lizard peninsula, spoke of his love for fishing and the way of life it offered:

> "You've got to want to do the job, it's not a job you do for the money, you wouldn't do it in all honesty. You've got to love the job, want to do the job and then the money's secondary you know. That's the way I see it. ... fishing is a way of life, a completely different way of life" (Craig, fisherman).

All of the fishermen interviewed expressed deep attachments to fishing and their occupational identity as fishers. Most (10 out of the 12 interviewed) came from fishing families. One second-generation fisherman in his 30s described how his identity is defined by his occupation:

> "Oh yeah it's a total way of life: I mean you are by definition, people who know me fisherman [Gordon] you know. Like Farmer Giles or whatever, you are defined as your job, which I'm quite proud of really. It's just a total way of life" (Gordon[2], fisherman).

Participants expressed deep emotional connections to fishing, with anthromorphic references to

fishing as “a limb” or “the soul”.

> “It would be as if a limb had been lopped off and I think it would be the worse for it” (Suzanna, tourism provider, talking about Porthleven)

> “The soul would go completely, the soul would go ... Well it would take the heart out, well the whole purpose, what’s the purpose of this place, you know we are all here because the boats come in with their fish” (Sarah, artist, speaking about Cadgwith)

Valuation techniques that rely on market valuation may not capture these intangible values of identity and attachment and, importantly, fisheries policy (such as quota allocation) that does not take stock of the social and cultural impacts of decisions can have significant unintended social consequences (Chan et al. 2012). Understanding this deep attachment to fishing and its role in defining identity may partly explain why some fishers are reluctant to diversify into other activities when fishing is no longer viable and they often do not operate according to economic rationale (e.g. Pollnac and Poggie 2006). In our study, one participant indicated that he felt that diversification meant that he would no longer be a ‘proper’ fisherman. Fishers, like farmers, are having to renegotiate their occupational roles as there is increasing pressure to diversify. Studies of farmers suggest that farm identities can be weakened with increased off-farm work (Brandth and Haugen 2011) or at least those identities undergo a period of change. In their study of Norwegian farmers, Brandth and Haugen (2011) found that farmers still regard themselves as farmers even when they no longer are engaged in agricultural production. Similarly, in our study, identity was intimately linked to the social organisation of fishing, with genealogical attachments based on family traditions playing an important role, consistent with other studies of rural communities (Low 1992; Sampson and Goodrich 2005). Fishermen often came from a long line of fishing families, having grown up watching their fathers and grandfathers fish, and working on the family boat from a young age.

> “I’ve been fishing ever since I was 15 years old, I’ve never had a job interview. My dad was a fisherman, his dad was a fisherman and I think his dad was a fisherman” (Greg, fisherman)

"I mean a big motivation for me out at sea is the fact that it's been in my family for near 100 years now ... the first time I ever went out on my dad's boat I was 8 months old ... and it becomes part of the fabric of your life" (Dan, fisherman)

"It's just its in my blood, when you speak with a lot of fisherman they will always say the same, once a fisherman always a fisherman and that's the way it is" (Peter, fisherman)

Most of the fishermen spoke with a certain pride about their occupation. They were proud to be identified as fishermen and described how their attachment to fishing was partly due to the nature of the job, the freedom and physical challenge of fishing (see also, Pollnac and Poggie 2008). The occupational identity of fishers was also mediated by their daily engagement with the natural environment, concurring with Sampson and Goodrich (2009, p. 904) who assert that: "Identity and belonging can thus be created, constructed, shaped, and maintained through engaging in practices and behaviours that connect individuals to particular landscapes." For fishing, this 'landscape' is the marine and coastal environment in which they work. Thus, the act of fishing occurs remotely to its influence on sense of place in different localities. In our study, fishermen expressed a strong attachment to the marine environment that formed the backdrop for their daily activities of catching fish. Many spoke about how they felt fishing gave them a connection with nature. They were at the mercy of the weather and nature when fishing, and had to use their knowledge and skill to find and catch fish. One fisherman described how his experience of fishing gives him a perspective on his place in the world:

"I enjoy the sea, I love the sea .... when you're on watch early in the morning and you're there by yourself, steaming up and down on the gear …and you watch the sun rise come up over the sea, it's hard to explain but it's fantastic. The same in the evening with sunset maybe and you may be out there in really severe weather and although it's, I wouldn't say frightening, it's still beautiful you know. It's incredible...because out there you feel very small. You realise that you're just a very insignificant speck if you like" (Craig, fisherman).

"I mean it's the most amazing feeling, there is no doubt about it, for me nothing compares to it you know, you are out there, and I don't mean it horribly but you don't think about your children, you don't think about your wife, you don't think about your money problems your mortgage you just … the feeling of being there is just amazing and that is what I strive for, I want that feeling everyday" (Peter, fisherman)

Collective identity and social cohesion

For fishing communities, fishing is part of a cultural process that is collectively constructed and defined. In our study, the role of fishing in community life and social cohesion was seen as important by most of the participants, not just the fishermen. This was illustrated by one participant, who came from a fishing family:

"I mean we got a good community here and we've got a nice school, lots and lots of different things going on in the village. And I think the fishing industry plays a huge important, well keeping it all going" (Christine, fishing community).

Others expressed how fishing is interwoven into the community and part of the social fabric:

"Well it's important for 2 reasons, obviously it creates employment but ... it's part of the social fabric here really" (Jamie, fishermen's organisation)

These findings support Brookfield et al (2005) who assert that: "the fishing industry is seen to be the forum through which community bonds, values, knowledge, language and traditions are established, confirmed and passed on. The fishing industry is 'the way of life' for the community" (p. 56). For communities where fishing underpins the social fabric, the importance of fishing goes beyond its economic contribution and valuations that reduce this to tradable goods and services are in danger of missing these important non-material cultural services.

Influences of the physical environment on identity

In Cornwall, fishing has contributed to the physical landscape and existence of numerous towns and coves, many of which were originally fishing villages. Participants in our study recognised how the landscape in these places is bound up with fishing:

> "It's part and parcel of the place isn't it?" (Victor,fisherman)

> "If it wasn't for fishing in the first place we wouldn't have all these picturesque little harbours" (Jamie, fishermen's organisation)

> "Well fishing is the nucleus of the whole thing isn't it?" (Jeremy, fisherman)

Cornwall's fishermen provide a bridge between an historic activity that has gone on for centuries and the present-day. In our study, participants felt that having a real working fishing industry in Cornwall is important for place identity, as it provided a link to the one remaining industrial activity of the region. They were concerned that the loss of fishing would negatively impact the character as well as the social fabric of places. One fisherman explained how fishing was important for place identity in Cornwall:

> "The fact that it is actually working... that's the thing, it's not just pleasure. It's people actually making a living from the sea. I think that this such a part of Cornwall isn't it really" (Andy, fisherman)

The activity of fishing was also seen as providing an attraction and interest for tourism. In this regard, it was seen as important to have fishing as a working, real, contemporary industry, not just part of Cornwall's cultural heritage.

"I think actually being in a place where there are real live people that you can talk to in the pub or on the harbourside does bring things to life, I think again it adds another dimension to people's holiday the fact that they're not living in some museum" (Lucy, tourism provider)

The physical environment is not just defined by landscape and the natural features. It also consists of the non-natural elements and the material culture that have been shaped by humans over time. In fishing communities, the physical objects associated with fishing, such as buildings, boats and gear, contribute to place identity and are seen as important markers of identity, both for community cohesion and as an attraction for tourism.

Perhaps the most iconic of objects associated with fishing is the fishing boats themselves. Many of the participants interviewed spoke of the attractiveness, appeal and charm of fishing boats in a harbour. They felt they had more character than yachts or other vessels, with their often brightly coloured hulls, and decks laden with nets, pots, buoys and other fishing gear. People perhaps romantically associate fishing boats with a hunter-gatherer activity (FST 2001) that has taken place for millennia and they re-inforce place meanings associated with fishing. One heritage provider questioned whether the identity of a fishing harbour would change if there were no fishing boats:

"I mean is it a harbour without the boats here? And does it become then just a rich man's playground which a lot of the harbours have become where they're just, you know, fishermen have been superceded by pleasure boats. So I think, yeah it is culturally important that we preserve the fishing not the place" (Nick, heritage provider)

Others agreed, indicating that the presence of fishing in a place perpetuates an identity driven by fishing:

"Fishing boats all add a certain amount of charm and personality to the cove and in particular to the people coming and going. I mean Cadgwith with the boats being launched and pulled up and all that sort of thing is good... Fishing boats are a big feature. It's a point of interest for people to see the boats being pulled up and down" (Harry, fishermen's organisation)

"If you took all the fishing boats away you take an element of the appeal of the place away don't you" (Victor, fisherman)

These examples illustrate how the physical environment, both the natural and non-natural, provides the landscape in which fishing identities are constructed. Akin to Sampson and Goodrich's (2009) study of a coastal community in New Zealand, the physical environment influences behaviour and shapes identity, providing both opportunities and limitations. However, rather than thinking about fishing and coastal communities as two separate categories that then interact, a more fruitful conceptualisation might be to consider how 'process' drives the creation of both in a dialectic relationship. The participants in our study constantly referred to the physical environment, to the sea, the weather, tides and the coastal landscape. Their knowledge of and relationship to this sea/landscape rooted them in the place and set the boundaries for the construction of place attachments. Fishing activity thus puts into motion a series of events that shapes the physical landscape, which in turn creates a material reality within which identities (place, individual and community) are constructed. This co-construction then forms the basis on which fishing activity is perpetuated and provides an important link between activities on the sea that are then translated into places on land.

So there is an intimate and complex entanglement of people and places in fishing communities. People construct their identities individually and collectively based on the traditions and roles of fishing in their communities, but these attachments are mediated by the marine and coastal landscapes in which they live and work. Thus, place attachments can be understood as being co-constructed with meaning imbued on the environment based on individual and collective perceptions, memory and experience. Conversely, the natural environment also shapes and sets bounds to how those meanings are constructed.

Conclusions

To conclude, this study has shown that fishing in Cornwall is important for sense of place on a number of levels. First, fishers' identities are constructed based on their occupational identities and genealogical ties reflecting a long tradition of fishing in Cornwall. For many, fishing is a way of life

and not just a means of earning a living. Second, sense of place in fishing communities is a shared narrative and is important for social cohesion and cultural identity. Fishing is the centre for social interaction and the setting through which meanings are mediated. Thus, places are the locus for the formation of distinctive group identities comprising shared symbolic cultural meanings. Third, place-making is also embedded in the physical locale which influences and sets the boundaries for place attachment both in terms of the natural and non-natural elements.

Using an exploration of sense of place as an approach, we have shown that the cultural ecosystem benefits of marine fishing are complex and interrelated as they mediate and translate the influence of the marine environment on land-based activities, identities and settings. While economic valuation in ecosystem services is often appropriate, we argue that the relationships between land and sea, natural and non-natural, human and ecosystem need to be understood through narrative as well as economic valuation. These relationships can perhaps be expressed through dialectic process-driven encounters in which marine fishing, coastal communities and sense of place emerge as entities within webs of interrelations. In this study we have shown how the act of fishing is intimately tied through processes of identity creation and place making, to the co-construction of sense of place in selected coastal communities. The physical infrastructure of coastal places as well as subjective meanings and perceptions emerge from encounters with fishing activity. Marine fishing and the marine environment are themselves shaped by the places that are created on land.

These insights provide a starting point for thinking about the cultural ecosystem benefits from marine fishing. Rather than just considering the economic and ecological dimensions of marine fishing, a more sophisticated co-constructionist approach is to trace the emergent entities and activities that result from this web of relations. Our study has reported on one aspect, the associations with sense of place and the development of individual and place character. Thinking about the contribution of marine fishing to cultural ecosystem services can aid natural resource managers and policy makers in developing a deeper understanding of the "human dimension" in fisheries and coastal management. It can help decision-makers to understand how place attachments are formed, mediated and transformed in fishing communities. By understanding this and working together with fishing communities, policy makers can design more equitable, sustainable and workable approaches

to marine resource management. An important challenge for future work will be to understand more explicitly the link between policy, particular places and sense of place and how this can be incorporated into an ecosystem services approach to fisheries management.

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Notes

1. Number of boats registered at Newlyn as the administration port, although many work out of other harbours in the South West.
2. All names have been changed throughout to preserve anonymity.

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