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Recreational visits to marine and coastal environments in England: Where, what, who, why, and when?

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ABSTRACT

Health and economic benefits may accrue from marine and coastal recreation. In England, few national-level descriptive analyses exist which examine predictors of recreation in these environments. Data from seven waves (2009–2016) of a representative survey of the English population (n = 326,756) were analysed to investigate how many recreational visits were made annually to coastal environments in England, which activities were undertaken on these visits, and which demographic, motivational, temporal, and regional factors predict them. Inland environments are presented for comparison. Approximately 271 million recreational visits were made to coastal environments in England annually, the majority involving land-based activities such as walking. Separately, there were around 59 million instances of water-based recreation undertaken on recreational visits (e.g. swimming, water sports). Visits to the coast involving walking were undertaken by a wide spectrum of the population: compared to woodland walks, for instance, coastal walks were more likely to be made by females, older adults, and individuals from lower socioeconomic classifications, suggesting the coast may support reducing activity inequalities. Motivational and temporal variables showed distinct patterns between visits to coastal and inland comparator environments. Regional variations existed too with more visits to coastal environments made by people living in the south-west and north-east compared to London, where more visits were made to urban open spaces. The results provide a reference for current patterns of coastal recreation in England, and could be considered when making policy-level decisions with regard to coastal accessibility and marine plans. Implications for future public health and marine plans are discussed.

1. Introduction

The use of marine (in the sea) and coastal (land adjoining the sea) environments for leisure and recreation is popular worldwide [1] and can potentially confer numerous economic and health benefits. In the UK, marine recreation has an estimated market turnover of £2.74 billion per year and £1.29 billion gross value added [2]. A valuation, conducted in 2012, of England's South West Coast Path (630 miles of waymarked, publicly accessible footpath along the coasts of Devon, Cornwall, and Dorset) attributed a total direct spend of £436 m by visitors to regions along its length in that year [3]. Recreational contact with coastal environments has also been associated with the attainment of health-enhancing physical activity [4–7], better general health [8,9], and better mental health [9,10]. An estimated 12.4 million people participated at least once in marine and coastal recreation in the UK in 2015 [11] and in an analysis of the Health Survey for England, such activities were found to have resulted in a national gain of 24,853 quality-adjusted life years (QALYs), the monetary value of which was estimated at £176 million per year [12].

In recognition of the various benefits resulting from marine recreation, Part 9 of the UK Marine and Coastal Access Act 2009 [13] details the objective of creating a continuous, walkable route around England's coastal margins (effectively joining the South West Coast Path discussed above with other stretches of coastline path across the country). The impact assessment of the Act conducted by the Department for Environment, Food and Rural Affairs [14] describes the UK government's priority in securing *"a healthy natural environment for everyone's well-being, health and prosperity"* (p.99). Furthermore, this impact assessment links the government's intervention in marine and coastal accessibility issues directly with the coastal environment's popularity for leisure and recreation: *"The coast is popular for many forms of recreation - beach activities, enjoying scenery, walking, etc."* (p. 96). To

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date however, there appears to be little published evidence that supports these statements with clear quantitative estimates. The majority of the existing literature either focuses on water-based recreational activities rather than recreation in marine and coastal environments more generally, or collapses water-based recreational activities into superordinate categories of 'leisure pursuits' or 'outdoor pursuits,' rendering interpretation difficult [15]. Other papers provide little information on demographic characteristics of those visiting the coastal environments [16]. In short, when compared with routine descriptive analyses of recreation in greenspaces, which use national survey data to identify activities undertaken and the demographic and motivation profile of greenspace visitors [17–19], descriptive analyses of data on the use of marine and coastal environments are limited.

The study presented in this paper was conducted as part of the BlueHealth project [20]. Seven years of data from a large representative survey of the population of England were analysed to examine patterns of usage of coastal environments in terms of key demographic, motivational and temporal variables (compared to key inland natural environments) with the aim of informing marine planning decisions. Results can also be used to contextualise answers to other research questions in marine and coastal policy [21], such as: (a) annually, how many leisure visits were made to coastal environments in England between 2009 and 2016?; (b) annually, how many leisure visits involved water-based recreational activities in coastal environments?; and (c) what demographic, motivational and temporal factors can predict such visits and activities?

2. Material and methods

2.1. Sample

The data in this study were drawn from waves 1–7 (2009/2010 – 2015/2016) of the Monitor of Engagement with the Natural Environment (MENE) survey [22]. This is an ongoing, national, repeat cross-sectional survey of the population of England which employs a face-to-face administered interview protocol using a weekly quota-sampling methodology to capture a representative sample of the population of England throughout the year. A total of 326,755 individuals were sampled in the seven waves. In addition to asking a battery of demographic questions, the survey asks respondents to recall the number of leisure visits they made to natural environments in the previous week. If at least one leisure visit was reported (approximately 40% of the total sample), a randomly selected visit in that time frame was followed up with further questioning of details (e.g. the date of the visit, specific type of environment visited, activities undertaken, motivations for visiting, outcomes of visit etc.). Over the first seven waves of the survey, 130,851 such visits were randomly selected for follow-up; these data were used in the current analysis.

Some questions are not asked of all respondents every week. For example, in the first three annual waves of the survey (2009/10 – 2011/12), motivations for visiting natural environments were only asked of one week's sample of respondents per month, whereas they were asked of every respondent in the subsequent four waves of the survey (2012/13 – 2015/16). Weights based on demographic data are provided for each record in the data set such that the sample of visits can be scaled up to be representative of the total population of England's visits. Information on sampling methodology, data collection, and procedures for producing weights have been described in detail previously [22].

2.2. Outcomes

2.2.1. 'Where'

Respondents were asked: "Which of the following list of types of place best describe where you spent your time during this visit?" They could choose one of 15 options or select "other." In the present study, we focused primarily on two coastal visit categories: "a beach," and "other coastline," and three inland comparator categories: (a) "a river, lake, or canal"; (b) "a park in a town or city" (hereafter 'urban open spaces'); and (c) "a woodland or forest". These comparators were chosen to reflect, respectively: (a) the only other primarily aquatic environment in the list; (b) the most visited natural environment in an urban area; and (c) one of the most visited and researched natural environments in a rural area.

Although exploring inland comparator sites may not seem important in a paper aimed at informing marine planning, we believe it is crucial in clarifying what is unique for visitors to marine and coastal environments in terms of demographics, motivations etc.; and thus not only what needs to be considered within a policy/management context to maintain the benefits, but also what opportunities might exist to extend the benefit.

2.2.2. 'What'

Respondents were presented with a list of 20 activities and asked: "Which of these activities, if any, did you undertake?" They could choose as many as were applicable. Four specific water-based activities undertaken in coastal environments ("a beach" and "other coast" combined) were investigated: fishing, water sports, swimming outdoors, and sunbathing/paddling (paddling referring to informal walking in shallow water). Again, to provide context, these were contrasted with the most frequent non-water-based activity, walking (collapsed from the separate activity categories of walking with a dog, and walking without a dog) in both coastal environments and the three key inland environments (see Section 2.2.1).

2.3. Predictors

2.3.1. 'Who'

Based on previous research using the MENE survey data, we focused on the three demographic variables that have been shown to be the best predictors of leisure visit activities in natural environments: sex (male/female), age, and socioeconomic classification [5]. Age was self-reported by the respondent in terms of one of eight categories though for present purposes this was collapsed into three, reflecting early adulthood, middle adulthood, and late adulthood (16–34 years, 35–64 years, and 65 years and over, respectively). Socioeconomic classification was defined in terms of a social grade variable that is widely used in the UK; this was created post-hoc from answers to other items, and coded in line with a four-category classification developed for use in the National Readership Survey [23]: AB, C1, C2 and DE. AB represents respondents in higher and intermediate managerial, administrative, and professional occupations, C1 represents respondents in supervisory or clerical and junior managerial, administrative or professional occupations, C2 represents those working as skilled manual workers, and DE represents respondents in semi-skilled and unskilled manual occupations; this classification also includes state pensioners, unemployed persons, and lowest grade occupations.

2.3.2. 'Why'

Regarding visit motivations, respondents were asked: "Which of the following, if any, best describe your reasons for this visit?" Participants could select as many reasons as they wished from a list of 14 (see the MENE technical report for the full list [22]). In this study responses to the options "for health or exercise" and "to relax and unwind" were used to denote 'health' and 'relaxation' motivations respectively. Additionally, responses to the options, "to spend time with family" and "to spend time with friends," were collapsed into a single category to denote 'social' motivations. Such motivations have previously been investigated with regard to outdoor recreation in natural environments [24].

2.3.3. 'When'

Three temporal variables were also used as predictors. Firstly, each

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