



Conceptualising cultural ecosystem services: A novel framework for research and critical engagement



Robert Fish^{a,*}, Andrew Church^b, Michael Winter^c

^a School of Anthropology and Conservation, University of Kent, Canterbury, Kent CT2 7NR, United Kingdom

^b School of Environment and Technology, University of Brighton, BN2 4GJ, United Kingdom

^c Land, Environment, Economics and Policy Institute, University of Exeter, EX4 4PJ, United Kingdom

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ABSTRACT

The construction of culture as a class of ecosystem service presents a significant test of the holistic ambitions of an ecosystems approach to decision making. In this paper we explore the theoretical challenges arising from efforts to understand ecosystems as objects of cultural concern and consider the operational complexities associated with understanding how, and with what consequences, knowledge about cultural ecosystem services are created, communicated and accounted for in real world decision making. We specifically forward and develop a conceptual framework for understanding cultural ecosystem services and related benefits in terms of the environmental spaces and cultural practices that arise from interactions between humans and ecosystems. The types of knowledge, and approaches to knowledge production, presumed by this relational, non-linear and place-based perspective on cultural ecosystem services are discussed and reviewed. The framework not only helps navigate more fully the challenge of operationalising 'cultural ecosystem services' but points to a more relational understanding of the ecosystem services framework as a whole. Extending and refining understanding through more ambitious engagements in interdisciplinarity remains important.

1. Introduction

Consideration of the cultural benefits and values associated with ecosystems is a distinguishing feature of ecosystem service based approaches to natural resource management. As a paradigmatic class of service, 'cultural ecosystem services' has emerged as a concept around which researchers and decision makers can understand ecosystems in terms of their life-enriching and life-affirming contributions to human well-being, and represents one salient example of the way culture is more generally embraced as an important "variable" in the work of environmental managers and planners (Satterfield et al., 2013). Encompassing a broad symbolic, experiential and virtuous realm of human interactions and understandings of the natural environment, cultural ecosystem services are considered by Chan et al. (2011: 206) to inspire "deep attachment" in communities, and as such, are thought by some to act as important entry points for public engagement and concern in environmental matters, thus helping build wider public support for ecosystem protection (Daniel et al., 2012).

An important body of grey literature has emerged seeking to develop the concept of cultural ecosystem services in different policy, practice and geographical contexts. For instance, the work of the UN

Sub Global Assessment Network, set in motion by the Millennium Ecosystem Assessment (MA) (MA, 2005), has a database containing details of over 80 assessments (www.ecosystemassessments.net/) and of these, two thirds have been identified as specifically addressing cultural ecosystem services and their associated benefits. This may well under-report the extent of work. There have, for example, been wider studies mapping cultural ecosystem services across the European Union (Maes et al., 2013) while cultural ecosystem services have featured significantly within ecosystem assessment processes carried out in UK, Spain and Germany. Elaborations of the concept at the global scale have been further advanced by the establishment in 2012 of The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) which is undertaking a global assessment of the status and trends of biodiversity and ecosystems services and four regional assessments in Africa, the Americas, Asia Pacific, and Europe and Central Asia. The conceptual framework used in these assessments identifies cultural services, along with provisioning and regulating services, as the three forms of ecosystem service, describing these collectively as 'Nature's Gifts' to reflect cultural differences internationally in terms of how human and non-human interactions are conceptualised (Diaz et al. 2015).

* Corresponding author.

E-mail addresses: R.Fish@kent.ac.uk (R. Fish), A.Church@brighton.ac.uk (A. Church), D.M.Winter@exeter.ac.uk (M. Winter).

Despite over a decade of national and international policy and practice activity in assessing ecosystem services, approaches informing understanding of cultural ecosystem services remain the subject of on-going debate. The initiative established by the European Environment Agency to create a 'Common International Classification of Ecosystem services' (CICES) has undertaken a number of consultation exercises in an attempt to develop a more standard approach to describing ecosystem services (<http://cices.eu>). The consultation in 2012 noted that cultural services "cover all the non-material, and normally non-consumptive, outputs of ecosystems that affect physical and mental states of people ... [and] ... that this area was particularly problematic in terms of the different terminologies used by the wider community, which often does not make a distinction between services and benefits" (Haines-Young and Potschin, 2013). The IPBES initiative was still consulting in 2016 on the definition of cultural services to be used in its global and regional assessments (www.ipbes.net/plenary/taskforce). This lack of agreement on the nature and descriptions of cultural and other ecosystem services has significant implications for natural resource management and decision making, since policy makers will be less able to compare assessments or confidently address complex cultural issues when considering the management of biodiversity (Haines-Young and Potschin, 2013; see also Potschin and Haines-Young, 2016).

Although treatments of the concept from the starting point of academic literature remain comparatively marginal within the broader development of ecosystem service discourse,¹ a number of significant theoretical and thematic interventions (e.g. Braat and De Groot, 2012; Chan et al., 2012a; Daniel et al., 2012; Pereira et al., 2005; Schaich et al., 2010) empirical studies (e.g. Bieling and Plieninger, 2013; Jobstovogt et al., 2014; Bryce et al. 2016; Edwards et al. 2016; Fish et al. 2016) and touchstone summaries (e.g. Milcu et al., 2013) have emerged in recent years.

In this paper we seek to make a theoretical contribution to the debate about how to make sense of culture through the lens of an ecosystem services framework. The idea of 'cultural ecosystem services' is practically challenging in the context of recent debates about ecological knowledge production and decision making (Russel and Jordan, 2014), since a common starting point of ecosystem services research is that culture is a nebulous, and generally non-compliant, category of integrated resource management. As Plieninger et al. (2013: 119) reflect, "cultural services differ in various aspects from other ecosystem services, presenting strong barriers toward their broader incorporation". Whether energies should be directed towards constructing culture so that it remains consistent with existing methods, or towards elaborating its exceptional position by way of entirely different models of knowledge production, is the epistemological conundrum that has driven recent academic discourse in this area (Satterfield et al., 2013).

In the argument that follows we outline and exemplify a framework to help better align the 'cultural' to the framework of ecosystem services, whilst recognising that consideration of this category brings with it some distinctive challenges for researchers and decision makers. We build on recent work developed as part of the UK National Ecosystem Assessment Follow-On (NEAFO, 2014) to advance a novel approach to cultural ecosystem services that is relational and non-linear; starting from the perspective of peoples' interactions with, and understandings of places, localities, landscapes and species. This approach situates ecosystem services in their cultural geography, allowing a highly interpretative category of human meaning and experience to be explored in the context of material processes and entities. This is important for while the idea of ecosystem services is

designed to capture how interacting components of nature give rise to human well-being researchers have, paradoxically, tended to equate the category of cultural ecosystem services with the idea of 'intangibility' (Braat and De Groot, 2012; Constanza et al., 2011).

The paper specifically follows Chan et al. (2011) in advancing an understanding of cultural ecosystem services that recognises them as a co-produced and co-created outcome of peoples' interaction with ecosystems and suggests, as Schaich et al. (2010) have done in their analogous discussion of landscape, that geographical understandings of culture provide researchers and decision makers with a powerful framework by which the cultural value and significance of ecosystems can be understood in material terms. This logic is also consistent with the conceptual framework for IPBES, which argues for the need to incorporate into assessment not only a consideration of the instrumental values associated with the benefits people gain from nature to enhance their quality of life, but also an analysis of the relational terms on which values in and through nature are constructed (Diaz, 2015). More generally, by locating ecological phenomena in their geographical context we argue that the interpretive qualities of cultural ecosystem services can be recognised in ways that avoid slipping into the potentially disempowering claim that culture is simply nowhere and therefore beyond interrogation (See also Williams, 1983; Cosgrove and Jackson, 1987; Jackson, 1996).

In the section that follows we review briefly key tenets of the debate regarding culture's placement within the ecosystem services framework and how researchers have sought to distinguish understanding of this concept in relation to prevailing scientific and economic approaches to ecological knowledge production. Our focus here draws principally on the theoretical academic literature to contextualise our case for this more relational understanding of cultural ecosystem services. The distinctiveness of our contribution is then set out in Sections 3 and 4, describing first the key parameters of a novel framework for conceptualising cultural ecosystem services and its relationship to existing definitions and approaches, and then second, outlining and justifying the specific attributes of the framework. In Section 5 we go on to consider the implications of this theoretical contribution for the practical elaboration of cultural ecosystems services. Here we address specifically the way the framework maps on to issues of evidence gathering and knowledge production to inform the practice of ecosystem assessment and decision making taking an ecosystems approach. Our analysis concludes by suggesting that refining understanding and applications of this relational approach to cultural ecosystem services depends on further extending the interdisciplinary reach and ambitions of the ecosystem services agenda.

2. Producing knowledge about culture? Key areas of debate and critique

Although the general concept of ecosystem services is often associated with a broadly instrumental view of ecosystem-human relations, the idea of cultural ecosystem services is designed to recognise that ecosystems are replete with cultural value and significance and invite therefore an expansive understanding of the contributions ecosystems make to human well-being. Definitions vary but, like other classes of ecosystem service, understanding of this cultural dimension of ecosystems has been influenced considerably by the logic of the MA. Cultural ecosystem services thus encompass the "non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences" (MA, 2005: 4). Indeed, definitions put forward in policy applications of the ecosystem services framework tend to correspond strongly with this MA formula. This not only includes exercises in sub-global ecosystem assessment, but also wider international initiatives seeking to harmonise understanding of key concepts within decision making. For instance, the work of 'The Economics of Ecosystems and Biodiversity' (Kumar, 2010: 79), argues that cultural ecosystem

¹ At the time of writing, a search for the term 'ecosystems services' in a ISI Web of Science topic search resulted in around 22,000 articles. A search for the topic 'cultural ecosystem services' revealed just 157 contributions.

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