

Biocultural Heritage in the UK

Research Report



inherit

Biocultural Heritage in the UK

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Cover image: Earth in Common, an urban croft for community food sovereignty

Credit: Zoe Russell

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Summary of Findings



Dyfi Grain Growers, Dyfi biosphere in mid Wales. Credit: Kate Hastings

This report explores the potential of biocultural heritage for developing more inclusive, just and sustainable conservation policies and practices in the UK.

The starting point for the research was the biocultural heritage framework developed by the International Institute for Environment & Development (IIED), Asociación ANDES and Quechua communities in Peru. This framework is designed to help protect the rights that support indigenous peoples and local communities around the world.

The aim of the research was to assess the potential value of this framework for helping to address biodiversity loss in the UK in ways which address all four pillars of sustainability – the cultural, social and economic as well as the environmental – and which support the livelihoods and self-determination of local communities.

The research reviewed the framework against existing policies in the UK for nature conservation, landscape, historic environment and cultural heritage. It involved interviews with people in UK public bodies with remits for these policy areas. It also explored four case studies, to consider the potential value of the framework for practice on the ground.

Biocultural heritage

‘Biocultural heritage’ recognises that biodiversity, cultural heritage and the sustainable development of local communities are interlinked.

The IIED biocultural heritage framework focuses on the key outcome of creating

resilient livelihoods. It recognises that landscapes have been shaped both by people and by nature, and it promotes a community-led, rights-based approach to conservation.

The framework identifies five factors which combine to create the conditions for resilient livelihoods. These are ‘biodiversity’, ‘landscape’, ‘cultural and spiritual values’, ‘traditional knowledge’ and ‘customary laws’. Considering these things together – and recognising their interdependencies – helps to integrate action for biodiversity with action for cultural heritage, human wellbeing and prosperity, and the protection and fulfilment of human rights.

Biocultural heritage in the UK

In policy across the UK, nature, cultural heritage and community development have traditionally been treated separately, and local communities have had limited opportunities to participate in conservation decisions affecting them. Governments and public bodies have recognised this and now promote more integrated approaches to nature and culture, and greater community engagement in conservation decision-making and practice. The research assessed the potential value of the IIED biocultural heritage framework for furthering these aims, and the extent to which this framework might need to be adapted to fit the circumstances in the UK.

Findings from the UK policy review

In relation to the different elements of the IIED framework, the research found:

Biodiversity and landscape

The UK has a well-developed framework for biodiversity (or nature) conservation, with a focus on ecosystems and maintaining their functionality. Given that biodiversity continues to decline, it is recognised that conservation needs to articulate better with other goals and that more and better engagement is needed with diverse land owners and users, communities and publics.

There is recognition of the links between social, economic and ecological resilience, and those between livelihoods and conservation. The relationships between agriculture and biodiversity have been a particular concern, both in terms of the negative impacts of intensive agriculture and the benefits of more sustainable land uses, e.g. crofting in Scotland and other forms of smallholding linked to land with 'high nature value'.

When it comes to the other aspects of the biocultural heritage framework, beyond livelihoods, UK biodiversity policies appear to make few links between biological diversity and cultural heritage, although some attention has been paid to 'traditional knowledge' and its potential value for nature conservation.

However, the UK also has a well-established policy framework for 'landscape', in which landscapes are understood to result from interactions between people and nature. It is through this area of policy, rather than biodiversity policies, that cultural issues are addressed more fully in relation to environmental issues.

Landscape policies across the UK provide a potential bridge between biodiversity and the wider range of concerns addressed by the biocultural heritage framework.

For that potential to be realised, more needs to be done to implement the principles, which already exist in landscape policies, for an integrated approach to nature and culture and for local participation in decision-making. Policy aspirations in these areas have not been translated sufficiently into practice. As a result, many local communities are disempowered in relation to decisions about their landscapes, and people's rights to cultural life in relation to the land and local environment are not properly supported.

Cultural and spiritual values

In the UK, ideas of 'cultural and spiritual values' are found in policies both for cultural heritage and for nature, although they feature more prominently in the former. The term 'cultural values' is more commonly used here, although 'spiritual values' are considered to be embedded in this. In nature conservation contexts, explicit reference to 'cultural values' is less common, but there is a strong appreciation of cognate issues such as how connections to nature contribute to people's sense of place and wellbeing.

In both cultural heritage and nature conservation contexts, while diverse values have received increasing attention, this is a relatively recent development. Longer standing concerns for the conservation

of ecosystems and of tangible cultural heritage still dominate policy and practice. Where other values are considered, this is often in a generic way, in terms of broader public values rather than the diverse values of specific communities or social groups. Participation is still limited when it comes to processes to identify the relevant values and feed them into decision-making. Additionally, policies have yet to fully address recent calls for a radical shift in the economic values underpinning current relationships between society and nature.

Traditional knowledge

As a signatory to the Convention on Biological Diversity (CBD), the UK has targets to respect and make use of traditional knowledge in biodiversity conservation. Nature conservation agencies have taken some steps to address this e.g. by working with smallholders to benefit from their traditions of knowledge and practice, and by commissioning studies into place-names and the knowledge about the environment they represent.

Traditional knowledge has not received the same level of attention as some other CBD targets. In part, this is because the idea of traditional knowledge is seen as problematic by institutions, given its perceived association with indigenous peoples elsewhere in the world and perceived difficulties in applying it in the different circumstances of the UK. 'Traditional knowledge' is also often understood as referring to knowledge which is only held by 'traditional' communities or social groups, which are

seen as being only a small minority in the UK. The assumption is that such knowledge has been lost and does not exist across much of the country.

Institutional interest in traditional knowledge and related cultural issues tends to be confined to specific information or practices, and how they might be exploited for nature conservation purposes; there is less concern for communities' broader understandings of their place-based relationships and for integrating efforts to sustain transmission of knowledge with efforts to sustain the communities concerned and efforts to conserve and enhance the local environment.

Customary laws

The inclusion of 'customary laws' in the framework adds an explicit concern for community agency and self-determination, and for people's rights and responsibilities in relation to the land and natural resources.

Provisions for public and/or community participation are now embedded in biodiversity, landscape and historic environment laws and policies across the UK. However, these provisions are qualitatively different from the kinds of governance captured by the term 'customary law', where specific communities have defined rights and responsibilities with customary and/or legal protection and a greater degree of agency.

In the UK, analogues for 'customary law' include common land in England and Wales, some examples of which date back

to the Middle Ages and are still subject to common rights today. They include crofting tenure in Scotland, originating in the 19th century and involving specific rights of tenure and collectively-managed common grazings. New forms of governance are also being created in Scotland through the community ownership of land. In all of these cases, it has been argued that there is a correlation between community governance arrangements and benefits for nature.

The term ‘customary law’ is not a neat fit for these examples, which may or may not have been established over centuries as a matter of custom. Nonetheless, the examples all align with the biocultural heritage framework’s concern for community governance, rights and responsibilities.

In translating this aspect of the framework to fit UK circumstances, prevailing patterns of land ownership and control also need to be taken into account. Most land is controlled by private owners. Smaller but still significant amounts are controlled by the state and by landowning NGOs. Community ownership and common land arrangements are widespread, but cover only a relatively small proportion of the land. In many places, local communities do not have strong rights relating to land use (although rights of access may exist) and they have limited power in relation to decisions about the land.

Resilient livelihoods

Across policy, the concept of resilience has become a familiar one, both in terms

of the resilience of ecosystems and of our societies and communities. The biocultural heritage framework posits that the resilience of ecosystems is linked with the resilience of communities, their cultural lives and their livelihoods.

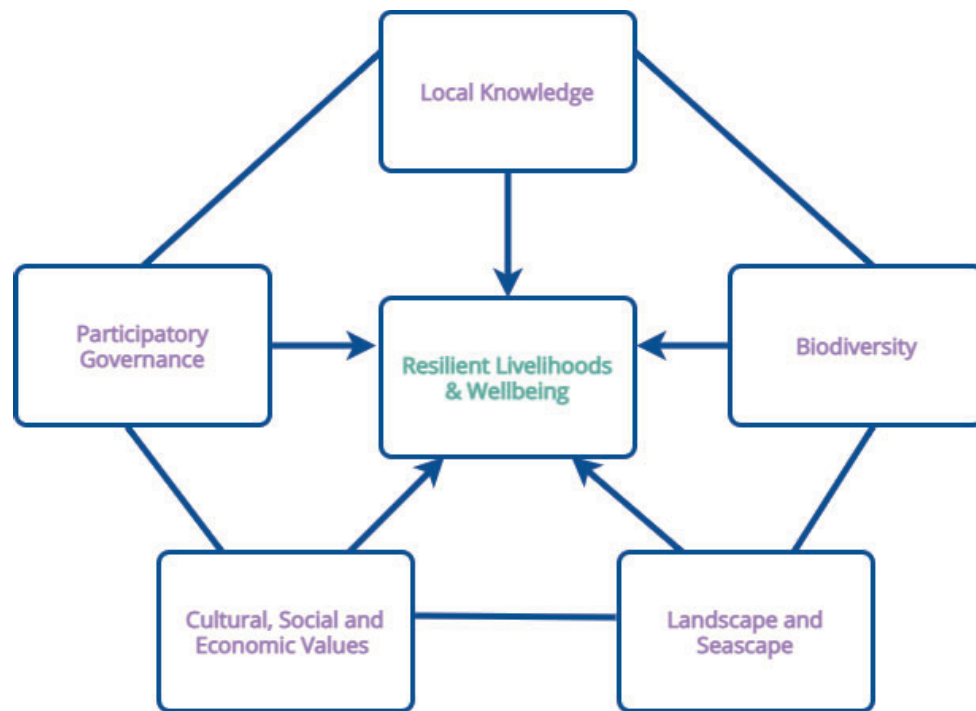
Elements of this thinking are already to be found in the UK, as seen for instance in the general growth in prominence of multi-dimensional ideas of sustainable development and wellbeing in policy. The concept of resilience has received greater attention over the last year and more as a result of people’s experiences of the Covid-19 pandemic, and differences in the capacity of communities across the UK to respond to the shock. However, the shift towards alternative economic, social and environmental models that enable resilience, such as doughnut economics and wellbeing economies, is a fragmented and slow one.

A revised biocultural heritage model

All the elements of biocultural heritage framework have some recognition in existing UK policies.

In some cases – e.g. ‘biodiversity’ and ‘landscape’ – there is a more-or-less direct match between the language and thinking of the framework and that found in the UK. In other cases – e.g. ‘cultural and spiritual values’, ‘traditional knowledge’ and ‘customary law’ – there are analogous concepts in the UK, but also differences in the language that is used and the circumstances it describes.

Given this, the IIED framework needs



Revised biocultural heritage model

Adapted from Swiderska and Argumedo 2017

some adaptation and a revised model of biocultural heritage is proposed for the UK.

This revised model retains the intention, structure and elements of the original. The core outcome of resilient livelihoods has been expanded to include 'wellbeing'. 'Biodiversity' has been retained and 'landscape' has been expanded through the addition of 'seascape', to allow better application to coastal and marine environments.

'Cultural, social and economic values' has been substituted for 'cultural and spiritual values', to recognise the different language used here. The intention – to recognise and include diverse values – is the same.

'Local knowledge' is used instead of 'traditional knowledge' because of the perception in the UK that 'traditional knowledge' means knowledge held by a minority of 'traditional' practitioners,

communities or social groups, and which is somehow a relic of the past. Re-framing this as 'local knowledge' should help to remove such conceptual barriers and open conversations about diverse types of knowledge that are found within local communities and transmitted from one generation to the next, creatively and dynamically.

While 'customary law' is a good fit for some circumstances in the UK, it does not capture the range of collective rights and governance arrangements that exist here. It also does not speak to the emergence of new forms of community governance. This has been re-framed as 'participatory governance'. Stronger forms of participation are invoked here, rooted in ideas of self-determination for local communities based on collective interests. Different approaches to participation are

likely to be needed to account for the complex power issues and inequalities that exist across the UK. Issues of resource and power differences are seldom addressed explicitly and sufficiently by nature, landscape and cultural heritage policies, but the significance of these issues was recognised by research interviewees in relation to the governance of land and natural resources.

Examples of practice

The research looked at four case studies. The first – a Biocultural Heritage Tourism project in the North Devon and Brighton & Lewes Downs Biosphere Reserves (England) – is the only one where the term ‘biocultural heritage’ is being used explicitly. The other three cases are the Mixed Farming – Histories & Futures project in the Dyfi Biosphere Reserve (Wales), the Mourne Mountains Landscape Partnership (Northern Ireland), and the Wester Ross Biosphere Reserve and adjacent Marine Protected Areas (Scotland). The four cases – three UNESCO Biosphere Reserves and a Landscape Partnership – were chosen because of their explicit focus on approaches which bring culture, people and nature together.

Each of the case studies was analysed against the revised biocultural heritage framework.

Biodiversity, landscape/seascape, local knowledge and diverse values were prominent concerns across all of the case studies.

The English and Welsh projects explicitly

seek to improve people’s livelihoods and wellbeing. Ideas of wellbeing are also evident in the approach being taken in the Mourne Mountains, and livelihoods and wellbeing are close to the surface in the Scottish case, where there are tensions between the values embedded in the Marine Protected Area, the economic values associated with industrialised fishing, and other values held by different people within local communities.

In all cases, though, participatory governance – an essential part of the biocultural heritage framework – has been less prominent, both as a feature of conservation governance and as an explicit objective for change. In both the Welsh and Northern Irish cases, concerns around participation had come up, explicitly, during the projects, but those projects did not themselves aim to contribute to change in this area. In the Welsh case, a follow-on project, Tyfu Dyfi, will do more on this front; it includes plans around leasing land to establish a community-led agricultural enterprise. In the Scottish case, there are examples of community governance in the area – including crofting communities and community land ownership – but these do not extend to the fishing grounds which lie at the heart of the case study. The situation regarding participatory governance in these four cases speaks to the patchy nature of established forms of such governance across the UK.

Biocultural heritage – a sensitising concept

The biocultural heritage framework does

not prescribe a particular path to be followed regardless of the circumstances. Rather, its value lies in recognising ignored or disregarded knowledges and values so that these can be incorporated into policies, decisions and actions which affect the local environment and local communities. Its value also lies in recognising that participatory forms of governance are needed, in order for these knowledges and values to be identified, understood and integrated – successfully and ethically – with conservation policies and practices, and for people to enjoy resilient livelihoods and wellbeing while nature thrives.

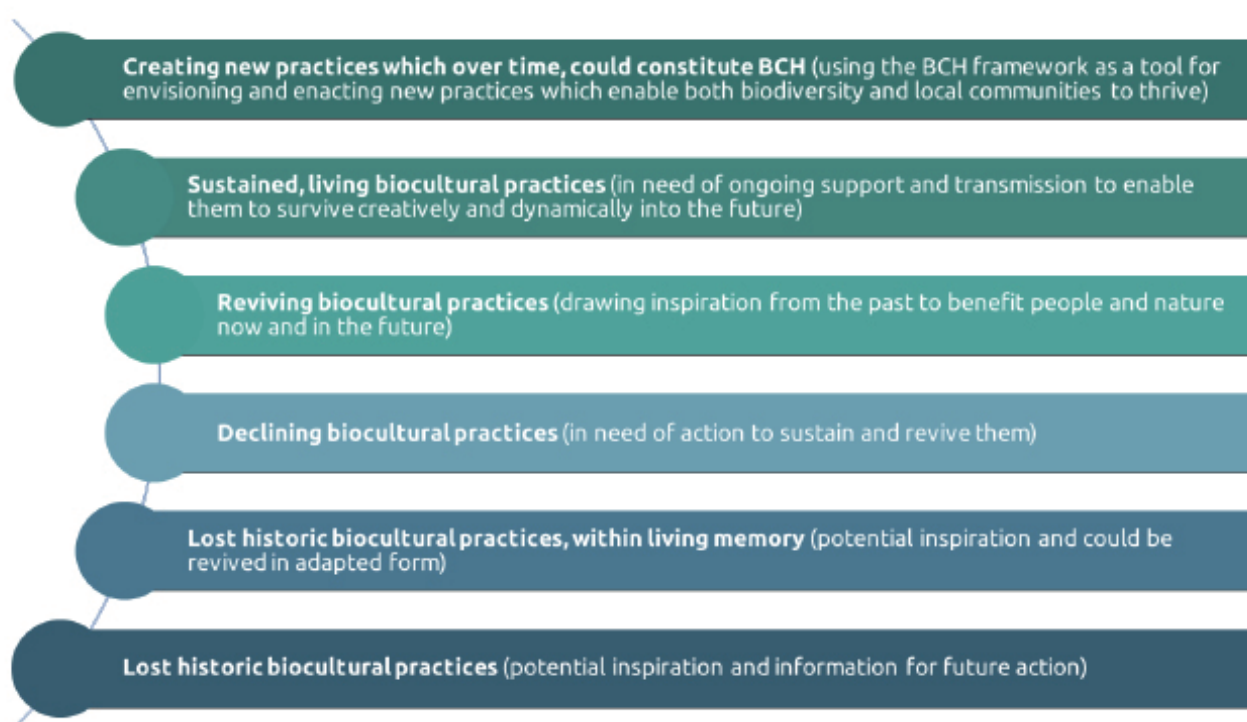
Biocultural heritage is a sensitising concept which helps to ensure that policies, decisions and actions around biodiversity take full and proper account of local social, cultural, environmental and economic circumstances, and that they involve rather than exclude the range of people who are affected.

The framework is therefore a tool for dialogue and a lens through which to analyse what is going on in policy and in practice, particularly in terms of the extent to which they address the links between biodiversity, cultural heritage and people's livelihoods and wellbeing.

The policy review and case studies show that attention is increasingly being paid to these links in the UK. However, they often remain lesser priorities, and they are still not being addressed at all in some contexts. This initial research indicates how the framework might be used to identify priorities for action in order to change this.

A spectrum of biocultural heritage

The biocultural heritage framework needs to be applied flexibly if it is to have meaning in diverse circumstances and if it is to empower and include. The figure below indicates the spectrum of diverse ways in which the concept might be understood in



Biocultural heritage practices as a spectrum

this context.

As this figure suggests, the ‘heritage’ in biocultural heritage refers to knowledges, practices and values which are passed on through the generations creatively, dynamically and adaptively.

This idea of heritage allows for the creation of new kinds of connection between people and nature and new forms of governance, where they have potential to be passed on and the potential for being sustainable over the long term. One reason why ‘biocultural heritage’ is significant for sustainable development is that the practices, knowledges, values and governance structures to which it refers have been adapted to local circumstances over time. It is this adaptation, transmission and resilience over time – and the co-evolution of people and local environment it represents – that the term ‘heritage’ captures.

Using a heritage lens to look at current circumstances helps to understand how the unsustainable aspects of the ways in which we own, govern, access and use land and sea have come about. It can also highlight what kinds of change might be needed and might be appropriate in particular places, to deliver sustainable development which meets the needs of people and nature both now and over the longer term. This reflects the origins of the concept as one which embodies indigenous communities’ collective rights and their approaches to the governance of land and natural resources, rooted in cultural values, customary laws, traditional knowledge, social solidarity and

the sustainable use of resources across the generations.

The report argues that, whilst progress is being made internationally and nationally on many of the concerns raised by the biocultural heritage framework, more needs to be done to ensure the implementation and prioritisation of policies which respect and promote people’s cultural heritage, rights and livelihoods in nature conservation contexts.

It is particularly important to raise these issues at this time, when the Post-2020 Global Biodiversity Framework is being developed under the international Convention on Biological Diversity. This will define priorities, targets and approaches for biodiversity conservation for the years ahead. The inter-dependencies of biodiversity, cultural heritage and people’s livelihoods and wellbeing need to be taken into account, within an inclusive framework of participatory governance, if the marginalisation of local communities is to be avoided and sustainable development – in its cultural, social, economic and environmental totality – is to be made a reality.

Chapter 1

Introduction



This report explores the potential value of the biocultural heritage approach for developing more inclusive, just and sustainable conservation policies and practices in the UK.

Policies for biodiversity, landscape and cultural heritage have increasingly promoted a more integrated approach to nature and culture and greater engagement of local communities in conservation decisions and actions, in order to respond to global challenges such as the climate and biodiversity crises. However, in the UK, these policies have not proved sufficient to reverse decades of biodiversity decline and, in their implementation, they have not sufficiently involved local communities in decisions that affect them and taken account of people's livelihoods and wellbeing.

The biocultural heritage framework recognises how biodiversity, cultural heritage and people's livelihoods and wellbeing are interlinked. The framework exists – in research and practice – predominantly outside of the UK, and its potential here has yet to be fully explored.

International evidence suggests that the biocultural heritage approach might support and help to integrate nature conservation, cultural heritage and community development. Hence, the research aimed to explore the potential of this approach in the UK and how it might be applied in practice.

The research was funded through the Scottish Graduate School for Social Science Student-led Internship scheme, which

allowed the author to work with the Inherit Institute for 3 months between March and June 2021. The author is a PhD Candidate at the University of Stirling working in the area of sustainable development, community and heritage.

Full details of the methods and materials used in this research are provided in Appendix I, including a list of interviewees and policy documents reviewed.

Chapter 2 of the report introduces biocultural heritage, drawing on an international body of literature to outline why the concept has emerged and what its components are. The chapter focuses on the conceptual framework for biocultural heritage developed by the International Institute for Environment & Development (IIED), Asociación ANDES and Quechua communities in Peru, taking its components in turn and explaining each with reference to the wider research literature.

Chapter 3 presents the findings from an analysis of policies in the UK against the biocultural heritage framework, assessing the extent to which existing policies are already aligned with this framework. The analysis is based on a review of the policies themselves and on stakeholder interviews with nature conservation and historic environment organisations including NatureScot, Historic Environment Scotland, Natural England, Historic England, Cadw and the Department for Communities in Northern Ireland. Based on this aspect of the research, an amended biocultural heritage framework is presented at the end of the chapter, adapting the original to fit

the UK context.

Chapter 4 presents four case studies, one from each country in the UK. These are: biocultural heritage tourism in England; mixed farming histories in Wales; upland landscapes in Northern Ireland, and; marine conservation and heritage in Scotland. The case studies are analysed against the revised biocultural heritage framework presented in the previous chapter, to assess the potential value of the framework as a tool for use in practice.

Chapter 5 discusses the findings from chapters 3 and 4, drawing out some wider issues and themes relating to the potential of the biocultural heritage framework in the UK and its importance for responding to key contemporary policy and practice challenges.

The research focused predominantly on the policies and practices associated with nature and historic environment conservation in the UK. These sectors are particularly relevant to an analysis of the potential of a biocultural heritage framework. The primary focus of the research has been on biodiversity and nature conservation, because a key aim is to provide impetus for new approaches which help to integrate culture and the sustainable development of local communities into policy and practice in this area.

However, biocultural heritage is a concept with broad ranging scope, and the research represents an initial analysis of its potential in the UK. Further work is needed not just

in relation to nature conservation but also in relation to other sectors and to how they can and should interact.

Chapter 2

Understanding Biocultural Heritage



What is biocultural heritage?

In academic research, biocultural heritage is a relatively new concept¹. The concept is also one which has been developed in practice; it was defined in 2005 by the International Institute for Environment and Development (IIED) through work with Asociación ANDES and Quechua communities in Peru, although it was already apparent in indigenous rights policy before that time.²

The IIED and partners define the idea of a ‘collective biocultural heritage’ as the:

Knowledge, innovations and practices of indigenous peoples and local communities which are often held collectively and inextricably linked to traditional resources and territories; including the diversity of genes, varieties, species and ecosystems; cultural and spiritual values; and customary laws shaped within the socio-ecological context of communities. These components of knowledge systems and their ongoing interaction are vital for the use, creation and transmission of traditional knowledge, and are often linked to knowledge of cosmic forces (as part of indigenous peoples ‘cosmovision’ or holistic worldview).³

Therefore, while the term biocultural heritage may be new, it is a way of describing a heritage which already exists in the world and which has previously been described and discussed in other ways.

In the research literature, biocultural heritage exists alongside a broader suite of ‘biocultural’ approaches⁴ which have gained currency amongst academics, intergovernmental organisations, international NGOs and indigenous organisations. For example, ‘biocultural diversity’, which emerged in the 1990s, captures global concerns about language endangerment, vanishing cultures and biodiversity loss⁵, recognising that similar socioeconomic and political factors underpin these processes. Such processes pose interrelated and synergistic threats to global biodiversity and to the world’s languages and cultures culminating in the “converging extinction crisis” of the diversity of life in all forms.⁶

Recognising the interconnectedness of cultural and biological diversity is not simply a conceptual or theoretical matter, but has implications from “nature conservation and social development to the protection of indigenous peoples’ rights, to the maintenance and revitalization of language, culture, and traditional knowledge” with

1 Grove et al. 2020

2 Daes 1995

3 IIED and ANDES 2005

4 Further uses of ‘biocultural’ include biocultural approaches to conversation, biocultural landscapes, biocultural rights, biocultural innovations, biocultural territories and biocultural community protocols.

5 Maffi 2018

6 Maffi 2018

biocultural phenomena interconnected across local to global scales.⁷

Biocultural heritage captures this interlinkage of biodiversity and cultural diversity which, from a heritage perspective, is the outcome of diverse cultural traditions being handed down across generations. In highlighting the interdependency of nature and culture in this way, the idea of biocultural heritage helps to assert the rights of indigenous peoples and local communities in the context of exclusionary conservation approaches.

Biocultural heritage invokes the values, cultural memory and ways of life of particular peoples as they are reflected in and connected with particular places. While the concept was first developed to recognise indigenous peoples' contributions to and rights in relation to their biodiversity/biological heritage and traditional territories, it has been argued that it should be applied to a wider range of settings.⁸ Local ecological knowledge is a feature of all cultures, and biocultural heritage includes values and practices across different kinds of societies.⁹

Biocultural heritage thus represents the richness and history of language, heritage, cultural memory, ecological knowledge and values embedded within human culture.¹⁰ However, this may be overlooked

in circumstances where people and authorities “do not explicitly acknowledge the human-nature relationship within their fundamental values.”¹¹ A review of the academic literature highlights that the term biocultural heritage remains most prominent in contexts relating to indigenous communities, especially in South America, Africa and Australia, and it has also been used in Canada, the United States and Asia. Across the 51 academic publications reviewed for this research, only a small number relate to Europe, namely Scotland, England, Ireland, Sweden, Finland, Spain, Sicily, Slovakia and Bosnia.

From a policy perspective, biocultural heritage integrates a number of more established or better known concepts, namely biodiversity, landscape, cultural heritage (in all its forms), cultural diversity and cultural rights (see Table 1).

Why biocultural heritage?

Biocultural heritage addresses the deficiencies in contemporary approaches to nature and culture which treat the two as separate. Currently, none of the 17 Sustainable Development Goals (SDGs) captures the “need to protect local ecological knowledge, cultural heritage and alternative economic practices – nor their interrelation with biodiversity – as a pathway to sustainability.”¹² Thus, the SDGs

7 Maffi 2018, p.3

8 Cocks 2006; Cocks and Wiersum 2014; Poole 2018; Merçon et al. 2019

9 Cocks 2006; Cocks and Wiersum 2014

10 Poole 2018

11 Cocks 2006 in Poole 2018, p.60

12 Poole 2018, p.55

Table 1: Key definitions

Biodiversity	Biological diversity means the variability among living organisms from all sources and the ecosystems of which they are part, including the diversity within species and of ecosystems. ¹³
Landscape	The European Landscape Convention defines 'landscape' as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors."
Cultural Heritage	A group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. This includes all aspects of the environment resulting from the interaction between people and places through time ¹⁴ . It encompasses the tangible heritage of landscapes, historic places, sites and built environments and collections. It also encompasses intangible cultural heritage.
Intangible Cultural Heritage	Oral traditions and expressions such as language, social practices, rituals and festive events, knowledge and practices concerning nature and the universe, traditional craftsmanship. ¹⁵ Intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment and circumstances.
Cultural Diversity and Cultural Rights	Culture takes diverse forms across time and space. This diversity is embodied in the uniqueness and plurality of the identities of groups and societies worldwide. Cultural diversity is as necessary for humankind as biodiversity is for nature. It is the common heritage of humanity and should be recognised and affirmed for the benefit of present and future generations. ¹⁶ Cultural rights are part of the international human rights framework and can be defined as rights of access to, participation in and enjoyment of culture.
Biocultural Diversity	Biocultural diversity is considered as biological diversity and cultural and linguistic diversity and the links between them. Biocultural diversity is a dynamic, place-based, aspect of nature arising from links and feedbacks between human cultural diversity and biological diversity. ¹⁷
Biocultural Heritage	Biocultural heritage is the knowledges, innovations and practices of indigenous peoples and local communities resulting from interactions with biodiversity and landscape, rooted in specific cultural and spiritual values and customary laws passed down through generations. It therefore reflects the diverse ways of being between human communities and their local environments over time. ¹⁸

13 Convention on Biological Diversity 2006

14 Convention on the Value of Cultural Heritage for Society 2005

15 Convention for the Safeguarding of the Intangible Cultural Heritage 2003

16 UNESCO Universal Declaration on Cultural Diversity 2001

17 Bridgewater and Rotherham 2019

18 see IIED and ANDES 2005; Bridgewater and Rotherham 2019; Poole 2018

are missing the language of biocultural heritage which would explicitly account for the interaction between people and nature.

Additionally, whereas many approaches to nature conservation¹⁹ have tended to see people simply as a threat to the environment, biocultural approaches to conservation acknowledge “that people are part of nature, not separate from it, and are in a dynamic relationship with it, mediated by cultural structures and institutions.”²⁰ Hence, the concept of biocultural heritage can be considered a useful alternative framework to many Western conservation paradigms that separate people from nature.²¹

The idea of ‘biocultural rights’ derives “from the recognition that actions and projects aimed at the conservation of the environment have a history of human rights disrespect and abuse when dealing with indigenous people and local communities.”²² This includes land evictions, exclusion from access to and the use of resources, and denial of self-determination.²³ Rights-based approaches to conservation open up the way to different solutions which can ensure mutual benefits to the environment and to indigenous peoples and local communities, recognising the important roles that people play in the stewardship of the natural

environment. Balancing human rights and the environment is intrinsic to the idea of biocultural rights which combine human interests and environmental values.

Whilst biocultural rights tend to be more strongly associated with ‘traditional’ rural communities which are perceived to have closer cultural and spiritual ties to their lands, these rights can and should be claimed by other communities and groups too. Biocultural heritage is relevant for all human societies, and it offers new ways to approach heritage, nature conservation, landscape planning and development, including the negotiation and combination of management goals.²⁴ These are predominantly organised in silos by disciplinary specific subject experts, with varying degrees of involvement from communities.

The biocultural approaches are argued to have value for global sustainability, which “relies on diversity... [and] depends on the enactment of culturally pertinent policies.”²⁵ The current lack of such approaches in policies across all scales, is causing culturally inappropriate actions which are not only unproductive but can be harmful “generating the loss of control over place, resources, knowledge and practices.”²⁶

19 The same could be also argued of approaches within other policy areas such as the historic environment which historically are ‘expert’ led and exclude communities in decision-making

20 Maffi 2018, p.9

21 Swiderska et al. 2020

22 Sajeva 2018, p.142-143

23 Again the historic environment sector is subject to a similar critique

24 Lindholm and Ekblom 2019

25 Merçon et al. 2019, p.4

26 Sterling et al. 2017 cited in Merçon et al. 2019, p.4

Features of biocultural heritage

Biocultural heritage offers “a holistic approach cross-cutting conventional boundaries between biological and heritage conservation, rural development and local participation.”²⁷

The literature review identified two possible frameworks for exploring biocultural heritage in policy and practice. The first is that presented by two Swedish academics in 2019, with five nested and interconnected elements.²⁸ The first three components are ecosystem memories, landscape memories and place-based memories. These are ways of describing and understanding the specific features of biocultural heritage. They are nested within ‘integrated landscape analysis’ which represents an ‘interdisciplinary toolbox’, comprising ways “to analyse and understand the processes shaping biocultural heritage.”²⁹ Finally, these four are nested under stewardship and change, which denotes the important role of communities in the protection and ownership of landscapes, and drawing on the reservoir of biocultural heritage to inform future land management.³⁰ This reflects more broadly how biocultural heritage initiatives require novel forms of collective action and management that bring together local communities, private sector actors, NGOs, researchers and

governments.³¹

Given the relative novelty of this academic framework, it has been applied in only a few places, and definitions of biocultural heritage in this context continue to develop.

This research did not aim to map and characterise examples of biocultural heritage, but to explore the potential of the concept for policy and practice. A second framework based on the work of the IIED with indigenous peoples offers an alternative approach which is more suited to this purpose. This approach, unlike much academic research on biocultural heritage, extends beyond intellectual interest to a more active consideration of current issues around human rights and the livelihoods of communities. These issues require urgent attention and people must be seen as active citizens, rather than passive subjects to be studied.

The IIED has been developing and working with biocultural heritage and associated concepts in practice across a variety of projects and contexts since the early 2000s.³² Their conceptualisation of biocultural heritage (Figure 1) links the biodiversity and biological and cultural heritage of indigenous peoples and local communities, from seeds to landscapes and from knowledge to spiritual values, handed down from generation to generation. It

27 Lindholm and Ekblom 2019, p.2

28 See Lindholm and Ekblom 2019, p.3

29 Lindholm and Ekblom 2019, p.4

30 Lindholm and Ekblom 2019

31 Lindholm and Ekblom 2019, p.5

32 Swiderska and Argumedo 2017

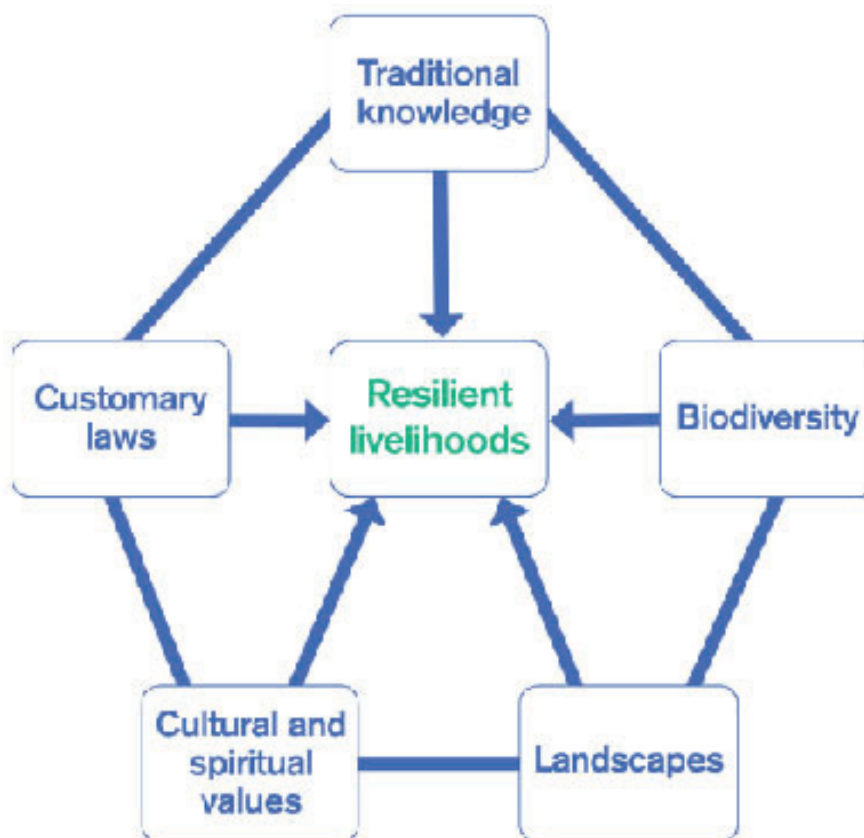


Figure 1: Diagram of biocultural heritage

Credit: Swiderska and Argumedo 2017

injects a stronger concern for people's interests including their rights, wellbeing and livelihoods:

"Biocultural heritage is vital for the wellbeing of communities and society as whole linked as it is to issues such as adaptation to climate change, sustainable use of biological diversity, sustainable agricultural practices, inclusive low carbon development, social cohesion and unique products and services."³³

The five interconnected components of biocultural heritage – biodiversity, landscapes, traditional knowledge, cultural & spiritual values, and customary

laws – create the conditions for resilient livelihoods.³⁴

In the following sections, each of these five domains is explored in more detail drawing on the international body of biocultural heritage literature reviewed for the research. As well as outlining the key arguments that have been made across the world for the value of biocultural heritage, this review introduces the few studies which have been conducted in UK settings.

Biodiversity

One of the main aims of biocultural heritage approaches is to conserve and enhance biodiversity. Whilst there has been growing understanding and recognition

³³ Swiderska and Argumedo 2017

³⁴ Swiderska 2009

of the importance of biodiversity and ecosystems globally, in their own right and as the basis for life on earth, biodiversity continues to be lost and ecosystems degraded.³⁵ The main global direct drivers of biodiversity loss and ecosystems change are climate change, invasive species, over-exploitation of natural resources, pollution, urbanisation and land-use change, and indirect drivers include particular cultures, government policies and actions, and socio-economic and demographic change.³⁶

A recent global study reports that, with very rare exceptions, biodiversity losses are not caused by human conversion or degradation of ‘untouched’ habitats, but instead by the “appropriation, colonisation and intensifying use of biodiverse cultural landscapes long shaped and sustained by prior societies.”³⁷

Traditionally, the cornerstone of conservation efforts in such areas has been the designation and management of ‘protected areas’. However, despite increasing numbers of PAs worldwide, biodiversity continues to decline.³⁸ Evidence that this decline has been less rapid on lands managed by indigenous peoples³⁹, which is approximately one quarter of the

global land area⁴⁰, indicates the value of alternative approaches to conservation.⁴¹

Figure 2 models the projected decline of biodiversity in grey, with possibilities for ‘bending the curve’ upwards reliant on more than conservation efforts alone (the green line). The green line represents an ‘integrated action’ approach, incorporating sustainable production and consumption with conservation. This reinforces the wider argument that halting or reversing loss requires a transformation of people’s roles, actions and relationships with biodiversity.⁴²

2021 will offer an opportunity to shape the content of the post-2020 Global Biodiversity Framework (GBF) that will be agreed at the 15th Conference of Parties (COP15) to the Convention on Biological Diversity (CBD). This framework is a stepping stone towards the 2050 Vision of “Living in harmony with nature”⁴³ and it is the main international mechanism for taking action on the biodiversity crisis. Calls are being made currently to ensure that the GBF is more than aspirational and leads to action.⁴⁴

The GBF includes goals and targets that are intended to halt biodiversity loss and put nature on a road to recovery by 2030. This

35 IPBES 2019

36 see IPBES <https://ipbes.net/models-drivers-biodiversity-ecosystem-change>

37 Ellis et al. 2021, p.1

38 IPBES 2019

39 This is recognised globally backed by numerous studies. For an overview, and 17 case studies from different contexts see the ICCA (2021) Territories for Life report.

40 Gilberto et al. 2021

41 This is not to suggest that protected areas are never effective, but the aims of such areas should not be prioritised over the rights of local communities and indigenous peoples where there are alternatives

42 Bouamrane et al. 2020

43 Convention on Biological Diversity 2020

44 Lim 2021

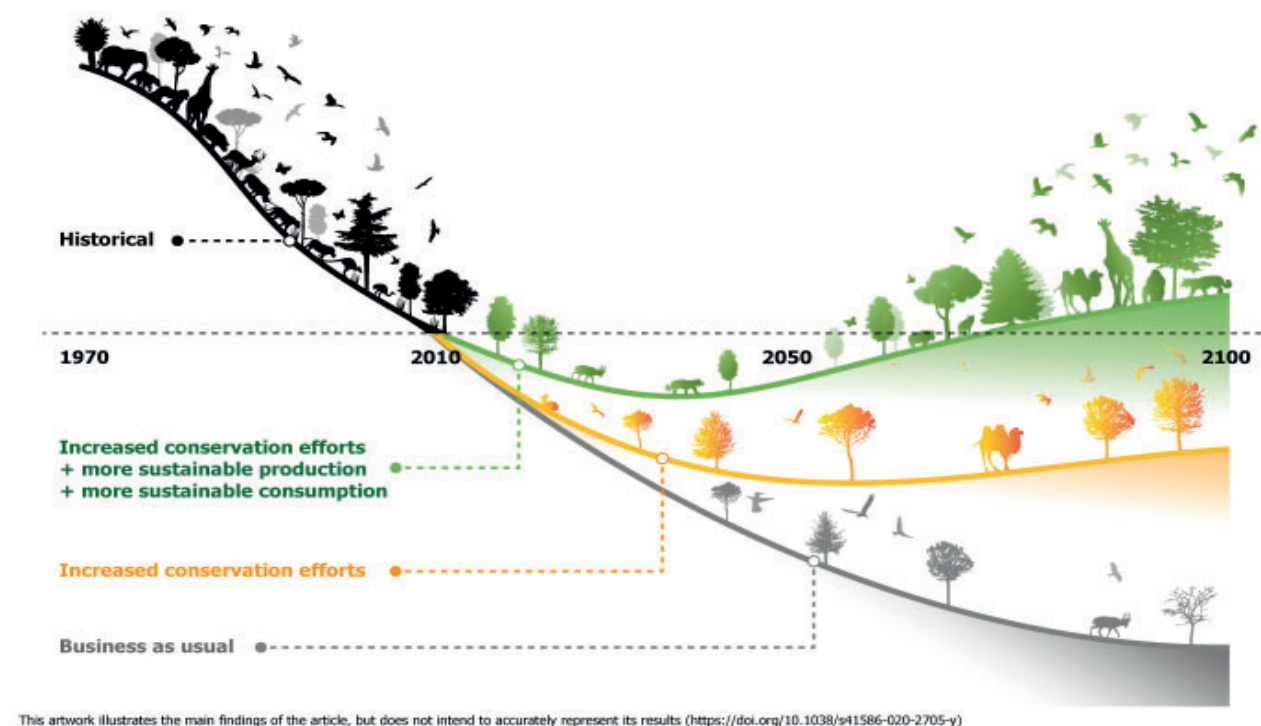


Figure 2: Bending the biodiversity curve

Credit: Adam Islaam, IIASA, Leclerc et al, *Nature* 2020 DOI: 10.1038/s41586-020-2705-y

includes the expansion of protected areas, with a target to protect 30% of the world's land by 2030.

However, an ambitious conservation agenda and an approach focused solely on biodiversity protection is not enough:

"Unless implemented with the full consent, participation and leadership of the Indigenous Peoples and local communities (IPLCs) that own or manage most of the world's biodiversity, [the expansion] could be disastrous."⁴⁵

This concern is based on historic and contemporary cases where biodiversity conservation has paid insufficient attention to culture, people's interests, wellbeing and rights. To promote these concerns in the negotiations around the post-2020

GBF, the ICCA Consortium has recently published *Territories for Life*, which shines a light on "indigenous peoples' and local communities' outsized role in nature conservation around the world."⁴⁶

Elsewhere, a biocultural approach to conservation⁴⁷ has been outlined which:

- Acknowledges conservation can have multiple objectives and stakeholders
- Recognises the importance of intergenerational planning and institutions for long-term adaptive governance
- Recognises that culture is dynamic and this shapes resource use and conservation
- Tailors interventions to the social-ecological context

45 Roe 2021

46 ICCA 2021

47 Gavin et al. 2015

- Incorporates the distinct rights and responsibilities of all parties
- Respects and incorporates different worldviews and knowledge systems into conservation planning
- Prioritises partnership and relation building for conservation outcomes

While these ideas have gained some currency they, alongside biocultural heritage, are not well-known or widely applied in conservation policy and practice globally.⁴⁸ There is still a distance to travel before this becomes a reality.

A key challenge identified across the biocultural heritage literature is the relationship between biodiversity and agriculture in conservation contexts. It is recognised that, worldwide, agricultural systems and landscapes are created, shaped and maintained by farmers and pastoralists across generations involving diverse natural resources and “locally adapted management practices.”⁴⁹ There is also increasing attention being paid internationally to the connections between traditional/cultural knowledge and practices, food security and biodiversity; this is focused, in particular, around

seed conservation and the protection of indigenous varieties. It has been argued that biodiversity is good for food security and it helps to ensure the resilience of communities⁵⁰, and also that “agricultural biodiversity is critical to cultivating ecological resilience.”⁵¹ There is therefore a significant and strategic role to be played by low-intensity agroecosystems, not least in response to climate change, to maintain ecological diversity and establish practices of sustainable land use.⁵²

However, species and ecosystems which underpin food and agriculture are declining, and the potential benefits from linking biodiversity and food security are yet to be realised in many government policies.⁵³ For example, whilst productive farming is a key element of the biocultural heritage of a place, “agricultural biodiversity is not valued” in Australian policy and by conservation practitioners.⁵⁴ In order to value agricultural biodiversity, the scope of conservation should be broadened, especially in a context where climate change and intensification make boundaries between conservation and productive agricultural landscapes irrelevant⁵⁵:

“For many European high nature

48 Maffi 2018

49 Bazile et al. 2011, p.3

50 Duthie-Kannikkatt et al. 2019

51 Graddy 2013, p.587

52 Ferrara et al. 2020

53 According to Bélanger and Pilling 2020, p.91 “Species that are richer in micro-nutrients and vitamins, or better adapted to local conditions, are often underused. Among plants for example, only nine species (sugar cane, maize, rice, wheat, potatoes, soy beans, cassava, sugar beet and oil palm) account for 67% of all crop production. There are also many ways in which the indirect contributions of biodiversity to food security could be increased, for example by protecting soils, or providing habitats for pollinators or the natural enemies of pests, in and around production systems”.

54 Bardsley et al. 2019, p.603

55 Bardsley et al. 2019

value areas, the only practicable, socially acceptable and sustainable management involves the continuation of low-intensity farming.”⁵⁶

The regeneration of agrobiodiversity has been stymied by a bias against “place-based in situ agricultural expertise” and by agricultural policy limitations which see a limited role for small-scale growers committed to biodiverse cultivation.⁵⁷ From a biocultural heritage perspective, this is not simply about recognising the role of agriculture in relation to biodiversity; it is about the ability of indigenous peoples and local communities to sustain traditional practices which are important for retaining crop and domestic animal diversity and genetic resources, and also to sustain their cultural heritage and livelihoods. Often these are at risk from biopiracy and misappropriation, as well as internal population challenges, changing land uses, and exclusionary conservation. For example, a lack of young people taking up practices and an overemphasis on particular habitat types (e.g. forest conservation priorities eradicating swidden agriculture).⁵⁸

In Scotland and Ireland, it has been argued that we need greater recognition of how depopulation, the ageing demographics of farmers and under-management put the biodiversity of the uplands at risk from under or over grazing.⁵⁹ In the

Mediterranean, it has been shown that “protected area policies restrict rural activities, such as traditional grazing, resulting in the decrease and loss of natural and biocultural diversity and the promotion of rural abandonment.”⁶⁰

In contrast, the model of Biocultural Heritage Territories (BCHT), as developed in the Potato Park and the Maize Park in Peru, a community-led approach which can be more effective, fairer and lower cost compared with protected areas. They arise from indigenous traditions of landscape management expressed in holistic territorial concepts and can be described as “bottom-up, food-centred processes” which can also “conserve rich wildlife and ecosystem services” supporting many CBD and SDG goals.⁶¹ Hence, from a biocultural heritage perspective, biodiversity goals are fused with social and economic goals founded on self-determination in order to establish ecologically sound and equitable landscape management practices.⁶²

Landscape

The biocultural heritage framework recognises the significance of biodiversity and the ongoing need to address biodiversity loss. As discussed in the previous section, it promotes a response to this crisis which involves supporting communities to sustain their knowledge

56 Ferrara et al. 2020

57 Graddy 2013, p.587

58 Shen et al. 2010

59 Costello 2020

60 Arnaiz-Schmitz et al. 2018 cited in Sarmiento-Mateos et al. 2019 p.12

61 Swiderska et al. 2020, n.p; see also Swiderska and Ryan 2020

62 Ekblom et al. 2019

and practices and to use them to deliver the sustainable management of ecosystems.

The inclusion of 'landscape' in the framework, alongside biodiversity, underlines the importance of the symbiotic relationship between people and their local environments. This links the biocultural heritage framework with a number of international conventions which see landscapes as being created through the interaction of people and nature.

The European Landscape Convention – an international instrument which covers all landscapes, both outstanding and ordinary, rural, peri-urban and urban – focuses on the character and quality of people's living environments, on sustainable development and on public participation in landscape protection, management and planning.⁶³

Globally, 'cultural landscapes' are protected through the UNESCO World Heritage Convention for the outstanding value of particular interactions between people and their environment over time.⁶⁴ As a space for conservation, cultural landscapes offer a larger scale of operation based on regional identities, shared histories and cultures as well as ecosystem boundaries. The value of these complex landscapes is often rooted in specific forms of stewardship and nature-culture interactions

which have been sustained over time.⁶⁵

They require governance arrangements that take into account this complexity and allow for change and adaptation, with a key role for local communities. In cultural landscape management, it is argued that the involvement of local communities in conservation processes is essential given their effective guardianship of landscape heritage.⁶⁶

How an understanding of the dynamic interplay of nature and culture is applied (or not) in landscape protection, management and planning is of key importance. One critique from the biocultural heritage literature is of the tendency towards trying to maintain protected habitats "as they are", which is problematic because "the idea of a relatively static landscape runs counter to histories of change."⁶⁷ Hence, "there needs to be a recognition that co-evolution will continue so that we can better manage the change that is happening."⁶⁸ Thus, many have taken to the terminology of biocultural landscapes⁶⁹, spaces "where natural and human systems coexist"⁷⁰ and co-evolve.

Biocultural heritage offers a conceptual and methodological approach to landscape research and management, with landscape being seen as "the major footprint of the

63 Rossler 2006

64 Rossler 2006

65 Mitchell et al. 2009

66 UNESCO 2003

67 Costello 2020, p.962

68 Costello 2020, p.963

69 See Hong et al. 2014

70 Hong 2014

biocultural heritage.”⁷¹ The dynamics of landscape are explained in the academic framework for biocultural heritage, with ideas of landscape memories representing “materialised human practices and ways of organising landscapes and their outcomes.”⁷² This denotes everything from soil changes, to living land-use practices and archaeology, as well as local heritage narratives. To understand the spatial and temporal linkages of biocultural heritage, requires ‘integrated landscape analysis’, which makes use of an interdisciplinary toolbox.⁷³

This approach is also being extended in biocultural heritage research to seascapes, where it has been shown that the interlinkage of nature and culture is lacking in marine heritage management.⁷⁴ Integrated analysis of landscapes and seascapes is a useful starting point for gaining greater recognition for the rights of indigenous peoples and local communities. For example, through an integrated analysis, we can show the inseparability and interrelation of landscapes and intangible cultural heritage. However, this needs to inform practical management decisions about access to resources, management and governance.⁷⁵ In this context, it becomes vital to bring out “the values that we wish to manifest and preserve.”⁷⁶

Finally, recognising that landscapes result from human interactions with nature over time does not in and of itself secure people’s rights. Hence, the discussion of people’s ‘right to landscape’:

“Landscape can be defined as a common good, can include the commons, and the collective management of lands and common pool resources institutions. Landscape is a domain in relation to which human rights can be claimed, and that landscape can be considered as a right to which human beings are entitled.”⁷⁷

In the biocultural heritage framework, people’s relationships with and rights regarding landscapes and seascapes are considered in terms of their values, knowledge, customary laws and livelihoods.

Cultural and spiritual values

The European Landscape Convention strapline ‘landscapes, our innermost being reflected’ brings to the fore the sense in which human societies cannot exist outside of cultural and spiritual values that define our worldviews and shape our interactions with nature⁷⁸; “The environment shapes livelihoods and cultural and spiritual identity”⁷⁹ and vice versa.

“The cultural importance of natural ecosystems not only consists of

71 Murray et al. 2019, p.3

72 Lindholm and Ekblom 2019, p.3

73 Ekblom et al. 2019

74 Kenterelidou and Galatsopoulou 2021

75 Konsa 2016

76 Konsa 2016, p.14

77 Menatti 2017, p.641

78 Piras 2011

79 Swiderska 2009, p.336

tangible goods and services, but also includes many often intangible, non-material or information services. These non-material and spiritual values are part of local people's cosmovision and play a pivotal role in shaping their perception of nature."⁸⁰

Different cultures reflect this in diverse ways, and what is 'valued' depends on one's socio-cultural context. Core cultural values outlined in biocultural heritage include reciprocity, balance/equilibrium and solidarity with nature and society.⁸¹ The *Territories of Life* 2021 report showcases a huge variety of cultural and spiritual values of indigenous peoples in 17 case studies. Whereas in Western societies, spirituality and materiality have come to be seen as distinct from one another, in other cultures humans, nature and the universe are often seen to be interconnected.⁸² Hence, sacred natural sites have acted to conserve nature, with cultural and spiritual values linked, for example, to preventing deforestation, ensuring local communities can benefit from forest activities.⁸³

However, whilst the particular cultural and spiritual values of indigenous peoples can support conservation, they are very often marginalised⁸⁴ and undermined by Western conservation paradigms and narrow market-focused approaches to development.⁸⁵

Moreover, whilst cultural and spiritual values can be key in driving forward nature conservation and the management of ecosystems, they are challenging to represent in external decision-making processes.⁸⁶

Promoting cultural and spiritual values is therefore central to the biocultural heritage approach as it has been developed in South America:

"Rather than pursuing Western economic models, biocultural heritage territories — such as the Potato Park and the Maize Park in Peru — foster Indigenous solidarity economies or 'biocultural economies' that promote Indigenous values of ecological stewardship, self-sufficiency, solidarity and equity."⁸⁷

For example, the main goal of biocultural heritage territories is not nature conservation, but holistic wellbeing for people and nature. This results in positive conservation outcomes for biodiversity whilst empowering people.

Cultural values have also been considered in other contexts too, with emphasis on integrating culture into conservation and ecosystems. In a Scottish study, biocultural heritage has been explored in relation to the Caledonian Forest, where the question

80 Verschuuren 2007, p.299

81 See Swiderska et al 2020; Swiderska et al 2018

82 Piras 2011

83 Piras 2011

84 Oloriz and Parlee 2020

85 Swiderska et al. 2020

86 Verschuuren 2007

87 Swiderska et al. 2020

was asked, ‘is conservation for biodiversity alone sufficient to protect cultural values associated with the forest?’⁸⁸ The study concluded that, whilst effective in protecting against destructive economic interests, narrowly-focused biodiversity conservation has a negative impact on the realisation of cultural values. Offering a range of possible scenarios for future approaches to management which better include cultural values, it is argued that:

“the way forward is to start a debate which leads to greater realisation of the diversity of cultural benefits associated with the Caledonian forest (where ‘realisation’ is defined as the simultaneous recognition of existing values and benefits and creation of new ones).”⁸⁹

In 2021, a new guide was published which focuses on establishing a more prominent role for the cultural and spiritual significance of nature within the governance and management of protected and conserved areas.⁹⁰ This is crucial because the success of these areas depends not just on environmental science, but on the support of people who value the lands and waters in question. In addition:

“the cultural and spiritual significance of nature allows us to belong to a place, establish an emotional connection, deeply experience nature and develop

a sense of attachment and care”.

At large however, the significance for people of a particular ‘natural’⁹¹ environment – and the values upon which this is built – have rarely been taken into consideration in the planning, management and governance of protected areas, in a socially just, practical and systematic manner.

Traditional knowledge

The biocultural heritage approach seeks to contribute to “efforts to mitigate and adapt to the impacts of climate change using traditional knowledge and science in community-led action research”⁹².

Traditional knowledge can be defined as place-based knowledge held by local communities.⁹³ Sometimes this is referred to as indigenous knowledge in recognition that ‘traditional’ can be taken, mistakenly, as implying that knowledge is frozen in time and irrelevant to the world today.⁹⁴ Moreover, the term indigenous knowledge is rooted in indigenous people’s assertion of their rights over traditional knowledge.

A major area of concern is the ongoing erosion of biocultural diversity and associated knowledges and practices. For example, approximately one language goes extinct every 3.5 months and 3134 of the 6901 known living languages are

88 Edwards et al 2016

89 Edwards et al. 2016, p.387

90 Verschuuren 2021

91 Or indeed ‘historic’ environment

92 Sayre et al. 2017, p.100

93 Hockings et al. 2020

94 Janke and Sentina 2017



Potato Park in Peru. Credit: CIP Headquarters, International Potato Center, licensed under CC BY-NC 2.0

endangered, which is tightly coupled with declines in biodiversity described above.⁹⁵ Hence, there has been a growth in “efforts to incorporate indigenous cultures into projects that restore habitats of declining species and resuscitate lost practices and knowledge.”⁹⁶ Indeed, it has been argued that one opportunity on the immediate horizon is to consider indigenous languages more explicitly in the post-2020 Global Biodiversity Framework.⁹⁷

More widely, “there is a growing recognition of the need to ensure that the rights of indigenous and local communities over

their traditional knowledge are respected and protected.”⁹⁸ This is important for reproducing social and cultural life, preventing misappropriation and biopiracy, and given the strong connection with natural resource use.

In areas of the world where there is strong transmission of traditional knowledge, communities are maintaining high rates of biocultural diversity, linked to specific practices and values which are also fundamental to community identity.⁹⁹

“Indigenous and local traditional knowledge of place-based biodiversity is perhaps the oldest scientific tradition on earth”¹⁰⁰.

However, with the ongoing erosion of traditional ecological knowledge, it is equally important to consider both local dynamics and external forces – and the ways they interact.¹⁰¹ It is argued that a biocultural approach is useful for discussing the deterioration of this knowledge and:

“the consequences that development policy and practices have on ecological knowledge and values for communities living in urban, rural and non-urbanised environments.”¹⁰²

As well as supporting the transmission of knowledge linked with specific practices that have existed and evolved over long periods of time, a biocultural heritage

95 Wilder et al. 2016

96 Wilder et al. 2016, p.499

97 ICCA 2021

98 Swiderska 2006, p.2

99 Duthie-Kannikkatt et al. 2019

100 Wilder et al. 2016, p.499

101 Kodirekkala 2017

102 Poole 2018, p.58, see also Rozzi 2015b; Zent 2009

approach – as part of a bioregional approach – allows for the recovery of traditional knowledge which is adapted to specific forms of life-in-place.¹⁰³ The “traditional knowledge of communities is first and foremost for subsistence and is largely held collectively, as ancestral heritage.”¹⁰⁴ Hence, a biocultural heritage approach is based on “a community-led, rights-based approach to conservation so as to ensure local indigenous peoples’ self-determination as well as ‘tenure and rights’ to agricultural biodiversity, traditional knowledge, and local ecosystem goods and services in general.”¹⁰⁵

Customary laws

Around the world, customary laws have developed which sustain traditional knowledge and genetic resources for use by communities and support ecological sustainability and social equity.¹⁰⁶

Customary rules and principles tend to be rooted in the long-term use of natural resources in a place, to be based on values of respect for nature, social equity, and harmony and to serve the common good. While customary laws vary considerably between different communities, there are strong commonalities in underlying principles or values such as equilibrium,

duality and reciprocity. It has been argued that: “such principles should form the basis for sui generis systems at all levels.”¹⁰⁷

In contrast to statute law, customary laws are customs – based in a society’s values and practices – that come, over time, to be seen as having the status and force of law.¹⁰⁸ Customary laws are foundational to endogenous development, rather than externally driven change, and “are fundamental for indigenous self-determination.”¹⁰⁹ However, such laws are often not acknowledged by governments or judicial systems, which threatens the sustainability of the cultures, knowledge, biodiversity and traditional economies to which they relate.¹¹⁰

From the perspective of biocultural heritage, the importance of customary laws lies in the ability of indigenous communities to govern livelihoods, land use and territory. It has been argued for example that:

“cultural heritage can only thrive by being actively engaged with in situ: via the living practice of Indigenous governance.”¹¹¹

On this basis, the idea of co-management has been critiqued as being rooted in colonialism and shown to subvert the inherent rights of indigenous people’s

103 Ortega Santos 2020

104 Swiderska 2006, p.2

105 Graddy 2013, p.595

106 Swiderska 2006

107 Swiderska 2009, p.340

108 IIED and Fundacion Dobbo Yala, 2007 cited in Swiderska 2009

109 Swiderska 2009, p.333

110 Swiderska 2009

111 Grey and Kuokkanen 2019, p.1

whilst reinforcing state systems.¹¹² Part of the problem has been how indigenous peoples are constructed as ‘cultures’ rather than nations¹¹³, which is inherently depoliticising. Thus, recognition of cultural diversity is not sufficient in itself; there is a need also to secure cultural and political rights.

Indigenous organisations have become increasingly concerned about the privatisation of their knowledge and bio-resources, alienation of their rights and unfair exploitation of these resources, without permission or respect of customary laws.¹¹⁴ For example, the commercial orientation of intellectual property rights undermines the customary laws protecting biodiversity and traditional knowledge which have a stronger spiritual character.¹¹⁵

Moreover, at the heart of customary law are principles of sharing, protecting from any loss of traditional knowledge and strengthening community commons.

“...systems of free sharing and exchange of resources, collective custodianship and spiritual beliefs, which underpin traditional livelihoods and customary laws, are at odds with systems that protect commercial interests and commodify traditional knowledge. Indeed, the origins of a collective biocultural heritage concept, lie in recognising

collective rather than individual rights, placing them in framework of heritage rather than property.”¹¹⁶

Customary laws tend to be held orally, allowing them to remain flexible, which is essential given the association with practices which are dynamic.¹¹⁷ However, this creates the challenge of recognising such laws externally. Additionally, communities face challenges in how external laws tend to compartmentalise the interdependent aspects of biocultural heritage. For example, there are laws and institutions addressing forests separately from those addressing agriculture, which makes a holistic form of self-determination continually challenging. This is heightened by the manner in which statutory or ‘state’ laws can conflict with the customary laws governing a community’s sustainable use of natural resources, and notions of property based on individual private rights can conflict with relational collective values. In the absence of approaches which account for communities collective biocultural heritage and integrated systems, engaging in individual and property rights-based discourses can be “disempowering and disenfranchising.”¹¹⁸

Given all this, it has been argued that there is a need for agencies to recognise and support conservation pluralism, through which a diversity of community-

112 Grey and Kuokkanen 2019

113 Grey and Kuokkanen 2019

114 Swiderska 2009

115 Swiderska 2009

116 Swiderska 2009, p.339

117 Swiderska 2009

118 Jonas et al. 2010, p.106

based approaches to conservation and the sustainable and customary use of biodiversity can be supported and made possible.¹¹⁹

“Working both within and outside of formal legal systems, Indigenous communities have consciously stayed rooted in their customary law and traditions to address the biggest challenges facing their way of life.”¹²⁰

There are lessons to be learned from approaches taken by indigenous communities surrounding customary law, including in relation to dispute resolution.¹²¹

Customary laws bring to the fore the governance of land and other resources as a commons. Commons in particular are seen as a possible way of:

“creating platforms for integrated approaches to biocultural heritage management and rural development, incorporating a range of stakeholders, from landowners, citizens, public representatives and researchers.”¹²²

This also aligns with the idea of bioregion and biocultural heritage territories as steps that can be taken towards creating new local, sustainable, self-reliant realities that flow from the bottom up.¹²³

Studies of the commons through a biocultural heritage lens, whilst linking

strongly to indigenous ancestral lands, also incorporate ideas of creating new commons. The value of creating new commons, especially in and around urban areas, has been argued for in the UK, with the suggestion of re-purposing of land for public recreation and to (re)-connect people and nature, creating new common rights.¹²⁴

A comparative study of pastoral stone enclosures as biocultural heritage in England and Galicia also focuses on commons. The Galician case is Frojam Commons, an Indigenous Community Conserved Area (ICCA) where the paradigm of state-driven parks, which can marginalise human communities within them, has been reversed.¹²⁵ The ICCA has internally defined restoration projects and goals for conservation, with the restoration of stone-built pastoral enclosures being promoted alongside other aspects of biocultural heritage. It is explained that:

“communities have implicitly or explicitly assumed a biocultural approach to conservation and have become the main actors in the preservation, restoration and protection of closely interconnected elements natural and cultural heritage (e.g., burial mounds, petroglyphs, water mills, enclosures, and trails).”¹²⁶

The English case in the Cornwall Area of Outstanding Natural Beauty highlights how

119 Jonas et al. 2010

120 Tatum 2020

121 Tatum 2020

122 Lindholm and Ekblom 2019, p.8

123 Ortega Santos 2020

124 Rodgers and Mackay 2018

125 Grove et al. 2020

126 Grove et al. 2020, p.15

this area is:

“conserved by community and voluntary groups under the provisions of the Commons Act (2006) and the Countryside Rights of Way Act (2000). Under this joint legislative protection, locals are granted rights of grazing and access to the traditional land holdings on the moor and are encouraged to be part of the decision-making process for aesthetic and management changes via local government-led initiatives.”¹²⁷

The study reinforces that, although limited in scope, surviving ‘commons’ areas in Cornwall are areas of high biodiversity. This reflects the situation in England more broadly, with around 57% of commons land designated as Sites of Special Scientific Interest, 30% as Areas of Outstanding Natural Beauty and 48% within National Parks.¹²⁸

Comparing Cornwall to Galicia shows that while the separation of formal land ownership and ‘rights of common’, in contrast with common land communities in Galicia, has sometimes led to conflict, local communities continue to display “an impressive level of initiative and activity (...) in working to establish and maintain wildlife-rich green spaces in their local environment.”¹²⁹

Hence there is a broader call for ICCAs in

England based on evidence of the:

“the leadership and engagement potential of local communities in bringing about effective conservation initiatives that bridge nature conservation, landscape planning and management, and heritage preservation on the basis of long-term biological and cultural relationships between people and their surroundings.”¹³⁰

An internationally growing body of evidence is showing the effective role of indigenous peoples and local communities in ecosystems restoration, carbon sequestration and the prevention of environmental degradation, secured through their knowledge and traditional management practices.¹³¹

However, such groups continue to be considered mostly as “passive recipients of restoration work while their cultural practices remain ignored in spite of being crucial to the preservation of biocultural heritage.”¹³² This must be challenged in favour of approaches that recognise customary values and laws are crucial for sustaining biodiversity and rural economies.

They provide the basis for:

“bottom-up traditional knowledge protection and access and benefit sharing models that strengthen biocultural heritage,

127 Grove et al. 2020, p.2

128 Foundation for Common Land and Natural England 2010

129 Newing 2012 cited in Grove et al. 2020

130 Grove et al. 2020, p.16

131 Aitchison et al. 2002

132 Reyes-García et al. 2017 cited in Grove et al. 2020, p.15

rather than threatening it.”¹³³

Resilient Livelihoods

Based on the IIED conceptualisation of biocultural heritage, the interconnection of biodiversity, landscape, cultural and spiritual values, traditional knowledge and customary laws supports resilient livelihoods. In this, resilience is rooted both in the diversity of ecosystems, natural and biological resources and in the cultures of local communities – their knowledge and practices relating to the local environment and the particular ways that they govern and behave with regard to that environment.

In the broader literature, it is argued that:
 “Understanding how to build livelihood resilience to an uncertain future is critical as livelihood systems must adapt to local and regional climatic change.”¹³⁴

Linking socio-ecological resilience and biocultural heritage highlights factors that are key to communities cultivating resilience:

- Ability to self-organise
- Adaptation and learning
- cross-scale linkages¹³⁵

Indigenous resilience takes into account traditions and sustained relationships with the land, recognising that these relationships are foundational for

indigenous peoples.¹³⁶ The threat to livelihoods is of key concern to many socio-ecological movements, whose resistance is often based on alternative strategies for a sustainable future, based on diverse, and collective forms of biocultural heritage.¹³⁷ A biocultural perspective highlights that conservation can support livelihoods. For example, in Indonesia, fish conservation has the potential to support important biocultural and livelihood relationships between human and non-human communities in peatland areas.¹³⁸

When considering the strategic expansion of conservation – in terms of where decision-makers ought to focus to maximise gains – options include being biologically or socially driven. The former places value on all biodiversity features, valuing species richness irrespective of utility. The latter places value on species important for indigenous livelihoods and species with construction, cultural, food and medicinal uses¹³⁹, which contributes to maintaining cultural diversity alongside biological diversity.

While different communities face unique difficulties in managing their livelihoods in sustainable ways, they share in common the struggle to maintain their own heritage, ecological knowledge, customs, cultural memory and values in confrontation with dominant hegemonic practices such

133 IIED, Customary Laws, <https://biocultural.iied.org/customary-laws>

134 Quandt et al. 2019, p.485

135 Duthie-Kannikkatt et al. 2019

136 Meyer 2003 cited in Duthie-Kannikkatt et al. 2019

137 Leff 2015

138 Thornton et al. 2020

139 Cámara-Leret, R., et al. 2019

as mono-linguistic education models or industrial agriculture.¹⁴⁰ Colonisation of knowledge, livelihoods and values affects communities living in a diverse range of complex socio-ecologies, including small island nations, traditional and indigenous communities, as well as farming and agrarian communities in rural and urban settings.¹⁴¹

Biocultural heritage is strongly tied to, and influences, paths to future resilience or even lack of resilience.¹⁴² Being resilient means being able to adapt, prevent and manage shocks, allowing for change over time. There are many examples globally of the benefits of adopting a biocultural perspective on resilience¹⁴³, including the IIED project on smallholder innovation for resilience which seeks to strengthen food security in the face of climate change.¹⁴⁴ A biocultural approach can create:

“sustainable local-based solutions and resilience enhancement strategies, [aligning with efforts for] mainstreaming nature-based solutions in conservation management.”¹⁴⁵

Such approaches draw attention to the feedback between biodiversity benefits and human wellbeing as they seek to address societal challenges through the restoration and revitalisation of ecosystems.¹⁴⁶

Conclusion

This chapter introduced the concept of biocultural heritage, explaining its origins and conceptual background. It introduced key works from the international literature and identified two main frameworks for understanding the concept in theory and practice.

The framework developed by the International Institute for Environment and Development (IIED) and partners, including indigenous communities, has a strong rights dimension and focuses on the key outcome of creating resilient livelihoods. It extends beyond simply recognising the role that people have played in shaping landscapes to promoting the active and ongoing participation of people in the life and governance of their places.

Drawing on the international literature, it is clear that there are potential merits in translating biocultural heritage approaches for application in the UK. Firstly, such approaches can help to integrate biodiversity and cultural heritage, bringing local communities into discussions around nature conservation. Secondly, biocultural heritage increases the visibility of people’s knowledge, values, wellbeing and livelihoods in policies and actions relating to nature and promotes empowerment, rights and responsibilities in such contexts.

140 Poole 2018; Escobar 2011; Maffi and Woodley 2012

141 Poole 2018

142 Lindholm and Ekblom 2019

143 See Hirons et al. 2018; Sayre et al. 2017; Duthie-Kannikkatt et al. 2019

144 IIED, SIFOR project, <https://www.iied.org/smallholder-innovation-for-resilience-sifor>

145 Lee et al. 2020, p.12

146 Lee et al. 2020

The UK, like the rest of the world, is facing major challenges including biodiversity and cultural loss, climate change, and the need to secure resilient livelihoods and rights for all people.

Internally in the UK, there are communities who have been historically excluded by the dominant approaches to conservation, which have traditionally not allowed much room for questions of cultural heritage, rights and livelihoods.¹⁴⁷ Exclusion can be implicit or explicit, as part of ‘territorialisation’ strategies pursued by both state-led conservation and conservation involving non-governmental organisations.¹⁴⁸ It can also be embedded in narratives of ‘re-wilding’ and within ‘green grabbing’, the latter being central to forms of neo-liberal conservation¹⁴⁹, and to the emergence of new ‘green lairds’ (i.e. wealthy individuals and companies who are buying up land to pursue ecological projects, offset carbon emissions and/or take advantage of public subsidies for green initiatives).¹⁵⁰

However, this does not have to be the case. Biocultural heritage potentially offers a new perspective that could deliver for both people and nature across the UK moving forwards. Subsequent chapters will explore this potential in greater depth, beginning in the next chapter with an analysis of the alignment between existing policies in the different countries of the UK and the biocultural heritage framework.

147 e.g. in the Scottish context see Russell 2021

148 see Adams et al. 2014

149 see Apostolopoulou and Adams 2015

150 See Glenn 2021

Chapter 3

Biocultural Heritage and UK Policy



This chapter presents an analysis of the potential alignment between the biocultural heritage framework and existing policies in the UK. Each element of the IIED's biocultural heritage framework (see Chapter 2) is explored in turn.

Whilst there have been a handful of studies that have used the term biocultural heritage in UK and other European contexts, it has largely been applied elsewhere in the world. To explore the potential for linking between the different elements of the biocultural heritage framework and cognate concepts in the UK, a review was carried out of policies and other government documents from the four countries of the UK (see Appendix 1). The specific focus for this review was the historic environment and nature conservation sectors, as the two policy sectors which are arguably most closely aligned to ideas of biocultural heritage, drawing as they do on concepts of biodiversity, landscape and cultural heritage. Alongside the documentary review, interviews were conducted with key stakeholder organisations for historic environment and nature conservation in each of the four countries.

In the UK, nature conservation is largely devolved to the four countries:

“It is driven by a wide range of policies, legislation and agreements, and delivered by a range of bodies, from the statutory, voluntary, academic and business sectors. England, Scotland, Wales and Northern Ireland each have their own country-level

strategies for biodiversity and the environment. Obligations arising from international treaties and conventions are the responsibility of the UK Government, with the devolved administrations responsible for implementing obligations that concern devolved matters.”¹

Likewise, each country has its own sets of historic environment, cultural heritage and language policies and laws.

One of the challenges in exploring biocultural heritage in the UK is the sectoralisation of ‘nature’ and ‘culture’ into different institutions, policies and laws. This made it difficult, for instance, to find interviewees who would be well-placed to discuss the potential applicability of biocultural heritage in its totality, sitting as it does across these sectors.

None of the interviewees had previously been familiar with the concept. During each interview, the discussion focused on key points of potential resonance in relation to the work of the interviewee's organisation and their role. It should be noted that the discussions with each organisation were exploratory, time-limited and covered one person's perspective from large organisations with multiple workstreams.

Hence, the findings presented here should not be taken as an exhaustive assessment, but rather an overview and an initial exploration of the potential value of the biocultural heritage framework in UK settings. Future research should further

1 JNCC <https://jncc.gov.uk/our-role/the-uk/>

enhance and build on this work with a focus on looking at each national context in more depth.

Biodiversity

Biodiversity policies and strategies across the UK are predominantly rooted in the ecosystems approach, which stresses the need to look at maintaining the functionality of ecosystems as key to protecting biodiversity. This is embedded in the current international Convention on Biological Diversity and the related Aichi targets, which each of the four nations report on. However, despite significant attention having been paid to biodiversity in all four countries:

“In developing the post 2020 framework for the CBD’s Strategic Plan to 2050 it has been acknowledged that very few of the 2020 Aichi targets have been achieved and that biodiversity is still in decline.”²

“The abundance and distribution of the UK’s species has, on average, declined since 1970 and many metrics suggest this decline has continued in the most recent decade. There has been no let-up in the net loss of nature in the UK.”³

The English national body for the natural environment, Natural England, is prioritising not just nature protection but nature recovery:

“We can no longer simply protect Nature

from harm through special sites and reserves though they remain important. We must also create new spaces for Nature, where people can experience the benefits of a healthy environment.”⁴

This recognises that much biodiversity and many of our ecosystems lie outside of Protected Areas. There is therefore a need to promote approaches which increase biodiversity within lands and seas that also provide benefits to people.⁵

The UK Government’s 25 Year Environment Plan states:

“We will support nature’s recovery and restore losses suffered over the past 50 years. We will develop a strategy for nature to tackle biodiversity loss, develop a Nature Recovery Network to complement and connect our best wildlife sites, and provide opportunities for species conservation and the reintroduction of native species. We will also explore introducing conservation covenants. These actions will help us create a healthier and richer natural environment.”⁶

In its work to promote sustainable development, Natural England seeks to “ensure that all developments provide measurably more biodiversity than before they were built by taking a Biodiversity Net Gain approach to all our advice.”

Under their programme for connecting people with nature, they argue that: “To

2 Welsh Government 2021

3 Hayhow et al. 2019

4 Natural England 2020

5 Dasgupta 2021

6 UK Government 2018

engage everyone in the fight against the climate and biodiversity crises, we need to foster deep connections with Nature.”⁷ As one interviewee put it:

“When you’re dealing with the twin crises of climate change and biodiversity decline, actually at the heart of that are people in terms of their activities, but also how people connect and relate to nature in turn influences whether or not they are interested in taking action. [...] the fact that we’ve still got declining biodiversity and problems with climate change means that perhaps that traditional stuff has not necessarily worked if you are trying to reverse that. So, therefore, is it because we haven’t adequately helped to address people’s lives and livelihoods properly? And do people see it more as a threat than actually an opportunity to tackle some of those challenges together and adapt?”

(Amanda Craig, Director of Connecting People with Nature, Natural England)

In Wales, biodiversity is embedded in the *Wellbeing of Future Generations Act*⁸, which has seven wellbeing goals. One of these is a resilient Wales i.e.:

“A nation which maintains and enhances

a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change.”

However, at present, it is recognised by Natural Resources Wales that “Biodiversity is declining and no ecosystems in Wales can be said to have all the attributes of resilience.”⁹

In terms of the link between biodiversity and agriculture, which is explicit and prominent in approaches to biocultural heritage, each of the UK countries does address this, in different ways. This is perhaps unsurprising given the extent to which agriculture dominates land use (over c.72% of the UK’s land area).¹⁰

For example:

“With around 70% of land in Northern Ireland devoted to agricultural activities, there is tremendous scope for influencing biodiversity and ecosystem services in a beneficial way through agricultural management. Agriculture is one of the cornerstones of the Northern Ireland economy, and ensuring conservation of the biodiversity that exists on agricultural land through sustainable management is essential to the continued

7 Natural England 2020

8 The Wellbeing of Future Generations (Wales) Act 2015 aims to further the economic, social, environmental and cultural wellbeing of the people of Wales, both present and future generations. The Act sets out a series of Wellbeing Goals, and places a duty on all public bodies, to contribute to the achievement of those goals.

9 Natural Resources Wales

10 Hayhow et al. 2019

robustness of this vital industry.”¹¹

However, while there is a point of potential alignment here, the ways in which this connection between biodiversity and agriculture is addressed differ from those suggested by biocultural heritage approaches. For example, the Northern Ireland Biodiversity Strategy supports ‘sustainable intensification’:

“The strategy will aim to identify where agricultural output can be increased without damaging ecosystem services delivery, where enhanced biodiversity can be achieved while sustaining agricultural output and, crucially, where improving agricultural output and environmental outcomes can both be achieved.”¹²

The ideas surrounding agrobiodiversity outlined in Chapter 2 are somewhat at odds with the intensive systems of agriculture found in some parts of the UK.

“Agricultural productivity, linked to the intensification of land management and the decline in farmland nature, is still increasing, although with government funding some farmers have adopted wildlife-friendly farming.”¹³

The realisation of a biocultural heritage approach may require the transformation of land use and methods of agriculture, in order to make them sustainable both for people and for nature. However, this is challenging to implement, as an interviewee explained in the Scottish context:

“We do do quite a lot of work around agriculture and shaping policy and practice. We obviously have a narrow interest in that in terms of the environment, but we increasingly make the point that you can’t separate the two. I guess the challenge in there is that the economics of agriculture creates poor outcomes in terms of livelihoods actually, but also the environment at the moment, and how you get off that treadmill is quite a complicated and a big issue. And then farmers do things they don’t want to, for themselves, because they have got no option economically. So, the system is really fragile, but the more we can do to re-orientate that system to support resilience for the economy, economic livelihoods, but also for nature, the better.”

(Peter Rawcliffe, Head of People and Places Activity, NatureScot)

Understanding the next steps for transforming agriculture to support biodiversity, and livelihoods, requires acknowledging the historical context of policy and economic change that has led up to today:

“After the Second World War, if you take sheep numbers for example, they were really quite low actually, and the government then really incentivised agricultural production, because it needed to after the war,

11 DAERA 2015

12 Department of Environment 2015

13 Hayhow et al. 2019

so then landowners were paid for the number of sheep that they would have on the hills, headage payments. Then it was realised that simply wasn't working, we needed to be able to shift into a more sustainable system, so then people were paid to take their sheep off."

(Amanda Craig, Director of Connecting People With Nature, Natural England)

The *Dasgupta Review*, focusing on the economics of biodiversity, puts it bluntly, stating that "modern agriculture vigorously eliminates species diversity both above ground and in the soil beneath."¹⁴ This brings to the fore the underpinning economic drivers, through systems of subsidy and policy change over time which have created the current agricultural system.

With the UK leaving the EU, there is an opportunity to reform current systems. Hence, the statement from the Welsh natural environment body, National Resources Wales, that they will:

"Encourage the development of a funding framework for agriculture and forestry post-EU exit that has at its core the maintenance and enhancement of biodiversity and ecosystem resilience and provide support and expert advice to the Welsh Government to enable that to happen."¹⁵

With any new approaches to agriculture

based on enhancing biodiversity, consideration should be given to the remaining smaller-scale and less intensive agricultural practices which are found in different parts of the UK. For example, in Scotland, the crofting system of smallholding tenure has been linked to the creation of land with 'high nature value':

"Traditional crofting practices have been closely related to conservation of the environment. This remains the case today with crofting providing increasingly important benefits for a number of declining wildlife species, including the corncrake and the lapwing."¹⁶

"Trends vary across the UK countries and generally farmland birds are faring better in Scotland, where on average they have increased since the 1990s, than elsewhere."¹⁷

Hence, there are lessons to be learned from within the UK to inform new approaches to agriculture.

That being said, smallholding systems such as crofting in Scotland have not been immune to the same dynamics described above, with subsidies incentivising changing practices that have led to poorer outcomes for people and nature. Historically, it must also be recognised that generating a livelihood from a croft has always been problematic, and new systems for agriculture that enhance biodiversity should recognise where changes are

¹⁴ Dasgupta 2021, .p.71

¹⁵ Natural Resources Wales 2018

¹⁶ NatureScot

¹⁷ Hayhow et al. 2019

needed to improve outcomes not just for biodiversity but for people's livelihoods and wellbeing. This could be based on wider conceptualisations of crofting as producing public and community benefits, such as viewing crofts as 'spaces of wellbeing'.¹⁸

Overall, it is clear that significant attention is being paid to biodiversity in the UK, and that there is already recognition for certain positive links between biodiversity, livelihoods (gained through certain types of farming) and people's wellbeing. However, it is also clear that there are some areas of misalignment and absence when UK biodiversity policies are compared, in isolation, with the biocultural heritage framework.

The connection between agriculture and biodiversity in the UK is problematic and complex; some approaches to farming are environmentally sustainable, while others are not, and there is a recognised need to transform much of the current approach in order to achieve a balance between food production and healthy ecosystems.

However, there are lessons to be learned from within the UK itself, where there are examples of practices which are more closely related to ideas of biocultural heritage and which enhance and sustain biodiversity, rather than undermine it.

When it comes to the other aspects of the biocultural heritage framework, beyond livelihoods, UK biodiversity policies appear

to make few links between declining biological diversity and cultural diversity. The links could be strengthened, especially where there is a co-occurrence of the two in specific regions where it is important to maintain both forms of diversity and integrated strategies could be developed to conserve species and languages¹⁹ such as Scottish Gaelic, Welsh, and Irish. Languages in the UK are not exempt from the cultural loss occurring at the global scale, with Cornish one of thousands of languages to have died out in the last few centuries.²⁰ There are opportunities for much greater integration across initiatives to support languages under threat in the UK with biodiversity conservation, particularly through place-based approaches to designations which would be well-placed to recognise the interconnections of biological and cultural diversity.

This challenge of more integrated approaches also speaks to the challenge of accommodating the range of interests when working at the landscape scale. For example, the Biodiversity Strategy for Northern Ireland states:

"Managing at the landscape scale is especially difficult given the conflicting demands on the land and the need to influence landowners, people holding a variety of rights, local authorities, and many others."²¹

The challenges are significant, reflecting the history and traditions of conservation

18 see Russell et al. 2021

19 Gorenflo et al. 2012

20 Bliss 2020

21 DAERA 2015

in the UK and the realities of taking a more holistic and participatory approach to decision-making. However, there seems to be an increasing will to address and overcome them, and a view that ‘landscape’ provides a good framework within which to do that.

The term ‘landscape’ has different meanings in this context, and it is important to recognise this and be clear about how the term is being used.

In nature conservation contexts, ‘landscape’ refers to a scale of working. For example, Natural England have said that:

“Working at a landscape scale involves taking a bold step away from trying to ‘achieve everything in every place’, and prioritising, both between areas and within areas. Our advisory effort will focus on enabling the big picture – the macro plan – not on delivering many micro plans. Our smaller-scale objectives will need to be considered within the context of our landscape-scale ambition – will they substantially contribute to a rich, healthy and resilient landscape / marine ecosystem, or are they more marginal?”²²

In Wales, “ramping up landscape scale nature projects” has been identified as an urgent short-term action within the Nature Recovery Action Plan.²³

However, as discussed in Chapter 2, there is another usage of the term ‘landscape’ which is not as a term for a particular scale

of conservation work but as a term which expresses the importance of human-nature interactions for understanding the character of a place. This is the use of the term that we see, for example, in the aims of the Valleys Regional Park initiative in Wales, which are to:

“celebrate the Valleys’ vast and beautiful landscape by combining nature with community spirit and economic development. Using the natural landscape to educate people about climate issues, while ensuring livelihoods are maintained and skills are taught across the area, the project has helped those on the ground in Wales think long-term, collaborate with stakeholders and involve communities to get the most out of the unique and valuable Welsh landscape.”²⁴

It is this definition of landscape – as the ‘footprint’ of people’s interactions with the local environment – and the policies associated with it which is most relevant here, and to which we now turn.

Landscape

The links between biodiversity, people’s livelihoods and cultures are addressed more clearly in landscape policies, which have been widely promoted in the UK within the overall framework provided by the European Landscape Convention.

Landscape policies in different parts of the UK are, broadly speaking, aligned with the

22 Natural England 2016

23 Natural Resources Wales 2020

24 Future Generations Commissioner of Wales

concept of biocultural heritage, especially in promoting integration across the ‘nature-culture divide’ and cross-sectoral working between nature conservation and historic environment/cultural heritage organisations.

For example, in interviews, representatives of the Scottish public bodies NatureScot and Historic Environment Scotland pinpointed landscape as an area of existing policy that resonates with the biocultural heritage concept. The two organisations have adopted a joint statement on landscape, based on the European Landscape Convention, with five key principles (see Box 1). The shared vision states:

“All Scotland’s landscapes are vibrant and resilient. They realise their potential to inspire and benefit everyone. They are positively managed as a vital asset in tackling climate change. They continue to provide a strong sense of place and identity, connecting the past with the present and people with nature, and fostering wellbeing and prosperity.”²⁵

And the potential links with biocultural heritage are also evident in *Our Place in Time*, the national strategy for the historic environment (which includes landscapes):

“The values of the historic environment lie in defining and enhancing that connection of people to a place. [...] The sense of place and strong cultural identity provided by the historic environment plays a crucial part in

the sustainability of communities.”²⁶

Landscape, then, is perceived as a tangible way to work with ideas of human-environment interaction from both historic environment and nature conservation perspectives. This is an area of policy that provides a solid starting point from which to adapt and apply the biocultural heritage framework in UK contexts.

Box 1: Scotland Joint Landscape Statement

All landscapes – Every landscape is important because everyone has a right to live in and enjoy the benefits of vibrant surroundings.

Shared landscapes – Scotland’s landscapes are a common asset and everyone has rights and responsibilities for looking after them.

Your landscapes – People and communities should always be involved in decisions that shape their landscapes.

Understanding landscapes – Decisions need to be based on understanding and awareness of both the cultural and natural dimensions of our landscapes.

Dynamic landscapes – Landscapes will continue to change but change needs to be informed and managed to ensure they remain resilient.

However, there are some recognised challenges that need to be taken into account here (and which a biocultural heritage approach might help to address). A recent report²⁷ on landscape (and historic environment and nature conservation) policies in Scotland has identified a

25 NatureScot and Historic Environment Scotland 2019

26 Historic Environment Scotland 2020

27 Dalglish 2018

number of issues in putting these policies into practice. For example, in principle, existing landscape policies aim for a holistic approach to the local environment, and yet in practice the sectoral approach to designation results in the dissection of landscapes and places into parts.

Also, the stated openness in policies towards diverse views on defining a place is in tension with the reality that a narrow range of values tends to be privileged over others. For example, the dominance of ideas of ‘wild’ land in Scottish Highland landscapes, where alternative values based on human interaction with landscapes are marginalised.²⁸

The promotion of participation as a right is there in principle in various policies and, yet, there is a tendency in practice to see landscape matters as the preserve of professionals and institutions. The report concludes that there is a “participation deficit” which needs to be addressed to deliver sustainable development and fulfil human rights.²⁹ The deficit relates to the lack of consideration for community voices; people are locked out of decisions about land, a problem which is particularly acute in certain areas of Scotland.

Likewise in England, the recent *Landscapes Review* highlighted that the system of designations is fragmented, marginalised and misunderstood and that boards of National Parks are “deeply unrepresentative of England’s diverse communities.”³⁰

The Review advocated a new ‘National Landscape’ designation, alongside wider landscape protection, underpinned by new ways of working that are less fragmented.³¹

These challenges – such as the ongoing influence of deep-seated, siloed structures and ways of working – were discussed in the research interviews. For example:

“In addition to that joint statement, there’s a supporting action plan where we have a variety of different tasks and activities which we work with NatureScot on. Obviously, landscape management and change of that landscape is a key area of commonality in terms of our engagement and activity. But sometimes we come from slightly different perspectives, I would say, and that’s where that marrying which is [promoted by biocultural heritage] comes into play”.

(Graham Saunders, Head of Heritage Management Policy, Historic Environment Scotland).

Tension in perspectives can relate, for example, to the differing timescales focused on by nature conservation compared with historic environment conservation. For example, the former adopts a shorter-term view when compared with the multi-generational and even millennial timescales addressed by the latter. Biocultural heritage may provide a useful concept in seeking to bring these

28 see Russell 2021

29 Dalglish 2018

30 Glover 2019

31 Glover 2019

perspectives together for a more holistic and cohesive approach.

Natural England have said:

“We will need to use all our existing delivery tools in a more integrated way to advise and enable local delivery of... plans. We can’t allow siloed pursuit of single objectives. This is a very significant change in the way we operate and our frame of reference.”³²

Northern Ireland has a *Landscape Charter* which outlines 10 affirmations for landscape and 6 guiding principles for decision-making.³³ The 6 guiding principles are roughly equivalent to the principles in Scotland, they state:

- All landscapes matter and each of us has the right to derive the benefits of those places that matter to us.
- Each of us respects this in all places even when they are not our own because our landscapes are a shared asset for which we have to exercise care and responsibility.
- Each distinctive sense of place collectively adds more value to the variety and uniqueness of Northern Ireland’s landscape than the sum of each part.
- Change is continuous but we can manage it by using evidence to inform policy and decisions that respect and enhance the character and value of our landscapes.

- Transparency and communication about how the diversity, distinctness, history and character of our landscapes are considered engenders awareness and confidence.
- Each of us is responsible and empowered to shape the future of our landscapes in the actions and decisions taken now by us and others on policy and development.

However, in 2015 it was argued that approaches to landscape could be strengthened with the introduction of a Land Strategy, to ensure land is managed for:

“the benefit of people’s wellbeing and prosperity, respecting the views of communities, groups and individuals, striving for environmental excellence, and making best use of its multi-functionality.”³⁴

This strategy, by sitting above a suite of sectoral policies could “provide a framework to manage conflicting policy priorities and balance competing demands on land.”³⁵ This echoes some of the main tenets of the biocultural heritage approach, but it has been recognised that the implementation of a strategy with these aspirations would not be easy. In part, this is because of the history of conservation here and a:

“deep suspicion about any form of landscape protection, with widespread

32 Natural England 2016

33 DAERA 2014 - see also the Scottish Landscape Charter <https://www.nature.scot/professional-advice/landscape/scotlands-landscape-charter>

34 Northern Ireland Land Matters Taskforce 2015, p.6

35 Northern Ireland Land Matters Taskforce 2015

antipathy to the introduction of National Parks and statutory management of Areas of Outstanding Natural Beauty.”³⁶

Alongside land strategies and landscape policies, notions of place and place-making are important interrelated areas of policy. Whilst beyond the remit of this research, there are positive developments in emerging approaches to planning that are community-led and require holistic, integrated working.

For example, Natural England’s shared plans for places:

“...reflects a combination of landscape scale working, co-creating solutions with other people, making the environment relevant to people’s lives, and looking over the longer term. We will be creative in partnerships, on land and at sea, to identify opportunities, build agreement around large scale outcomes, collaborate over funds and funding mechanisms, and apply an ecosystem approach to work together to achieve landscape-scale environmental outcomes. The shift towards working at a landscape scale is ultimately dependent on our having the skills to be effective at this scale.”³⁷

It is also promising that such approaches recognise the seascape, which has been pinpointed as an area which is often neglected in relation to biocultural heritage.

In Scotland, a new measure – community-

led Local Place Plans – are intended to empower communities to “play a proactive role in defining the future of their place.”³⁸ They offer scope for solutions-focused approaches to shape land use planning policy, tackling the climate emergency and deliver on health and wellbeing.

From a biocultural heritage perspective, the key to achieving integrated landscape approaches and policies is to link biodiversity with people’s historical contributions to landscape, their present-day values and local knowledge, and the rights of local communities in relation to decisions which affect them regarding the protection, management and development of the local environment. Current landscape policies in the different parts of the UK address many of these concerns but, as discussed above, there are problems in realising the aspirations of policy in practice, for example in relation to participation and to the integration of cultural and natural concerns.

There are also gaps in coverage, especially in the case of seascapes which have largely been excluded from the developments described above. Ideas of ‘marine heritage’ are largely confined to protecting archaeological materials³⁹ and marine (nature) conservation focuses on protecting particular priority species and habitats, with less regard to broader cultural interactions with seascapes over time.

36 Northern Ireland Land Matters Taskforce 2015

37 Natural England 2016

38 Scottish Government, 2021: <https://www.gov.scot/publications/local-place-plans-guide-literature-review-final-report/>

39 see Dept for Communities 2019



Use of seaweed as fertiliser in coastal community growing project on croft land, Scotland. Credit: Zoe Russell

Adapting and promoting the biocultural heritage framework in UK contexts could potentially help to build on the progress that has already been made, in particular by widening the scope of cultural issues that are brought into landscape decisions and prioritising more strongly people's rights to landscape and their participation in landscape governance. Moreover, a biocultural heritage approach reinforces the collective rights of peoples to cultural heritage, biodiversity and landscape.

Cultural and Spiritual Values

In the UK, ideas of cultural and spiritual values are more commonly referenced in policies related to cultural heritage and the historic environment than those for nature conservation.

A recent paper analysing policies in the different parts of the UK and the national historic environment bodies (Cadw,

Historic England, Historic Environment Scotland and the Dept. of Environment in Northern Ireland), found "an increasing emphasis on significance, social value and public participation."⁴⁰ For example, Historic England's Conservation Principles follow the Burra Charter and emphasise how managing heritage should begin with understanding its significance and communal values (including symbolic, social and spiritual values).

The Principles explain:

"The social values of places are not always clearly recognised by those who share them, and may only be articulated when the future of a place is threatened. They may relate to an activity that is associated with the place, rather than with its physical fabric."⁴¹

However, it is concluded that, in practice, social and communal values tend to be neglected when it comes to designating, managing and conserving heritage in the UK⁴². Where there are exceptions, these tended to be due to public appeals rather than action on the part of the relevant institutions. This is partly because:

"The complex relationship between tangible and intangible aspects of heritage in the domain of social value is a particular challenge in European contexts where the long-standing preoccupation with tangible heritage continues to be relatively entrenched."⁴³

In contrast to some of the contexts

40 Jones 2017

41 Historic England 2008

42 Jones 2017

43 Jones 2017, p.36

explored in relation to biocultural heritage in Chapter 2, there is a stronger disconnect in the UK between the spiritual and the material aspects of cultural heritage, the tangible and intangible. This was reflected in discussions with interviewees with a cultural heritage background, who tended to see things from the perspective of built/tangible heritage or historic environment and had less to say about aspects of intangible heritage such as language and cultural and spiritual values.

That said, some interviewees did raise interesting points in this area. For example:

“Here we’ve been kind of fortunate in some ways because there’s very strong superstitious beliefs in some parts of the country still around. For example, fairies and fairy trees and things. And in those parts of the County, people tend to leave forts alone [because of their supernatural associations]. But we do see a dwindling in that and consequently the sites have been damaged as a result... I suppose the folk culture has helped to protect some heritage assets and as that dwindles there are adverse impacts come with it.”

(Liam McQuillan, Senior Archaeologist, Historic Environment Division, Dept. for Communities)

The general lack of attention to cultural and spiritual values is also true of the nature conservation context where, while there has been increasing emphasis on bringing in cultural values, these are less prominent in terms of overall frameworks and decision-

making:

“The cultural heritage of Scotland includes quite a lot of our traditions associated with the use of land and nature, and that isn’t really picked up well between the two sorts of lead organisations [i.e., natural environment and historic environment institutions]. It’s there, and we recognise it, but it doesn’t really influence what we do and how we prioritise.”

(Peter Rawcliffe, Head of People and Places Activity, NatureScot)

This should not be surprising given the institutional disconnect between nature and culture discussed above. Consideration of values was also discussed in relation the values held by landowners, and communities, and their relationships:

“If you have a good landowner who has a good understanding of the value of the historic environment and the cultural relevance of it, then you can get a well conserved historic environment and a well-supported cultural environment as well. But also, if you have a poor landowner, they could do the opposite. So, it depends, where that landowner comes from, what values they have but also, where there are landowners who have a variety of different tenants ... that relationship between the tenant and the landowner ... it’s an incredibly complex, often personal relationship which comes into play. Albeit we might have the greatest objectives

and policies ... it's down to those individual relationships I would say, and what their personal values are."

(Graham Saunders, Head of Heritage Management Policy, Historic Environment Scotland)

In the language of the biocultural heritage framework, explicit attention is paid to 'spiritual values' as well as 'cultural values' but, in UK contexts, the terminology of 'cultural values' is more prominent, especially in relation to ecosystem services (although this might be taken to include spiritual values, the difference being a matter of relative emphasis).

Cultural values have been a strong aspect of some of the work being undertaken in parts of England in relation to ecosystem services, for example in the North Devon Nature Improvement Area.⁴⁴

More generally, although 'cultural values' are not necessarily strongly embedded in policy and practice, there is a strong appreciation of cognate issues such as how people are connected to nature. The language that is used in policy and in the relevant disciplines might not necessarily refer explicitly to cultural and spiritual values then, but it does draw on some of the same notions such as connection to nature and sense of place as well as identity and community livelihoods:

"Many people have a deep-rooted personal and emotional connection to nature or to a particular place or part of the natural world... These

connections, though we may not always be consciously aware of them, are part of our sense of place and our history and are at the heart of the cultural identity of Wales: they are our natural heritage. ... The natural environment provides employment and sustains communities in all parts of Wales. Thousands of people work in farming, forestry and fisheries, all of which depend on natural resources."⁴⁵

However, there can be tensions between different people's connections to nature and place, such as where someone's livelihood might have a negative impact on other possible connections to and forms of biocultural heritage in that landscape.

There is no one approach to 'connecting people with nature' and organisations have been responding to calls to improve access to nature and landscapes for wellbeing:

"Connecting people with nature fits into health and wellbeing, community engagement and social inclusion ... and that's been developing rapidly over the last 12 months because of Covid we've had all sorts of different things that have been going on around that, and a lot of evidence has come through about the influence of the environment on people and also the stark inequalities ... of where people live and where they can gain access to the environment."

(Amanda Craig, Director of Connecting People With Nature, Natural England).

44 Fish et al. 2016

45 Natural Resources Wales 2018

How people are currently connected to nature in the UK will vary, and organisations are considering ways in which to engage with the public on that basis:

“This is a really important window of how we engage people with nature, and if they’re connected to nature already and we have to start from where people are from. So, I guess if you look at it from the perspective of biocultural heritage, we would say there’s a spectrum of people who are very connected to nature in terms of living off the land and there’s people who are less connected to nature than those living off the land. But of course, it’s more complicated than that The people who live off the land are also disconnected from nature in different ways, as is the population as a whole. It’s a really complex area.”

(Peter Rawcliffe, Head of People and Nature Activity, NatureScot)

Thus, a key conclusion is that in translating the biocultural heritage framework to be applicable in the UK, account would need to be taken of a spectrum of connections between people and nature. This could be better established with a stronger sense of the cultural values that underpin people’s perceptions of and interactions with nature, which can include existing values and the opportunities for developing new ones. An important part of this must be the ways in which cultural values and attitudes to nature are linked with economic and social

values.

“How much of the cultural side is then driven by government incentives and policies of the time, and we’ve had quite a few. So, you know drainage acts, where some of our great upland moors were drained, now we’re plugging those drains and trying to restore the uplands, and the carbon our memories become quite short term, don’t they?”

(Amanda Craig, Director of Connecting People With Nature, Natural England)

This highlights the point that any application of the biocultural heritage framework in the UK would need to account not just for cultural, social and economic values which have proved to be beneficial for people and for nature, but also for values which have produced negative outcomes and must then be challenged and changed.

The idea that we have also inherited unsustainable values from the past, underpinned for example by specific economic policies, is captured in arguments for change in the ways we manage use the land and seas:

“Sustainable food production is at the heart of [a sustainable] future [for Welsh agriculture], but it is also about supporting changes to farming practice to respond to the climate emergency, the decline of biodiversity and the public health issues associated with emissions from agriculture.” ⁴⁶

“Unsustainable fishing practices do not just deplete fish stocks; they threaten the environment and marine ecology and can also have an impact on coastal communities. While overfishing may provide immediate benefits in the form of increased income, it limits the availability of resources in the longer term and thereby jeopardises the livelihood of fishers. It also undermines the resilience of our marine ecosystem and its ability to support sustainable fisheries in the future.”⁴⁷

This chimes with arguments around the need for new economic systems and approaches that are based on sustainability, such as economics for biodiversity⁴⁸.

However, from a biocultural heritage perspective this must be about more than technical solutions and new kinds of economics such as natural capital and payments for ecosystem services, which can be reductionist in nature. There must be a broader approach which situates economic questions in relation not just to environmental sustainability but also to cultural and social sustainability. For example:

“there’s a cultural dimension to it, it’s not just economics, the systems interplay anyway, you’ll only get a good economic system if society wants a good economic system and at the moment we are out of kilter. So yes, economics is really important, but you also need to engage with

society and with that discussion about what nature actually means for people. And is it important or not and in what ways is it important?”

(Peter Rawcliffe, Head of People and Places Activity, NatureScot).

Similarly, in Wales:

“What we want is integrated approaches to these things. You know it’s not just about natural and cultural, It’s about natural, cultural, social and economic. And all these things should be integrated.”

(Ian Halfpenney, Senior Inspector, Rural Land Use Policy, Cadw).

Given all of the above, in UK contexts there are reasons to suggest that the ‘cultural and spiritual values’ element of the biocultural heritage framework should be amended somewhat. The established language in the UK is around ‘cultural values’ (which subsumes spiritual values) and, to represent the range of values that are relevant here and to emphasise the need to integrate and balance economic with other concerns, this can be expanded to cultural, social and economic values as they relate to local ecosystems and environments.

Traditional Knowledge

The Convention on Biological Diversity promotes an approach that considers “all forms of relevant information, including scientific and indigenous and local

47 UK Government 2018, p.109

48 Dasgupta 2021

knowledge, innovations and practices"⁴⁹. Target 18 in the 2011-20 Strategic Plan for implementing the Convention was that, by 2020:

"The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels"⁵⁰.

As a result of this target, the traditional knowledge aspect of the biocultural heritage framework already has explicit recognition in UK conservation policies. The value of such knowledge was highlighted by a number of interviewees, albeit using analogue terms such as 'local' or 'non-scientific' knowledge. For example, from NatureScot:

"We're science-based organisations, but we now try and collect and understand and use local knowledge as much as we can in our decision-making. So, it has a really important role for us alongside the traditional scientific approach that we have as an organisation. I guess that's where

the value of Indigenous people concept comes in, it's about that vernacular and local knowledge, which is really important."

(Peter Rawcliffe, Head of People and Places Activity, NatureScot)

NatureScot provide a summary of work in Scotland related to Target 18⁵¹. Amongst other things, this covers steps taken to 'respect indigenous language', specifically Gaelic, with reference to recent work to compile biodiversity terms in Gaelic. It is argued that: "Scotland's traditional biodiversity knowledge is probably better documented than most countries. However new technology is being applied to ensure it is not lost"⁵².

Reference is also made to traditional land uses in crofting areas of the country, and the contributions these have made to internationally important habitats rich in biodiversity. The project Crofting Connections is cited as an example of trying to ensure that traditional methods and knowledge around crofting are captured for future generations. Another example given is the forums which have been developed with communities to establish practices which combine traditional knowledge with scientific understanding, such as the Muirburn Code⁵³, which benefit communities and biodiversity.

The issue of traditional knowledge transmission is also recognised by Historic

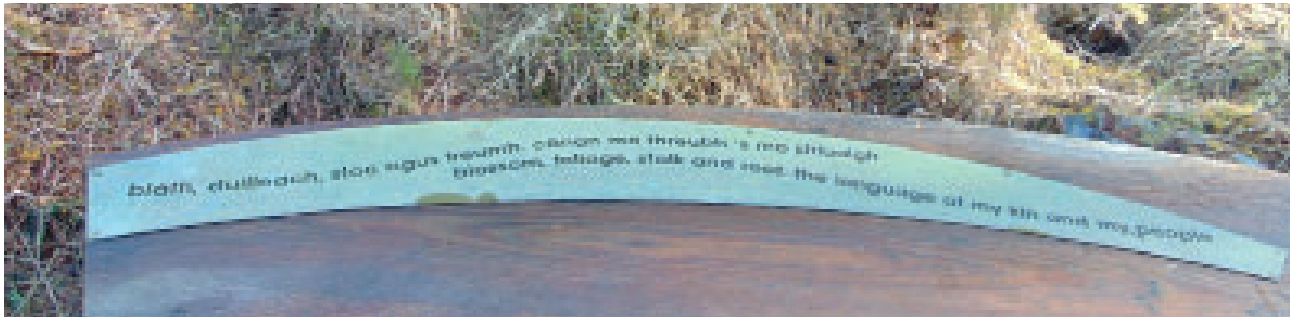
49 Convention on Biological Diversity 2006

50 Convention on Biological Diversity 2006

51 NatureScot 2019

52 NatureScot 2019

53 <https://www.nature.scot/muirburn-code>



Scottish Gaelic, Beinn Eighe Nature Reserve Visitor Centre in Wester Ross Biosphere. Credit: Zoe Russell

Environment Scotland, for example in their intangible cultural heritage policy statement:

“We recognise that language is a vehicle for the transmission of ICH, and that languages are vital to understanding the culture from which they spring. We acknowledge the place of Gaelic language and culture as a distinct and unique part of Scotland’s history and living culture”⁵⁴.

This comes under a heading of language and associated practices, but the practices themselves, as they relate to specific landscapes and biodiversity are less clear. Concerns around the loss of traditional knowledge associated with placenames and agricultural practices, for example, do not feature in the statement. What is more clearly recognised is traditional knowledge as it pertains to the skills needed for conservation of historic buildings. This is in line with HES’ core remit, which is focused on built heritage.

In the field of built heritage, HES aims to identify ‘at risk’ skills and to:

“encourage and support the

transmission and dissemination of traditional skills, knowledge and practices through proactive policies and initiatives, and ensure that we recognise and record any intangible cultural heritage practised by the crafts people we employ”⁵⁵.

In Wales, the connections between culture, heritage, language and environment, including agriculture, are acknowledged in the *Wellbeing of Future Generations (Wales) Act*. This identifies connections, for example, between ‘A Resilient Wales’ and ‘A Wales of Vibrant Culture’ and ‘Thriving Welsh Language’. In relation to the topic ‘knowledge of nature’, the recommended actions include: “Work with traditional skills and crafts people, who work with the natural environment, and encourage training schemes to teach these as a way of managing your estate”⁵⁶. There is also the idea of “using culture and the Welsh language as a driver for economic and environmental change”⁵⁷.

Many traditional skills are at risk of dying out in Wales, because they are not being passed on:

54 Historic Environment Scotland 2020

55 Historic Environment Scotland 2020

56 Future Generations Commissioner of Wales , <https://www.futuregenerations.wales/>

57 Future Generations Commissioner of Wales, <https://www.futuregenerations.wales/>

“we’ve got so many new modern materials we can utilise, the traditional skills to some extents have been lost, but they are still there and it’s just trying to, you know, find them and make sure we use them where appropriate.”

(Ian Halfpenney, Senior Inspector, Rural Land Use Policy, Cadw)

The benefits of emphasising traditional skills were explained as follows:

“It’s not just a revivalist thing for the sake of being a revivalist thing, it’s actually because it works really well and it’s more effective and appropriate for conservation in a lot of circumstances than the modern materials that we’ve been using, perhaps without question for the last 25/30 years. We’re starting to realise that... traditional skills actually work more effectively and are better in environmental situations as well.”

(Ian Halfpenney, Senior Inspector, Rural Land Use Policy, Cadw)

In England, Historic England’s Places Strategy highlights their inclusion of local knowledge:

“We inspire change, broker co-operation, and help to navigate the sort of design, management and delivery issues that can only be addressed by the breadth of expertise, statutory locus, local knowledge and national perspective that defines us.”⁵⁸

Determining what this means in practice involves reflecting on the experience of working with communities and on the question of whose knowledge counts and where and how knowledge originates:

“I had established a relationship with groups of people, predicated on the fact that I was the expert, and my knowledge took precedence over others. It was a real challenge, getting them over that hump. I have never accepted that. I accept that I have a certain level of specialised knowledge accrued over a long period of time, but that knowledge is borrowed knowledge in many respects, which I have gathered from working with people across communities. Working with community groups, I say, I am standing talking at you, I’m uncomfortable with that, I want to hear your voice, different voices.”

(David McOmish, Senior Advisor (Places), Historic England)

Historic England’s recent work has come to include a greater focus on other forms of knowledge. The organisation’s work as part of the Climate Heritage Network, for example, has a strong focus on buildings⁵⁹, but a recent webinar explored the topic of ‘Valuing Traditional Knowledge in Climate Action’⁶⁰.

While traditional knowledge has begun to assume greater prominence in policy and at the institutional level in recent years,

58 Historic England 2018

59 See Historic England 2020a

60 Historic England 2020b

there are a number of concerns in this area. For example, Target 18 was not included amongst those targets deemed “central to actions to help biodiversity in the UK” in the State of Nature Report 2019.⁶¹

During the interviews, it was expressed that institutions face challenges in reporting on this target in UK contexts, given that this involves a range of people engaged in land and sea management, rather than one identifiable community of ‘indigenous’ people.

The institutional approach to traditional knowledge is also more limited than would be expected with the full application of a biocultural heritage approach. To take the Scottish example, attention has largely focused on certain parts of the country, especially the crofting areas of the north and west, where communities have – through a long history of struggle – secured stronger rights for themselves in relation to the land and to their cultural practices. Even in such contexts, conservation policy often continues to neglect the relevance of local ecological knowledge and understandings of nature rooted in place-based ways of knowing, such as through the Gaelic concept of *dúthchas*.⁶²

Just as in relation to landscape, structural silos can act against integrating ‘recognition’ of traditional knowledge with efforts to prevent biocultural heritage loss. For example, in Scotland

there are separate agencies for the Gaelic language, nature conservation, the historic environment and crofting, and there is limited interconnectivity. Meanwhile, there is a crisis in the Gaelic vernacular⁶³ with insufficient transmission of the language within communities and intergenerationally, partly due to a declining and ageing rural population, but also because of the repression of the language until fairly recently. Responding to this needs a holistic approach to development in the *Gaidhealtachd*⁶⁴, because it is about more than language: “It is bound up with economy, place, employment, resilience, culture and sustainability.”⁶⁵

Comparing this to the Welsh context, the *Future Wales: National Plan 2040*, makes the connection between development and the language:

“[In] concentrations of settlements where Welsh is the first language for many people, it is important that development plans consider the relationship between strategic housing, transport and economic growth and the Welsh language. Development plans should contain settlement hierarchies and strategies to distribute growth in such a way that creates the conditions for Welsh to thrive and to be preserved as the community language in the many places where everyday life takes place through the medium of Welsh.”

61 Hayhow et al. 2019

62 Ní Mhathúna 2021; Russell 2021

63 Giollagáin et al. 2020

64 Defined as the historically Gaelic speaking parts of Scotland in the Highlands and Islands

65 Camshron 2021

It is problematic to fragment knowledge or practices and to divorce them from the wider cultural, social and economic life and sustainability of a community. The biocultural heritage approach situates the transmission of traditional knowledge within the wider sustainability of the communities to which it relates, with benefits for biodiversity.

The question of how to define communities, and account for movement and diversity within them was raised by most interviewees. Biocultural heritage recognises cultural diversity and sees cultural heritage as part of local distinctiveness and sense of place. The challenge is the creation of shared heritages and shared spaces, whilst respecting local diversity.

In the Northern Irish context, for example, the Department for Communities completed a review of the terminology applied in their Industrial Heritage Record against the UK *Forum on Information Standards in Heritage (FISH)* catalogue. This revealed locally specific terminology that would not necessarily be applicable in a wider UK context. Retaining culturally specific terms within a heritage record preserves and acknowledges the intrinsic value in “linguistic variety, alternative forms of expression and local traditions.”⁶⁶

Achieving that more integrated approach requires not just a concern for the full range of issues of concern to local communities, but the translation of key terms and concepts associated with the Convention

on Biological Diversity and the biocultural heritage framework into alternatives that are a better fit for the UK context. The term ‘indigenous’ and associated notions of indigenous rights are relevant in former colonial contexts, where a collective indigenous identity is born of the shared experience of diverse peoples and groups who have been marginalised, not least in nature conservation. In the UK, the term local communities is a more appropriate one.

The idea of ‘traditional’ knowledge also needs to be handled with some subtlety given that it can carry the connotations that knowledge is static and has not changed, and that it has somehow developed and persisted in isolation from ‘modernity’ or the ‘wider world’, rather than through the complex interplay of endogenous and exogenous influences.

It is also easy to romanticise anything ‘traditional’, when a more critical perspective is needed to assess how traditions can both promote and undermine sustainability or inclusivity. Thus, a key aim would be to be more attuned to the kinds of knowledge that exist in different local and regional settings, and the types of knowledge that communities wish to carry forward – creatively and dynamically – into the future and transmit across the generations.

In the UK context, it makes sense for ‘traditional knowledge’ to be replaced by the alternative term ‘local knowledge’, which emphasises the in-situ and

66 Dept. for Culture, Arts & Sports 2015

place-based nature of communities' understanding of their surroundings. Neither 'traditional' knowledge or 'local' knowledge are static and, generally speaking, held only by particular communities; many people possess valuable knowledge about the local environments where they live.

While local knowledge is explicitly recognised in existing policies within the UK, there still appears to be a spectrum of local knowledge that is excluded in nature and historic environment conservation policy and practice by disciplinary and scientific methods of knowing. This is problematic both in terms of achieving conservation outcomes and in terms of achieving other outcomes, such as sustaining the diversity of languages, knowledges and land use practices and ensuring the resilience and sustainability of different communities. It should be a priority to establish the diversity of local knowledge and better understand how people can be empowered to use such knowledge to achieve larger aims such as nature recovery and tackling the climate and biodiversity crises. This should be part of the understanding too of how such knowledge contributes to the creation of resilient local livelihoods in different local and regional contexts.

Customary Laws

In the case of indigenous peoples, biocultural heritage draws attention

to the connection between commons, managed through customary laws, and the beneficial outcomes that this can produce for people and nature. Key to this is the fact that communities have the agency and self-determination to manage territories, whether through some form of co-management or within a biocultural heritage territory for example.

Exploring this in the UK setting, the clearest translation is in relation to the different 'commons' which exist as a form of property relations to varying degrees in Scotland, England, Wales and Northern Ireland. Far from being a niche historical remnant, it has been increasingly argued that:

"commons are increasingly important to a number of 'new' rural functions and that the associated policy developments may hold an important message for progress towards sustainable multifunctional land management more generally"⁶⁷.

In the English and Welsh contexts, it has been shown "there is a strong correlation between commons and designations of significant nature conservation value ensuring that nature conservation issues are an integral part of determining sustainable management on commons."⁶⁸ In Wales, there is 175,000ha of common land, around 8.5% of the land area. 40% is designated as Sites of Special Scientific Interest, and 50% lies within protected landscapes.⁶⁹ Just under 400,000 hectares of land in England is common which amounts to more than 3%

⁶⁷ Short 2008

⁶⁸ Short 2008

⁶⁹ Laimann 2018



IPENS - Horses grazing on New Forest Special Area of Conservation (SAC), credit: Natural England, licensed under CC-BY-NC-ND 2.0

of the total land area of the country. 57% of this common land is designated as Sites of Special Scientific Interest, 30% lies within Areas of Outstanding Natural Beauty, and 48% within National Parks.⁷⁰ It is therefore recognised that:

“The English commons are a very significant reservoir of biodiversity and archaeological remains. [...] Commons and the customary practices associated with them have considerable cultural significance. At a local level they have been an important resource for almost a millennium, providing grazing, fuel, building materials and fish and game. They remain a reservoir of pastoral skills, knowledge and custom. The longevity of communal agricultural practices in

areas such as the Lake District is a key component of the cultural landscape which is reflected in the Lake District World Heritage Site nomination bid.”⁷¹

The New Forest in England is another example of where commoning and historic rights to land are an essential aspect of how landscapes are managed, e.g. with efforts to encourage conservation grazing based on historic practices. Although, special qualities are analysed in policy through the lens of ecosystem services⁷² rather than biocultural heritage.

Likewise, in Scotland, areas under crofting tenure include parcels of land that are managed in common for grazing. “There are over 1000 common grazings covering over 500,000ha across Scotland.”⁷³ These common grazings are often associated with areas of high nature value and have been subject to nature conservation designations such as Sites of Special Scientific Interest and National Nature Reserves and to landscape designations such as Wild Land Areas. The latter have been contentious, given the ways in which the terminology of ‘wild’ may deny the history of human practice which created the high value nature in the first place.⁷⁴ Support for crofters to enhance connections between crofting and biodiversity is recognised in the Crofting National Development Plan.⁷⁵

70 There is also 11% of scheduled ancient monuments on common land (Foundation for Common Land & Natural England 2010)

71 Foundation for Common Land & Natural England 2010

72 Natural England 2015. The New Forest, National Character Area Profile.

73 Crofting Commission, Common Grazings, <https://www.crofting.scotland.gov.uk/common-grazings>

74 see Scottish Crofting Federation, https://www.crofting.org/mapping_wildness_restriction_by_design_if_not_yet_designation/

75 Scottish Government 2021 <https://www.gov.scot/publications/national-development-plan-crofting/>

Whilst commons have been sustained for significant periods of time in the UK, their sustainability is not immune to challenge, and there are issues in many cases to address:

“So, if you take the New Forest for example, you know that takes you right back to William the Conqueror [11th century] in terms of how that land was set up, how it was managed, how the commoning system came in, and how still some of those ancient systems are in place today but nevertheless it still has some fundamental conservation issues associated with it.”

(Amanda Craig, Director of Connecting People With Nature, Natural England)

And, for example, in crofting areas, there has been declining use of the commons due to ageing populations of crofters and shifting agricultural practice away from collective activities towards individualisation.

Trends such as these raise the question of whether, in the UK, the commons have become less rooted in a particular collective biocultural heritage based on shared cultural values, knowledge and traditions. This needs to be further unpacked in a UK setting, to assess the extent to which the practical realisation of ideas around common good, collective values and reciprocity between humans and the environment has declined, been lost and

could be brought back in new forms.

A central question in commons literature is how individuals who are interdependent can organise and govern themselves and obtain benefits from doing so, avoiding individuals acting in self-interested ways that undermine the commons resource.⁷⁶ This question is not just relevant for areas recognised, explicitly, as ‘commons’ but also more broadly for the governance and management of land in the UK.

Across the interviews, the issue of working with different kinds of land management and land ownership structures was a prominent theme, including processes for working with communities. Across the four UK contexts patterns of land ownership and control differ. However, partnership working is acknowledged as key to bringing different stakeholders to the table to consider land management and land uses at a larger scale.

The *Future Generations Report 2020* encourages public bodies and organisations to:

“Empower communities to manage land (including publicly owned land) for projects that use nature-based solutions to restore local biodiversity and the resilience of ecosystems.”

In the Scottish context, land reform has been a priority for successive Scottish Parliaments and Governments. Scotland has the most concentrated pattern

76 Ostrom 1990 cited in Short 2008 - see also Berge and Van Laerhoven (2011) for an overview of Ostrom’s work around governing the commons

of private land ownership in Europe⁷⁷ because of several historic factors, such as feudalism, succession laws, fiscal policies and agricultural support.⁷⁸ One of the reasons this is argued to be problematic is because “current ownership patterns often contribute towards the degradation of the land, including the reduction of biodiversity.”⁷⁹

A *Land Rights and Responsibilities Statement* has been published by the Scottish Government and this sets out the vision for a strong and dynamic relationship between Scotland’s land and its people.⁸⁰ It promotes greater diversity in the ownership of land including more community ownership, high standards and transparency of land ownership and use, and better community engagement in decisions about land.

For example, in relation to some of the key principles:

“Land rights are central to the realisation of key human rights, particularly economic, social and cultural rights. [...] The overall framework of land rights, responsibilities and public policies should promote, fulfil and respect relevant human rights in relation to land, contribute to public interest and wellbeing, and balance public and private interests. The framework should support sustainable economic development, protect and enhance

the environment, help achieve social justice and build a fairer society.”⁸¹

“Community ownership can support wellbeing and resilience by giving local people the opportunity to identify and respond to their own needs. [...] Having control over land as a resource can help contribute to increased community resilience, enabling and empowering communities to adapt land uses to their sustainable development needs and to develop plans to adapt to changing circumstances.”⁸²

New rights for communities to buy land were introduced through the *Land Reform (Scotland) Act 2003*, the *Community Empowerment (Scotland) Act 2015* and the *Land Reform (Scotland) Act 2016*. Recent research has outlined the benefits of community ownership of land in a variety of contexts. For example, in adopting a holistic approach to climate change which delivers multiple community and public benefits.⁸³

More recently, proposals have been set out by the Scottish Land Commission for:

- The requirement for significant land holdings to publicly engage on, and publish, a Management Plan
- A Land Rights and Responsibilities Review process, a practical means of review where there is evidence of adverse impacts

77 As indeed does the UK in a global context (Revive Coalition 2021)

78 Thomson et al. 2016

79 Revive Coalition 2021

80 There is no equivalent for seascapes e.g. a sea rights and responsibilities statement (see case study 4)

81 Scottish Government 2017

82 Scottish Government 2017

83 Macaulay and Dalgligh 2021

- A new Public Interest Test that could determine whether significant land acquisitions create risks of concentrated power.⁸⁴

In Scotland then, longer-established commons now exist alongside a range of new opportunities for community or shared governance of the land (although private ownership remains dominant in the overall pattern of land ownership and control).

The extent to which the particular approach to land reform taken by Scotland might be feasible elsewhere in the UK is questionable. For instance, in England:

“The idea of community ownership, or community democracy – actually impacting on how people live their lives and how they manage their environment, and how that impacts on wider biodiversity issues. It’s miles away from what we consider local democratic action and decision-making.”

(David McOmish, Senior Advisor (Places), Historic England)

There are other ways in which a more collective or shared participation in governance might be promoted, though. For example:

“Proactive community conservation can be seen in the Cornwall AONB Peatland Restoration Project, a collaboration between local owners and interest groups with a private water supply company and government agencies, with the aim of halting the loss of biodiversity

and habitat within the moor.”⁸⁵

And in Wales:

“We are very aware that community engagement with the historic environment is absolutely critical to its future preservation. I mean if you can get communities to engage and care for the historic environment, then obviously it makes our job a lot easier. And we actively encourage community involvement. And as far as we possibly can really.”

(Ian Halfpenney, Senior Inspector, Rural Land Use Policy, Cadw)

However, while there is value in pursuing diverse forms of community empowerment in relation to environmental and land decisions, the structural challenge of land ownership remains. A significant part of the challenge of empowering communities is the prevailing patterns of land ownership and the power that ownership confers over decisions about use of the land:

“The estates have... direct ownership of that land. They have a greater ability to influence how change is managed”.

(Graham Saunders, Head of Heritage Management Policy, Historic Environment Scotland)

In England:

“Most of our national parks are in an upland system where you’ve got private landowners with tenancy arrangements, which can be big,

84 Scottish Land Commission 2021

85 Grove et al. 2020

long, lifetime tenancy arrangements with local farms, and then they've got commoners as well, people with common rights, so you've got all sorts of different complicated tiers around land use, land ownership and land management."

(Amanda Craig, Director of Connecting People With Nature, Natural England)

There are also challenges arising from the traditions of decision-making that are embedded in conservation institutions, processes and practices. For example, an analysis of Wales' sustainable management of natural resources framework, points to tensions between using technical and participative approaches, concluding there is a disappointing lack of attention to collaborative governance.⁸⁶

One of the challenges mentioned by interviewees from across the UK is that faced by national institutions in trying to work with local communities and how this might influence efforts towards co-designing or co-managing:

"we're a national organisation and although we have a local presence, we can't say we're closely embedded in communities across Scotland evenly. So, we are very conscious that we are a national body trying to do an awful lot and where we can work with communities we will. And that's particularly in the North and West Scotland, less in the South and hardly at all in central Scotland. [...] we as an organisation are increasingly

committed to co-design of our work, that's not easy for a national agency, but we are trying and we've done it, particularly around certain groups, so young people we've been very interested in trying to work in the co-design way with them, but also in terms of marine protected areas and ... working with land, land managers and people who are probably closer to the biocultural heritage agenda than others. We really want to get to a point where we co-design solutions for people and nature."

(Peter Rawcliffe, Head of People and Places Activity, NatureScot)

The national-local tension also arises in relation to designated areas. For example, in England:

"National Park authorities replaced that local authority network, and the authority is made up of people with a national hat on as it were. Not just local. So, you've got the tension of how they make sure they are delivering for national priorities as well as priorities for their local people."

(Amanda Craig, Director of Connecting People With Nature, Natural England)

There are also issues in terms of how to define communities, and the ways in which inequalities result in an uneven distribution of participation:

"Local communities are in a good position to manage their own

landscape and their environments because they have a direct relationship with it, and they can see the impacts immediately [...] But not every community is equal. And, to help ensure communities all have access to the right skills to manage their own environment, that's the role of a national organisation I would say, and also the role of placing or having a designation system, say for example, which gives you a degree of a benchmark of values which as a society we all recognise 'cause the danger also of just solely looking at a community based approach ... where everything is decided by community, is ... different areas will have different values. And where is your benchmarking? Where's your resources? Where's the skills to manage it effectively, but also to understand what those values are? So, there is a role to be played at both the macro and micro level. And they need to be related, not operating in isolation, and I think that's the trick, is communication between the two and also respecting the values they bring to it."

(Graham, Saunders, Head of Heritage Management Policy, Historic Environment Scotland)

From all of the above, it's clear that there is recognition within the UK of the importance of participation as a foundation of environmental decision-making. Such

participation can be significant in terms of ensuring the inclusion of local and traditional ecological knowledge and fostering community action to address key challenges.⁸⁷

However, when considering what forms participation can and might take – and when translating the concern for 'customary laws' found in the biocultural heritage framework into UK contexts – there is a need to understand diverse realities, trends and possibilities.

There are long-established commons of different forms. New forms of community ownership and community-led management have recently emerged, and a diversity of other approaches to community participation in decision-making can be found, with varying degrees of empowerment. There is clear evidence of a will within conservation institutions, and at some levels of government, to develop new possibilities for greater democratic participation, but the prevailing patterns of land ownership and control need to be taken into account here.

Given this diversity and the differences between the notion of customary laws, as understood in indigenous contexts, and the ways in which land is governed in the UK, this aspect of the biocultural heritage framework might be better understood as a matter of promoting rights-based participatory governance. This would encompass situations of community land ownership or formal commons arrangements but it would also extend to

other ways of ensuring greater democratic participation in decisions about the land, sea and local environment, and of ensuring that greater attention is paid to the rights and responsibilities of all those who are involved in and affected by decisions. Moreover, participatory governance is about developing “practical solutions to concrete problems” in contextually specific ways.⁸⁸

Resilient Livelihoods

Across policy, the concept of resilience has become a familiar one, in terms both of the resilience of ecosystems and the resilience of our societies to adapt and respond to climate change and other shocks. For example:

“Improved health of the marine environment will also lead to increased resilience of ecosystems to climate change.”⁸⁹

“We will do what is necessary to adapt to the effects of a changing climate, improving the resilience of our infrastructure, housing and natural environment.”⁹⁰

However, recognition of the importance of resilience does not necessarily translate into the kind of resilience envisaged in the biocultural heritage approach. For example, it is problematic that most food systems in Europe:

“are highly dependent on food resources from abroad, a dependency

characterised by trade-shock related fragilities and lack of resilience, as well as energy inefficiency.”⁹¹

The biocultural heritage framework shows the resilience of ecosystems is linked with the resilience of local communities, their cultural lives and their livelihoods – and that greater support for culturally diverse practices, knowledges, values and forms of governance can benefit both people and biodiversity.

Elements of this thinking are already to be found in the UK. Alongside the specific ways in which cultural diversity has been recognised in nature conservation circles, discussed above, reference might be made here to the general growth in prominence of ideas of sustainable development and wellbeing in policy. Scotland’s *National Performance Framework*, for example, is based on a wellbeing approach and is the local implementation of the UN Sustainable Development Goals, with a focus on the reduction of inequality.

In Wales, wellbeing and sustainable development are also central concerns, both through the *Wellbeing of Future Generations (Wales) Act 2015* and the *Environment (Wales) Act 2015*; the latter introduces Sustainable Management of Natural Resources (SMNR) as an essential component of ecosystem resilience, which is seen to underpin human wellbeing. The Welsh focus on SMNR has been explained as resulting from “the strong

88 Walk et al. 2020, p.301

89 Scottish Government 2019

90 UK Government 2018

91 Laurent et al. 2021

links between the landscapes of Wales, its social and cultural history, and economic traditions and current trends”, alongside the importance of multi-level governance approaches and the reconciliation of environmental protection with social justice.⁹²

Both Wales and Scotland are also signed up to the Wellbeing Economy initiative, and the Welsh Government is pioneering efforts to adapt the doughnut economics model for application in the UK, part of its approach to a ‘Resilient Wales’. The original doughnut model can be explored interactively online⁹³; the inner ring of the ‘doughnut’ represents the social minimum to ensure people live well, and the outer ring the ecological limits for society and the economy (see Fig. 3).

The concept of resilience has come to the fore due to the COVID-19 pandemic, especially in terms of the ability of communities to adapt and respond. Examples across the UK have highlighted the ability of communities to take up new ways of living such as engaging more closely with local food economies. The recovery from the pandemic could lay the foundation for thinking more holistically about how resilient livelihoods can be built via concepts such as biocultural heritage which offer integrated perspectives based on people’s rights to live well and to have the agency to adapt to change.

Given the growing emphasis in the UK

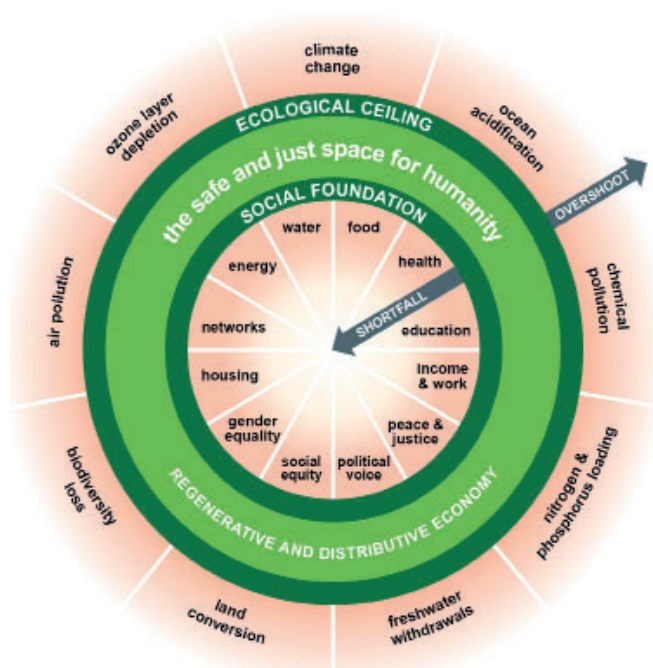


Figure 3: Doughnut Economic Model

Credit: DoughnutEconomics licensed under cc BY-SA 4.0

on wellbeing, and the established links between this concept and sustainable development and the health of ecosystems, it would be advantageous to adapt the resilient livelihoods outcome of the biocultural heritage model somewhat, re-framing this as resilient livelihoods and wellbeing. This would also respond to recent conceptualisations of “resilient livelihoods as projects aimed at the achievement of wellbeing in a manner that preserves existing systems of meaning, e.g., socio-ecologies, deeply human assemblages of socio-cultural and biotic elements.”⁹⁴

Conclusion

Based on the discussion and the findings presented in this Chapter, a revised model of biocultural heritage for the UK can be

92 Jenkins 2018

93 Raworth 2017, <https://www.kateraworth.com/doughnut/>

94 Carr 2020

proposed (see Fig. 4). This adapted version retains the structure and elements of the IIED's original model but re-frames some of the elements to align more closely with the language, concepts and circumstances found in the UK.

The model highlights a range of components that, together, form an integrated biocultural heritage whole, i.e.: biodiversity; landscape and seascape; local knowledge; cultural, social and economic values; and participatory governance. Combined, these elements of biocultural heritage support the core outcome of resilient livelihoods and wellbeing. Supporting this overall outcome requires

that all of the components are given due attention and support, and that their interconnections and interdependencies are recognised and fostered.

While different elements of this framework are certainly evident in existing policies within the UK, there are significant gaps and shortcomings in policy implementation. Given this, the framework has potential value as a tool for identifying where action is needed to address all its components in a full and integrated way.

Given existing barriers and structural issues, such as the siloed nature of policy and its implementation, there is no straightforward way to introduce such a framework; it is

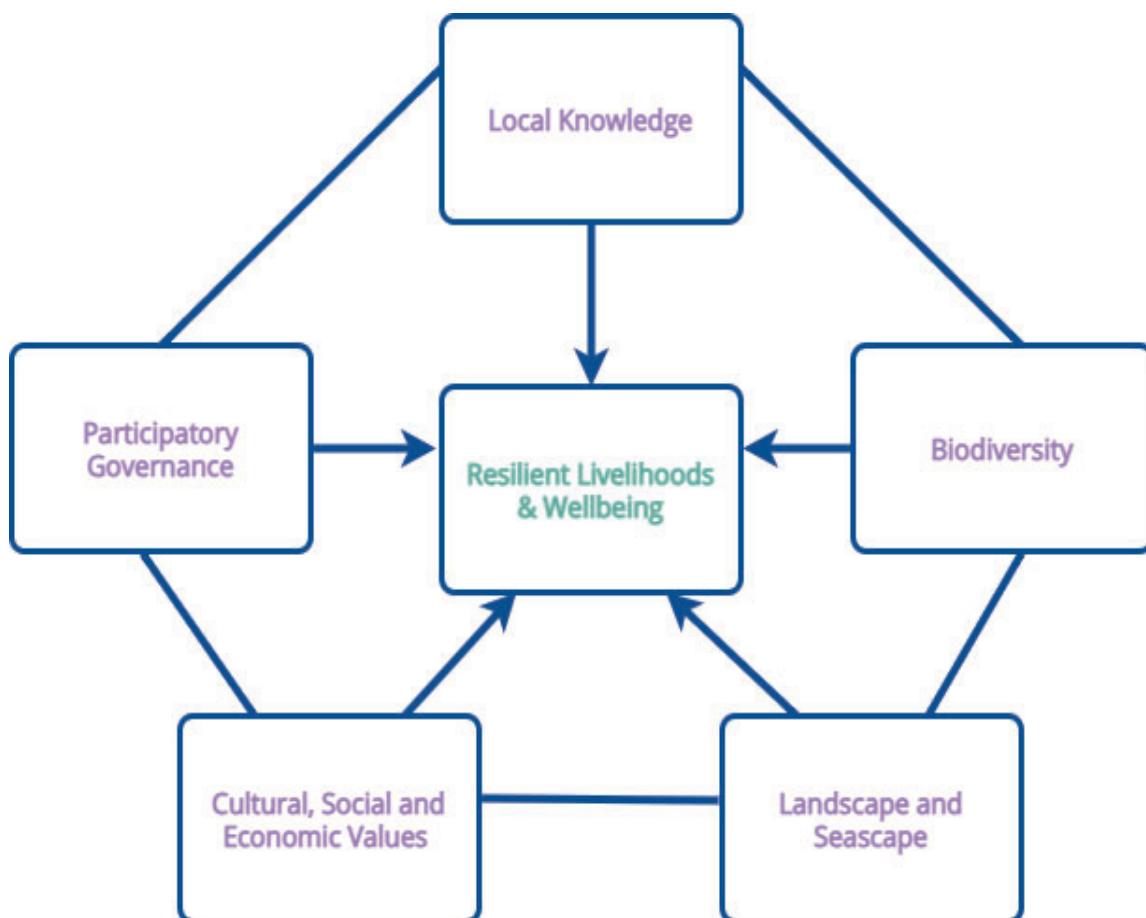


Figure 4: Adapted diagram of biocultural heritage for the UK

better conceived as a tool for dialogue, cooperation and collaboration. One of its strengths here is the inclusion of a broad range of interests, linking to diverse areas of existing policy and to wider community, public and private interests.

In Scotland, England, Wales and Northern Ireland, the separate policies and practices for biodiversity and nature conservation, agriculture, landscape, heritage and culture, could be better integrated to take account of the interconnections of a biocultural approach.

At present, nature conservation is predominantly focused on the scientific management of natural resources drawing on concepts of biodiversity, ecosystem services and natural capital, with less attention to the processes underlying how human practices, cultures and values shape land uses over time, and the contemporary implications of this.

Likewise, the historic environment is predominantly concerned with the built heritage, and the archaeology of past human uses of landscape, although intangible cultural heritage has recently received more attention, including language and traditional skills and knowledge.

There is a need to find better ways to connect across these sectors, and for issues of culture and heritage to be considered equally in conversations about sustainable futures. Heritage is often an afterthought in policy development and delivery⁹⁵, seen as a 'nice to have' rather an essential part of

people's rights.

The biocultural heritage framework could serve to help ensure that people's heritage is not treated separately to issues of biodiversity and landscape/seascape. It reinforces the importance of considering cultural, social and economic values, local knowledge and participatory governance to generate resilient livelihoods.

The nature conservation and cultural heritage sectors in the UK have traditionally not had a concern for the rights and livelihoods of local communities, for their responsibilities towards these communities, or for the role that local knowledge and practices and people's values play in creating and sustaining vital landscapes and seascapes. This situation has begun to change, in response for example to the increasing political and public emphasis on land reform, community empowerment, resilience and wellbeing. More needs to be done to integrate these concerns fully into conservation policy and practice, and the biocultural heritage framework is a tool that can help to promote and guide that change.

How that might be done will vary across and within the four nations of the UK, although there are a number of shared challenges that will drive and direct change, including climate change, the biodiversity crisis and inequalities in livelihoods, wellbeing, and participation in decisions that affect people's lives. The biocultural heritage approach chimes with the increasing attention that is being

95 Welsh Government & Cadw 2018

paid to new ways of working based on collaboration, cross-sectoral partnerships, place-based approaches and community participation, recognised as being key to the delivery of nature conservation and historic environment goals and for societal wellbeing and prosperity.

The specific contexts of recovery from Brexit and the COVID pandemic also shape the UK context at this time; both have their specific challenges, but also opportunities for radically transforming current approaches to policy.

There is potential for biocultural heritage to act as an umbrella concept, creating space for disparate areas of policy to come together. Finally, it draws attention to a number of key challenges for future policy formulation and delivery.

Chapter 4

Biocultural Heritage UK Case Studies



Dry-stone wall restoration work in the Mourne, Northern Ireland. Credit: Mourne Heritage Trust

This chapter presents the findings from the case study component of the research, which focused on four cases from the different nations in the UK. These are biocultural heritage tourism in two different biospheres in England, mixed farming histories in a biosphere in Wales, upland landscapes in an Area of Outstanding Natural Beauty in Northern Ireland, and marine conservation and heritage in a biosphere and marine protected area in Scotland. Figure 5 gives an indication of the locations of these case studies.



Figure 5: Case Study Locations

Source: Contains OS data © Crown copyright and database right 2021 - edited by Zoe Russell

The case studies were selected to show the diversity of applications relevant to biocultural heritage in different UK contexts and to highlight learning from practice. Each of the case studies addresses the theme of biocultural heritage, although only one is currently using this term explicitly.

In the short duration of the project, there were many other examples that could have been chosen to illustrate the potential scope of the concept of biocultural heritage in practice. For example, the Clyde and Avon Valley Landscape Partnership¹ drew on the biocultural heritage concept implicitly, with learning from this soon to be published.² There are likely to be other examples across all four national contexts of work on the ground which aligns with the ideas of biocultural heritage. Due to time and availability constraints four examples were chosen. A list of case study interviewees is presented in the methods appendix.

Three of the four cases have in common designation as UNESCO Biosphere Reserves. This is an international accolade which builds on national statutory conservation designations. Biospheres are relatively unknown and often misunderstood³, and, unlike other designations, they accommodate multiple objectives at landscape scale through their core aim of connecting people and nature.

Biospheres are described as:

- 1 see the Clyde and Avon Valley Partnership Report 2018
- 2 MacGregor and Murtagh forthcoming
- 3 Reed and Price 2020

“‘learning places for sustainable development’... sites for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. They are places that provide local solutions to global challenges. Biosphere reserves include terrestrial, marine and coastal ecosystems. Each site promotes solutions reconciling the conservation of biodiversity with its sustainable use.”⁴

Recognised under the *Man and Biosphere* programme⁵ biospheres are established by individual countries to promote sustainable development based on local community efforts and sound science. There are over 714 Biosphere Reserves across 129 countries.⁶ The UK has 6 of these sites, after a period of review where some sites were de-listed because they did not include people, a new requirement as the model has evolved over time.⁷ Biospheres have three main functions: conservation, sustainable development and knowledge and education. Each of these is given a different degree of emphasis within the biosphere’s three zones, the core, buffer and transition zones.

Biospheres differ in terms of specific

governance arrangements, but at their heart is the importance of collaborative decision-making and participatory governance, as set out in the Lima Action Plan.⁸ These are considered vital to “address diverging interests, knowledge and values among stakeholders.”⁹ Compared to many other designations, biospheres have a strong emphasis on people. However, in the context of the challenges of the Anthropocene, it has been argued that people should be placed even more centrally at the heart of biosphere reserve policy and management, moving even further towards embracing integrated and effective forms of sustainable livelihoods for inhabitants.¹⁰

For those cases where there is biosphere designation, the work that is reported here is only a very small part of the overall activities of the biosphere and the aim is not to examine the designation itself. However, it should be noted that it is unsurprising to find work that aligns with biocultural heritage approaches in the biosphere context, which is well suited to more holistic approaches to people and nature.

4 UNESCO <https://en.unesco.org/node/314143>

5 UNESCO <https://en.unesco.org/mab>

6 UNESCO <https://en.unesco.org/biosphere>

7 see Price 2020 for an overview of Biospheres in the UK

8 Walk et al. 2020

9 Nolting and Mann 2018 cited in Walk et al. 2020, p.299

10 Stoll-Kleemann and O’Riordan 2017

Case Study 1: Biocultural Heritage Tourism in England

This case study draws on the work of England's two UNESCO biosphere reserves, North Devon and Brighton & Lewes Downs, shown in Figure 6.

North Devon Biosphere was designated as the UK's first UNESCO World Biosphere Reserve in 2002. It is jointly funded by Devon County Council, North Devon Council and Torridge District Council. A partnership body coordinates the management of the biosphere on behalf of local authority stakeholders and engages with a range of relevant national, regional and local interests in the management of the area. From land to sea, the Biosphere covers 3,300 km² and is home to approximately 150,000 people.¹¹

The biosphere strategy “uses the fact that Nature provides for this area a whole set of benefits that we can use wisely to give us that secure future; it addresses the challenges such as climate change, food security and energy security choices, the structure of our economy and how we can benefit as a society. It places a large emphasis on working with the local community to inspire and deliver the future they want.”¹²

The Brighton & Lewes Downs Biosphere is known as ‘The Living Coast’. It is managed by a partnership made up of a range of more than forty different voluntary, conservation, education, local government and private sector bodies.

“The Living Coast is the place where people and nature come together in our world-class environment of Downs, Towns and



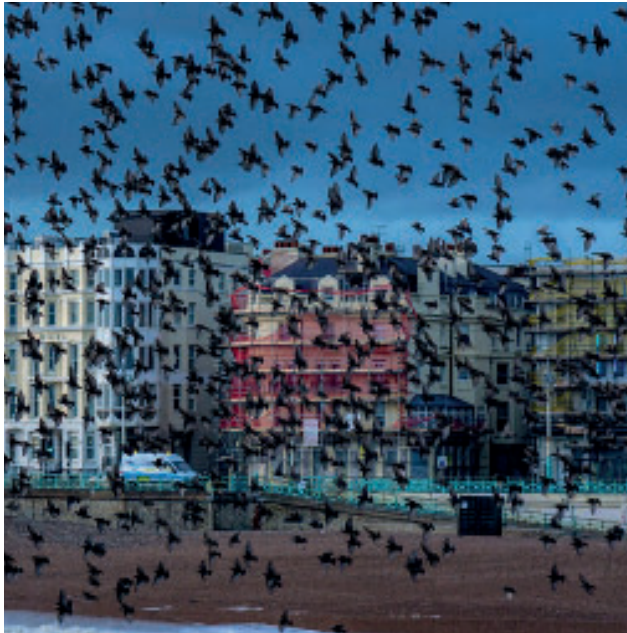
Figure 6: Location of case study 1 biosphere reserves

Map sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, ESRI Japan, Esri China, METI, Esri Korea, Esri Thailand, NGCC (c) OpenStreetMap contributors and GIS User Community & Contains Natural England information licensed under the Open Government Licence v3.0

¹¹ <https://www.northdevonbiosphere.org.uk/who-we-are.html>

¹² Winter 2014

Coast.”¹³ The Living Coast is the UK’s only urban Biosphere, home to more than a third of a million people. A major aim of the biosphere is to reconnect urban dwellers to the natural environment.¹⁴



Brighton starlings. Credit: hehaden, licensed with CC BY-NC 2.0

Beyond that, the biosphere covers urban, rural and coastal and marine environments, and a key focus is the linkages between them and the need for an ecosystems approach. The South Downs National Park, which is 85% agricultural, is a key feature of the rural environment.

These biospheres are partnering with two French biospheres for a project titled ‘BioCultural Heritage Tourism’, which is supported by European Regional Development Funding from 2018 to 2022.¹⁵

Within the project, biocultural heritage tourism is defined as:

“a process of collaboration between inhabitants, businesses and environmental managers to create new experiential activities that celebrate the connections between humans and nature distinctive to the local area and cultural heritage. These aim to improve the benefits and limit the negative impacts of tourism on the environment, for instance by appealing to visitors in low season, getting visitors involved in sustainable land management activities, or by creating nature experiences facilitated by digital technology.”¹⁶

It is argued that whilst the aims are in some ways similar to those found in other models of tourism (such as sustainable, eco, green and responsible tourism), biocultural heritage tourism is different because it is not simply about nature, but about the heritage of practices related to nature. Whilst it does aim to minimise the negative impacts of tourism as with other models, there is fundamentally more emphasis on a positive engagement with place and the explicit celebration of connections between humans and nature distinctive to the local area and its cultural heritage.

Biocultural heritage tourism is holistic, seeking to tell a story that links different parts of the complex process of interaction between culture and nature. In so doing, it facilitates understanding of the interdependency of nature and culture.¹⁷

13 <https://thelivingcoast.org.uk/>

14 Biosphere Management Strategy 2014-2019

15 <https://www.bcht.eu/index.html>

16 Wilkinson 2019

17 Wilkinson 2019

The project produced a typology of biocultural heritage present within the participating biospheres. This includes, for example: language and linguistic diversity (terms, concepts and categories relating to nature); things (material culture); know-how (techniques, traditional and local knowledge, transmission of knowledge, mechanisms for adaptation); living from the land and sea; and being in place (e.g., place attachment - cultural identity; social and political relations; legal institutions; ritual and cosmology and economic relations).

The project has three main objectives:

- Conservation of natural sites through managing tourism flow and improving visitor experience
- Awareness raising and increasing partnerships with local businesses
- Creating a diversified visitor offer for biocultural tourism destinations

Like many other parts of the UK, a key challenge here is the distribution of visitors across the area; when visitors become concentrated in particular hotspots, this can cause environmental and social problems. For example, visitors may be unaware of the sensitivity of particular landscapes they are visiting, and the fact that these are living and working landscapes:

“Sometimes people don’t realise, it’s not only a holiday place, there are people that live there every single day.”

(Adeline Gladieux, BCHT Project Coordinator, North Devon Biosphere)

Through a master planning exercise, and surveying visitors, an interactive map and a toolkit are being created which can be used by local businesses to create new biocultural heritage tourism activities and better disperse visitors to sites of cultural and environmental interest.

Additionally, the project has involved working with local people around different scenarios for the future, from business as usual to creating change. From the initial survey of tourism products, a variety of activities have been identified which show the types of biocultural heritage tourism activities that can be developed. Key themes are food, foraging, learning about plants and animals, rural skills, crafts, citizen action, building and making, land management, archaeological/historical and wellbeing.

A series of videos on YouTube showcases biocultural heritage activity in the Living Coast, such as the gin distillery Slake Spirits in Sussex which draws on a rich cultural heritage to bring the character of place into their products using wild foraged ingredients. For the founder, sustainability is a mindset rather than a destination, based on continuous improvement and treading lightly, and even positively.¹⁸

A key message here is that the diversity of both natural and cultural heritage is what makes the Living Coast a vibrant place to live and adopting a tourist mindset highlights the variety of your own surroundings to explore.

18 #WeAreTheLivingCoast - Slake Spirits & BioCultural Heritage Tourism Available: <https://www.youtube.com/watch?v=1dtP4dgTtYQ>



Tom Slake, founder of Slake spirits, Sussex with foraged local ingredients in background. Credit: Brighton & Lewes Downs Biosphere Partnership; YouTube still captured by Zoe Russell

The biocultural heritage toolkit identifies rural skills workshops and bee-keeping as possible activities in North Devon. Additionally, the Braunton Countryside Centre is offering environmental and cultural events delivered by local experts and artisans to showcase why the North Devon Biosphere is special. The programme, called 'Nature Connections', is being marketed as offering a chance to 'get off the beaten track and experience the real Braunton'.¹⁹

Within the project overall, it has been recognised that there is a resurgence of interest in traditional rural skills, because people want to maintain these traditions. For example, a survey has evidenced a market for this, and that people are willing to pay for courses based on biocultural heritage activities. Speaking of the origins of the project and how it is evolving:

"I think the way the project started specifically was very much geared

towards traditional skills. You know whether that's coppicing or hand crafts like basket weaving and things like that. I think that was very much the aim in the initial stages of the project. And we are trying to get those types of activities up and running as well... But then I think it just brings in so much more. You know the whole theme of health and wellbeing that is quite apparent now, especially because of COVID. And there is local produce, so there are different elements rather than it just being about traditional crafts and things like that."

(Lynn Trapano, BioCultural Heritage Tourism Project Officer, VisitBrighton)

Hence beyond the 'traditional', there is recognition of the ongoing creation of new biocultural heritage activities in Brighton & Hove biosphere which can be part of the tourism offering. For example, the growth

¹⁹ <https://www.brauntoncountrysidecentre.org/discover-braunton/connect/>

and interest in vineyards and sparkling wine:

“it’s not a traditional thing that we had in this country and it’s just something that’s fairly new ... It’s how they grow the wine, how they do it sustainably, you know how they work with the landscape of the area.”

(Lynn Trapano, BioCultural Heritage Tourism Project Officer, VisitBrighton)

The aim is to offer a range of activities and link urban, rural and coastal areas. For example, a bike trail through the more rural areas provides access to and interpretation of the landscape; in urban areas, walking food tours celebrate independent producers, shops and restaurants:

“People get a real sense of the locality, and that’s something that they’ve been doing for a few years. But you know, for me, that is exactly what it’s about as well. It’s really celebrating the local producers and local produce, so you would get a tour like that in Brighton that you wouldn’t necessarily find elsewhere, because even if you did one in York for example, you know it would be very different, and different foods.”

(Lynn Trapano, BioCultural Heritage Tourism Project Officer, VisitBrighton)

Visitors and residents can thus engage with the local variation and distinction from place-based emphasis on different areas of the biosphere and the connections between them. And producers can share the ethos around their produce and the local ingredients used. A key aim is also trying to engage with visitors to understand and act

positively towards important habitats:

“I think that’s another angle of biocultural heritage tourism. It’s getting people to appreciate the environment and the landscape but being aware that you know you don’t go near ground nesting birds when you know it’s that particular season. You don’t pick wildflowers... it’s just reiterating that message constantly. You know you need to be aware of it and you need to be doing things now, because otherwise it won’t be there for the future.”

(Lynn Trapano, BioCultural Heritage Tourism Project Officer, VisitBrighton)

Biocultural heritage activities are intended to blend the natural and cultural:

“[There will be] a weekend long festival which celebrates the cultural heritage of the coast, so that involves sea shanties. And you know the fishing heritage ... It’s about the cultural heritage, but it’s also about the environment. So, we’ve got a wind farm which is in the sea... they’ve got a visitor centre which is down on the sea front and, again, they will probably do something that’s more about the environment. They might do a kids craft workshop around plastics and things in the sea... [it’s] about cultural heritage of the coast, but also bringing in... the environment and protecting it for the future.”

(Lynn Trapano, BioCultural Heritage Tourism Project Officer, VisitBrighton)

The value of this integrated approach is that it shows the connections between sectors which might traditionally not be that well aligned in practice. For example, whilst tourism and culture often get placed together, given they have much cross-over, connections between tourism and environment are less prominent locally in the biosphere. From the perspective of biocultural heritage tourism though:

“It’s two sectors that don’t really speak to each other here locally that much, and it would really be beneficial if they did, because there is so much crossover and so many things that they should be talking about.”

(Lynn Trapano, BioCultural Heritage Tourism Project Officer, VisitBrighton)

Hence, the project can create new opportunities to collaborate across sectors, including fostering a greater awareness and appreciation for different characteristics of the biosphere itself, such as connecting urban visitors, resident populations and businesses with the rural and coastal environments.

The project will continue until 2022.

Case Study 2: Mixed Farming Histories in Wales

This case study is set within the Dyfi Biosphere in Mid Wales (see Fig. 7). The Biosphere is home to a diversity of landscapes and around 26,100 people live there, almost half of which are Welsh speakers.¹ Biosphere status was achieved in 2009 and operates under a number of key principles:

- People (their attitudes and activities) are central to the biosphere process.
- The biosphere is a place where wellbeing is enhanced and people are empowered and involved in deliberation, decision-making and co-deliver.
- The economy should become more self reliant and less carbon intensive,

based on local culture, resources, products and environmental assets.

- Constructive change occurs, through protecting, strengthening and celebrating elements of life and the world which the community values and wants to pass on to future generations.

There are many projects carried out by groups in the partnership which aim to advance the core aims of reconciling the conservation of biological and cultural diversity and economic and social development through partnerships between people and nature.

Ecodyfi is a key coordinating body in the biosphere, and recently completed the 'Mixed Farming – Histories and Futures' project which identified that "mixed farming – growing crops as well as raising

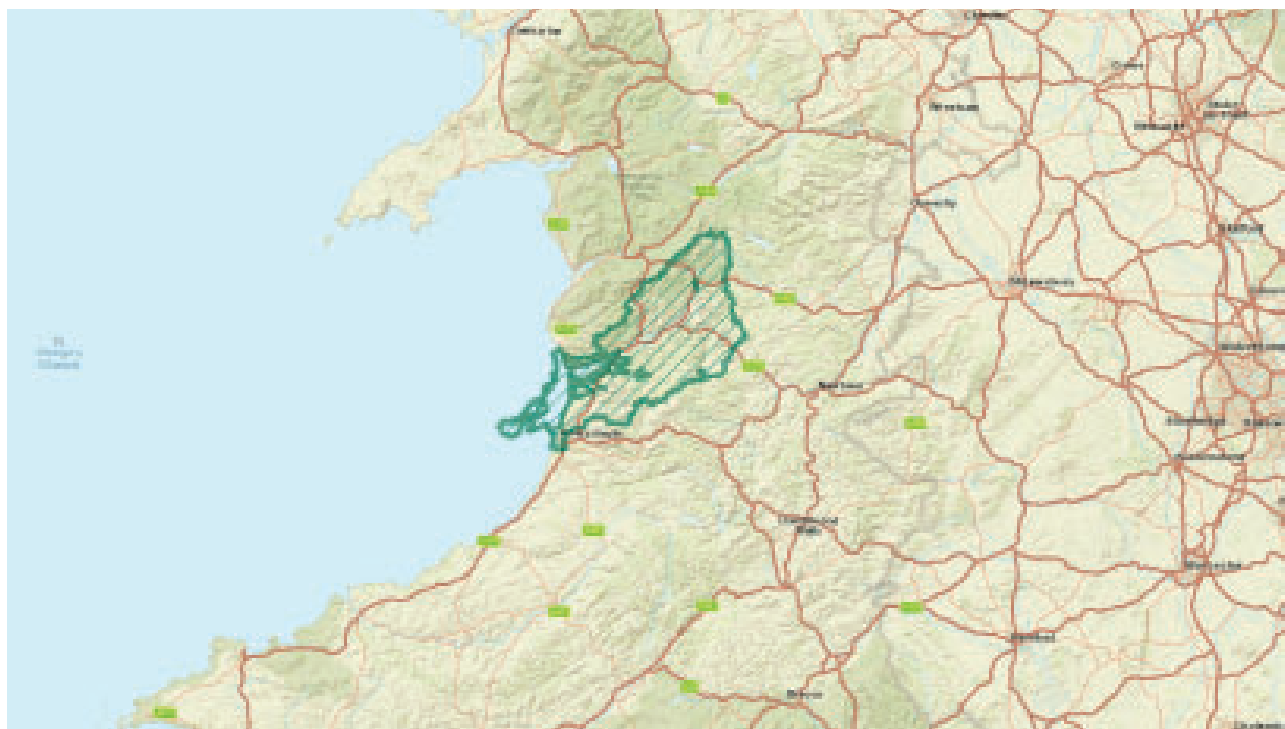


Figure 7: Case study 2 location, Dyfi biosphere

Map sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCAN, ESRI Japan, Esri China, METI, Esri Korea, Esri Thailand, NGCC (c) OpenStreetMap contributors and GIS User Community & Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Contains Ordnance Survey Data. Ordnance Survey Licence number 100019741. Crown Copyright and Database Right

¹ <https://www.dyfibiosphere.wales/>

livestock – was much more common in the Dyfi Biosphere, and in Wales in general, in the past.”² Thus, the aim of the work was to use the past to inform future approaches to sustainable mixed agriculture and resilient local food economies and to stir up conversations within the Welsh-speaking agricultural community locally and policy-makers.

“Mixed farming was about addressing the commonly held view that it’s not possible to do horticulture here, commercially, because of altitude and rainfall. But actually, if you look back at what was growing in the 1840s, and subsequently, there was a lot of crops grown, sometimes feedstock for livestock, oats in particular, but also a broad range of other crops, including vegetables. So, it’s not true that you can’t use quite a lot of land. The idea was to map that, and to point to particular fields that looked as if they’ve always been grass but, actually, they have the potential to grow other crops. So, learning from the past in order to inform our future options.”

(Andy Rowland, Manager, Ecodyfi)

The project drew on agroecology, with emphasis on the social aspects of an agroecological analysis, e.g. through the use of oral histories, Welsh language and historic land use mapping, the project

sought to make very clear the connection between cultural and natural heritage. Agroecology is promoted by the UN Food & Agriculture Organisation (FAO) as a more sustainable approach to farming³, described as:

“The basis for evolving food systems that are equally strong in environmental, economic, social and agronomic dimensions. [It is] based on applying ecological concepts and principles to optimize interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system... agroecology can support food production... security and nutrition while restoring the ecosystem services and biodiversity that are essential for sustainable agriculture.”⁴

Agroecology strongly emphasises human and social values, contributing to the improved livelihoods dimension of the SDGs, as a bottom-up, grassroots paradigm for sustainable rural development.⁵

Agroecology can be seen in action across the UK, with case studies demonstrating “the ‘public goods’ agroecological farms deliver to our society, and the practices we can encourage through an enlightened agricultural policy.”⁶

In the Dyfi Biosphere:

“Following the agroecological principle

2 <https://www.dyfibiosphere.wales/mixed-farming-histories-and-futures>

3 see FAO 2018a for the 10 guiding principles of agroecology

4 FAO 2021

5 FAO 2018b

6 Fernandes et al. 2019, p.3

of building on the past, looking to the future, much may be learned from listening to older generation Welsh farmers (and their families) who remember when agriculture in mid-Wales was more diverse. Oral histories were a central feature of the work, capturing the older generations of Welsh speaking farmers' knowledge of the decline of mixed farming. Within living memory people speak of mixed agriculture, where farms kept a variety of livestock, arable in the lower lying areas and horticulture was commonplace.”⁷

The map portal shows the oral histories by area, which are in Welsh with English summaries (see Fig.8). Speakers mention changes over their lifetime such as the individualisation of farming and pressures to increase productivity surrounding WWII. They highlight the distancing of farms from their communities and increased competitiveness, compared with previous more socially-oriented practices. This includes seed sharing between farmers in Bala that took place around 50 years ago, based on local knowledge of what crops were growing well in which fields. Hence, the feeling that:

“With their intimate hard won knowledge of the land they manage; it is a national tragedy that the generation of farmers that remembers first-hand how to engage in more diverse mixed

farming in Wales is passing on.”

(Chris Higgins, Project Manager, Ecodyfi)

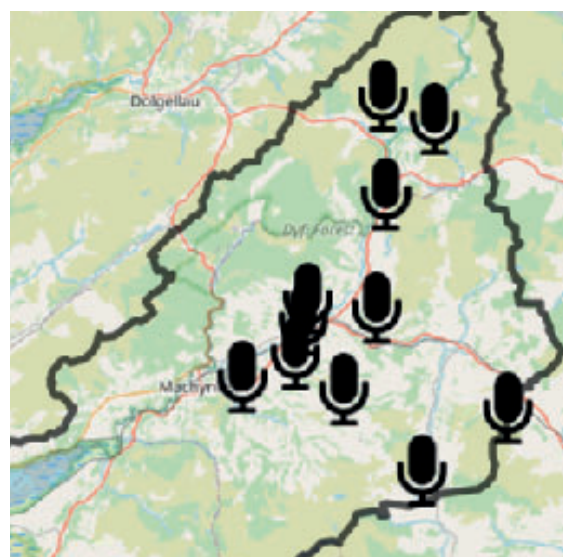


Figure 8: Oral histories map Dyfi biosphere

Credit: Author screenshot of portal reproduced with permission

This is why oral histories are important here, providing a “way of building bridges and engaging with all generations of the farming community” and documenting local knowledge before it is lost.⁸

Based on 19th century maps at the scale of individual fields, a map-based portal was created.⁹ This shows fields with the potential for reinstating historical farming activities, contemporary local enterprises involved in food production, and how crops will be affected by different climate change scenarios. Figures 9 and 10 show changes in land use from 1840 to today. The decline of arable land (brown), meadows (bright green) and common land (orange) is notable. Yellow indicates pasture land, dark green is woodland, and turquoise is upland. The analysis showed that:

⁷ Higgins 2021

⁸ Higgins 2021

⁹ <https://mf-embedded.duckdns.org/mf-alpha/all.html>

“The almost complete loss of traditional hay meadows is dramatic and goes a long way to explain the sharp decline in number of species and abundance of once common farmland birds.”

(Chris Higgins, Project Manager, Ecodefyi)

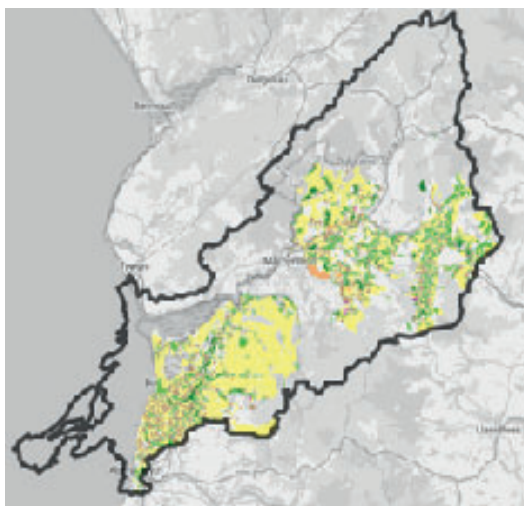


Figure 9: Land use in 1830 Dyfi biosphere
Credit: Author screenshot of portal reproduced with permission

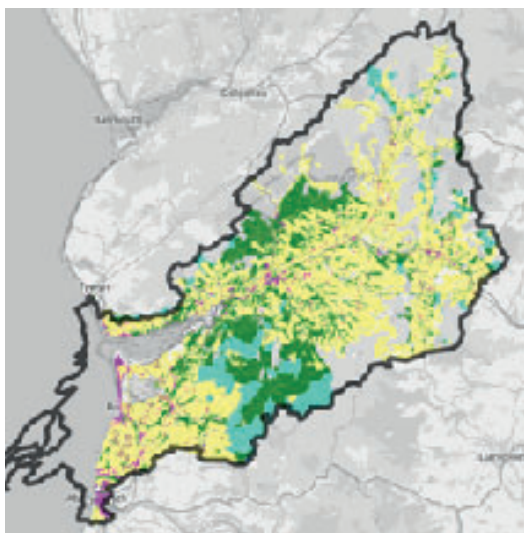


Figure 10: Land use today Dyfi biosphere
Credit: Author screenshot of portal reproduced with permission

Part of the project then also included modelling the suitability of particular crops based on future climate change scenarios.

For example, projected suitability of land in the area for rye growing in 2040-2069 (see Fig.11), based on a scenario of low carbon emissions. Models can be selected for higher emissions, different crops and different time periods.

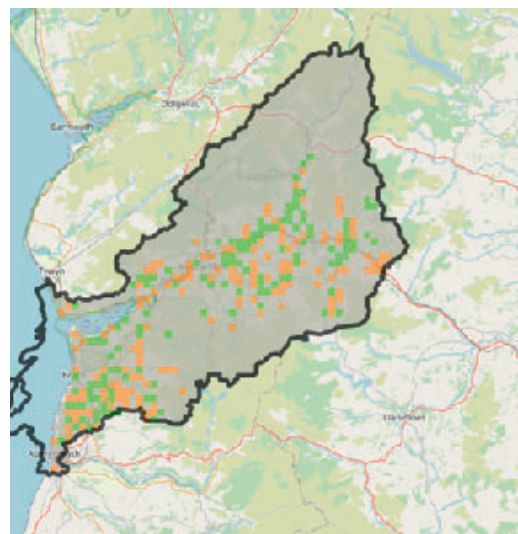


Figure 11: Suitability for crop growing map Dyfi biosphere
Credit: Author screenshot of portal reproduced with permission

Then, interactive ‘opportunity’ maps were created which show, on a field-by-field basis, the opportunities for growing crops in the Dyfi Biosphere. This takes into account three factors: historic use, carbon storage and risk of soil erosion. Areas of darkest red show the highest opportunities and lightest, lowest (see Fig.12).

A final element of the project is a producers and distributors map (see Fig.13). It shows those involved in the local Dyfi food system – the emphasis is on produce grown, sold and consumed in the local area using agroecological practices. It is explained on the map that:

“For us, it’s important to build the local



Figure 12: Opportunities map Dyfi biosphere

Credit: Author screenshot of portal reproduced with permission

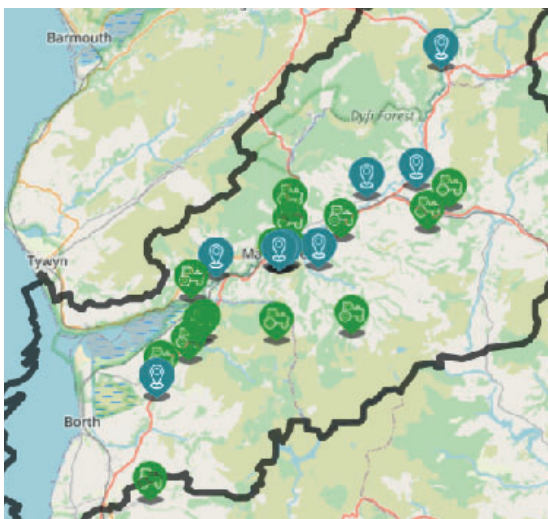


Figure 13: Producer map Dyfi biosphere

Credit: Author screenshot of portal reproduced with permission

food economy and develop the local market. It helps address the climate crisis, improves food security and, if grown using non intensive, nature friendly agroecological methods, helps address the loss of biodiversity in Wales”.

Within the project, and more broadly in Wales, it is recognised that “small, family farms are the cornerstone of Wales’ past,

current and future rural economy, culture and landscape.”¹⁰

There is a sense that “the people of Wales have a strong connection to the land, even if they are not Welsh speakers” (Andy Rowland, Manager, Ecodyfi). However, in the Dyfi Biosphere area in mid Wales:

“There is a strong correlation between the Welsh language and farmers. Most farmers speak Welsh, and that is another reason to support small farmers. So, a threat to the agricultural community is a threat to the Welsh language”.

(Andy Rowland, Manager Ecodyfi)

The issue of the sustainability of farming and the Welsh language – and associated cultural knowledge and practices – is a key challenge, with a need for better connectivity between them and urgent attention to prevent loss of this biocultural heritage.

To give an example, the Welsh word ‘Cynefin’. Translating the term into English is not straightforward. Its literal translation is ‘haunt’ or ‘habitat’ but it means more than this; “It describes that relationship: the place of your birth and of your upbringing, the environment in which you live and to which you are naturally acclimatised.”¹¹ This represents not just the physical landscape, but life within it, a way of relating to land that is embedded in social and cultural layers of connection. It combines two words for landscape, tirwedd and tirlun, with

¹⁰ Higgins 2021

¹¹ Credited to the artist Kyffin Williams

history, identity, and home.¹² This could be considered broadly synonymous with the Scottish Gaelic word *dùthchas* (see case study four). Indeed, the similarities between approaches to traditional crofting in Scotland – with mixed arable and livestock, low-intensity methods and high biodiversity approaches within Gaelic speaking communities – was noted by the Dyfi project, and it was originally an aim to include Scotland in the project.

Alongside language, there are broader differences across groups and farming communities, namely the sense in which certain groups are taking up new ways of working the land and doing food production:

“It is generally the younger incoming community of English speakers. Very different, culturally. So that’s quite an interesting dynamic which is rich and useful because it’s got new energy doing it. But there are tensions set up with the existing landowners and land managers and the farmers, seeing it as some kind of challenge and threat, and culturally different to them... They also feel threatened by the bureaucrats and the regulators. the likes of the wildlife trust coming and trying to tell farmers about their land, they would say well I know my land better than anyone.”

(Andy Rowland, Manager, Ecodyfi)

Those dependent on farming for their livelihood are perhaps more wedded to current systems out of economic necessity.



Dyfi Grain Growers. Credit: Kate Hastings

However, a follow-on initiative from the mixed farming project aims to bring together experts in agroecology and the small-holder network, reaching out to the Welsh-speaking farming community with resources to “encourage them to diversify and grow more food using agroecological practices”.

This should be contextualised by the wider forces which have shaped contemporary Welsh farming and the extent to which current conditions support a biodiverse environment:

“In mid-Wales, we’ve all become specialised since the 1950s really, driven by UK government policies and subsidies towards specialisation and basically sheep and beef. So, it’s grass. And those are traditional in a sense because most of that has had grass for a long time now, but it doesn’t have the same kind of biodiversity and cultural angle on it, as in Rhön Biosphere, for example, where there’s wet meadows, you know they are not

12 Rhodes 2019

monocultural in the same way that ours are. So, the bio bit is a bit weak in the Dyfi Biosphere to be frank.”

(Andy Rowland, Manager, Ecodyfi)

Underpinning the mixed farming project and the follow-on project is the need to respond to the climate and biodiversity crises, and create new economic models, such as doughnut economics which was supported by the project and proposes a new approach for the 21st century. As shown in the previous chapter, this has been adopted by the Welsh Government in recent years. The Wales National Development Plan recognises that:

“The Welsh Government wishes to see biodiversity enhanced and ecosystems become more resilient across Mid Wales. Policies 9 and 15 set out the national strategic approach and will ensure action to address the climate emergency, to reverse biodiversity decline and to ensure the wellbeing of communities takes place.”¹³

However, the Biosphere is not mentioned in this, with the emphasis on other designations such as national parks and Areas of Outstanding Natural Beauty. Hence the feeling that:

“The Biosphere is very well placed to contribute to policy, but it is not well recognised. The Biosphere was ahead of its time really and reflects all the sustainability policies of the Welsh Government. It is almost like the policy was catching up to the Biosphere. So,

it does align and reaffirms our principles and aspirations.”

(Andy Rowland, Manager, Ecodyfi)

Additionally, another area of tension is that, from the Biosphere perspective, agricultural policy has been focusing on sustainable intensification, which tries to maximise efficiencies of land for food production in a ‘land-sparing’ approach:

“[The idea with this approach is that if] we concentrate on squeezing as much food production out of small areas, we can spare a lot of land for nature. But that’s not going to work. I believe we need to share land with nature, adopt practices which don’t have as high yields but are sustainable.”

(Chris Higgins, Project Manager, Ecodyfi)

Agroecology is a ‘land sharing’ approach which tries to work with nature, offering a sustainable model with a strong social dimension. However, there are barriers to making a success of this and similar approaches; these barriers come from the wider economic context and continuing support for unsustainable models that do not account for negative externalities, such as biodiversity loss, loss of local knowledge and less resilience.

The project pinpoints two of the main issues that small scale agroecological producers face:

- Constantly being undercut by artificially low food prices, e.g. in supermarkets.

13 Welsh Government 2021

- Area-based subsidy systems that favour intensive agro-industrial practices and landowners with extensive holdings.

Hence the project draws attention to the wider social, cultural and economic values that are underpinning current food production and consumption patterns and preventing a shift towards more sustainable approaches to agriculture which are good for biodiversity and livelihoods.

Case Study 3: Upland Landscapes in Northern Ireland

This case study refers to work undertaken as part of the Mourne Mountains Landscape Partnership (MMLP) in Northern Ireland. This was funded by the National Lottery Heritage Fund through work by the Mourne Heritage Trust whose mission is:

“To sustain and enhance the environment, rural regeneration, cultural heritage and visitor opportunities of the Mourne Area of Outstanding Natural Beauty and contribute to the wellbeing of Mourne’s communities.”¹⁴

The Area of Outstanding Natural Beauty (AONB) is shown in Figure 14, although the MMLP covers an area larger than this to encompass surrounding communities. The MMLP is informed by a Landscape

Conservation Action Plan (LCAP), and wider plans for management of the AONB. The LCAP was informed by the European Landscape Convention definition of landscape, as well as the geographer Estyn Evans, “who believed that the intertwining of... habitat, heritage and history [informs] regional identity and sense of place.”¹⁵

From 2012, the Trust was funded to deliver the MMLP, with an overarching vision for the partnership as follows:

“By 2016 the Mourne Mountains will exhibit a mosaic of recovering heathland and the unique Mourne Juniper will be beginning once again to thrive. Farmers and large landowners will be co-operating in using a range of techniques to clear scrub, keep invasive species at bay and maintain native plants in good condition as well as the iconic dry-stone



Figure 14: Location of case study 3

Map sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCAN, ESRI Japan, Esri China, METI, Esri Korea, Esri Thailand, NGCC (c) OpenStreetMap contributors and GIS User Community & Contains NIEA, DAERA Data licensed under the Open Government Licence v3.0

¹⁴ Mourne Heritage Trust, <http://www.mournelive.com/>

¹⁵ Mourne Heritage Trust, <http://www.mournelive.com/landscape-partnership>

walls that criss-cross the area. Traditional folklore, handicrafts and skills will have been re-invigorated in community life and the people of Mourne will be involved in activities through which they show their awareness of, and pride in, the natural, cultural and industrial heritage of their uplands and they willingly share their history, stories and folklore with people who visit.”¹⁶

Alongside the Mourne Heritage Trust, other partners involved in the work included three local authorities (Banbridge District Council, Down District Council and Newry and Mourne District Council); four statutory agencies (Northern Ireland Environment Agency, Northern Ireland Tourist Board, Dept. of Agriculture and Rural Development, and Geological Survey of Northern Ireland); two landowners (Northern Ireland Water, The National Trust); and the community and voluntary sector (Alliance Youth Works, Annalong Community Development Association and Country Down Community Rural Community Network).

It is stated that:

“Local communities will be at the heart of the Landscape Partnership. Skills training and wide ranging participation will allow local knowledge to be shared in a variety of ways. A drive to re-invigorate traditional folklore, handicrafts and skills in communities will ensure the natural, cultural and industrial heritage of the Mournes is

preserved and shared with their visitors. Professional expertise will be brought by key partners such as Northern Ireland Environment Agency (NIEA), National Trust, District Councils and County Down Rural Community Network among others, while trail designers, conservation architects, interpretation and storytelling experts and a range of other professional disciplines also make a valuable contribution.”¹⁷

For the Mourne Heritage Trust the project was a response to the concern that, without dedicated effort, the heritage of the area would continue to be lost, as much already had been. Stories of bygone days invoked people to think through the possibilities of projects and ideas to make these stories, skills and traditions come alive again for local people today. It was suggested that many aspects of heritage were not currently being passed down to young people and would be lost without action. A key part of the project for the Trust was therefore managing the forces for change and they argue that:

“It is important to remember that the landscape we see around us today is a chapter in time; it is somewhere in the middle of a story. We are not at the beginning, nor at the end. We are part of a world not set in stone but constantly moving and changing around us, although often so slowly we are completely unaware of it happening.”¹⁸

Some of the key activities and objectives

16 Mourne Heritage Trust, <http://www.mournelive.com/landscape-partnership>

17 Mourne Heritage Trust, <http://www.mournelive.com/landscape-partnership>

18 Mourne Heritage Trust

achieved through the partnership work include the restoration of peatlands (e.g., through dams) and of heathland habitat. The Mourne support some of the most extensive and important tracts of upland heath in Northern Ireland, which are also of European importance.¹⁹



Young people re-profiling eroded peat banks. Credit: Mourne Heritage Trust

Yet many are disconnected from this landscape, including local young people who through the MMLP were encouraged to be “reconnected to this essential element of their life, community and heritage.”²⁰

The Landscape Partnership worked to monitor and restore the declining Mourne juniper population, which is a priority species in the UK. Juniper was one of the first plants to recolonise the landscape of Northern Ireland after the last glaciation.

It is thought to have declined by up to 60% throughout Britain since the 1960s, possibly due to increased agriculture and overgrazing by cattle, sheep and goats.²¹ Action to conserve the species was vital in the context of risks from wildfires, partly a result of a reduced upland grazing and a lack of fire breaks, and the resulting fear of losing large numbers of plants that are genetically unique. Within the work of the Landscape Partnership, juniper was surveyed, propagated and replanted; this work involved volunteers, such as mountaineers who planted juniper in inaccessible areas. This had the added benefit of raising awareness in the mountaineering community of the conservation value of juniper.

Additionally, the Landscape Partnership undertook efforts to restore dry-stone walls, a prominent feature of the landscape; traditionally these boundaries were built with local Mourne granite. A key aim was to teach the traditional skills to preserve them for the future. It is explained that:

“The dry-stone walls of the Mourne are a treasured part of our national heritage. Built with world famous Mourne granite, they not only reflect the traditional skills of the local stone men but the distinctive geology, wildlife, culture and agricultural traditions of the area too.”²²

An aspect of this was the production of a film called ‘Down Memory Lane in the

19 Newry and Mourne District Council 2009

20 Not-on-the-shelf: Natural Heritage: The Mourne Mountains. Teacher Resource: <http://www.allianceyouthworks.org.uk/docs/eden/MourneNaturalHeritageProgramme.pdf>

21 Newry and Mourne District Council 2009

22 Mourne Mountains Landscape Partnership 2017



Dry-stone wall restoration work. Credit: Mourne Heritage Trust

Mournes' using vintage footage and sharing the narratives of workers in the granite industry. Oral histories and storytelling captured the area's rich heritage, including stories that convey how the landscape has been shaped over the years, not least by the once thriving granite industry. These were often with older residents, who would otherwise be passing on without sharing their knowledge and memories:

“He unfortunately passed away about two years ago... I think he was about 92 when we interviewed him. We knew at that stage it was vital we got his oral history because he had a fantastic memory.”

(Camilla Fitzpatrick, Sustainable Tourism Manager, Mourne Heritage Trust)

The outcomes of the work were to increase awareness of heritage and an understanding of the impact of granite excavation, as well as rekindling the skill of storytelling itself. The granite trail and a series of events aimed to engage people with the significance of Mourne granite.

However, working with heritage that exists in living memory can be challenging in terms of how such practices are valued. In the Mourne area “the working connection some people have to the uplands... was almost severed quite abruptly” and people have turned away from the mountains (Martin Carey, CEO, Mourne Heritage Trust).

Up until the '50s and '60s people earned a living from the mountains, through farming, quarrying and the building of reservoirs,

but with the decline of these industries, people left the hills and there is a sense in which they are perceived as a place one went to for economic necessity, rather than cultural connection. Past endeavours of building the likes of the Mourne Wall in the mountains are remembered as difficult times, with people now far better off, albeit recognising this would have been a welcome source of income at the time. Today, the granite industry has become niche, and stone-masonry is a specialism, a skilled, prestigious career, where those contracting the skills pay highly for them. This brings challenges around continuing the use of traditional skills and materials more generally, when for example publicly funded building projects and policies incentivise the use of the cheapest materials to keep costs down, including importing granite from China.

In relation to the difference made by the Landscape Partnership, reported outcomes²³ include:

“Kept alive traditions that are important to residents across the Mournes and in doing so allowed people the opportunity to pass on these skills to others.”

“The resurgence of interest in pastimes, industries and skills once vital in homes throughout the Mournes and these islands by providing opportunities for young and old to participate in workshops offering heritage skills which are endangered in modern lifestyles.”

These activities involve the kinds of local and traditional knowledge and skills invoked



MMLP Traditional skills and crafts activities.
Credit: Mourne Heritage Trust

by biocultural heritage approaches as well as the key emphasis on intergenerational transmission of knowledge and interaction.

Other outcomes include:

“Increased sense of ownership and commitment to maintain the heritage of the Mournes from local communities surrounding and in the Mournes area. [...] communities that have traditionally seen themselves as separate now see themselves as more closely linked to the Mournes due to historical and storytelling projects.”

“Increased interest in Mourne biodiversity, which leads to greater respect for the natural environment and the flora and fauna of the area.”

The Landscape Partnership offered an opportunity for Mourne Heritage Trust to engage with communities in new ways, and with new community groups. Previous engagement around environment and land

23 Mourne Mountains Landscape Partnership 2017

tended to be with landowners and male-dominated groups, whereas the different traditional skills and cultural heritage activities funded through the Landscape Partnership opened the doors to a more diverse range of people and “helped communities deliver projects that were important to them” (Camilla Fitzpatrick, Mourne Heritage Trust). For communities the Trust is a local point of engagement, an intermediary between local and larger regional or national organisations, in a context where the latter can be seen as less flexible and adaptable and as presenting communities with ‘red tape’ and bureaucracy.

Engaging with communities, took longer than anticipated and required a sustained effort using multiple approaches. This was seen to be a worthwhile investment though, because:

“We opened up these channels of communication that have never existed before and then suddenly we were no longer an organisation that they hated... So, for the first time ever, I think we engaged with the community on a different level”.

(Camilla Fitzpatrick, Sustainable Tourism Manager, Mourne Heritage Trust)

Negative perceptions of the trust, and difficulties around community engagement are linked to the Trust’s role in the 2000s national park campaign for the Mournes. There are no national parks in Northern Ireland to this day. The 2000s campaign faced strong opposition locally from some farming groups, which subsequently made

it difficult to then engage with those voices. This was felt to be contextualised in the country’s history of land ownership and rights.

Following the Irish Land Acts of the late 19th and early 20th century, large landed estates were broken up, and former tenants were supported by the government to buy land. For those former tenants and their descendants, they now guard “what they see as their rights over their land very closely and don’t want any interference in it” (Martin Carey, CEO, Mourne Heritage Trust). This history has translated into narratives of family attachment to the land and an unwillingness to part with land and to see a return to the days when the land was owned by large landlords.

These attitudes, rooted in collective memories about the history of land ownership and rights, are accompanied by a sense of the economic value of land for such families, with the feeling that a national park undermines land ownership and the ability of owners to use land as an economic asset, and to develop it as they so choose.

“Where ownership of these small parcels of marginal land actually became an escape from poverty for people, so a lot of the thinking soon became, ‘Well that’s why I value it, not because it supports particular biodiversity or my antecedents who quarried granite out of it.”

(Martin Carey, CEO, Mourne Heritage Trust)

The focus on this economic value of land

has been detrimental, broadly speaking, to the ways in which land is used, which is reinforced by policy frameworks that do not always value land for its productivity, heritage or biodiversity values.

“With a pattern of lots of small, individually owned farms, the introduction of the Common Agricultural Policy underpinned a style of farming that meant you don’t actually have to farm the land, but can simply own the land and generate income... the whole subsidy thing has facilitated retention of land under agriculture that otherwise would have been uneconomical to farm. But it’s what many people know and it’s now their heritage.”

(Martin Carey, CEO, Mourne Heritage Trust)

Hence the importance of understanding the cultural and economic values which underpin how heritage is understood over time:

“What some of the farmers who have been active here for the last 40 or 50 years would now see as their culture, which is the likes of sheep and cattle farming, large sheds and farm machinery, is not what many would see as the heritage e.g. building stone walls and the previous transhumance... in other words what some of us who try to work in heritage and folks coming into the area see as actually reviving the heritage, some see as actually taking away what they now

see as their working heritage. “

(Martin Carey, CEO, Mourne Heritage Trust)

Hence what is valued as heritage is continually changing over time, and it is contested. Cultural and economic values not only underpin how heritage is viewed but are tied to the future viability of resilient livelihoods in the area. The ability to sell parcels of land as house sites for high prices, whilst bringing economic benefit to current owners, presents barriers of availability and affordability for people who want to access land to live a land-based lifestyle. Similar to Wales, there is a sense in which:

“Folk actually do seem to want to connect with the land now are more often likely to be the folk looking to come in from outside than the folks who actually live on it, some of whom maybe take a lot of its inherent characteristics for granted and don’t particularly value them as much.”

(Martin Carey, CEO, Mourne Heritage Trust)

The issue of balancing individual and collective interests and rights becomes prominent here and connects back to the historical context in which changes in land ownership have shaped current connections to landscapes and ideas of rights to land. The individualisation of property ownership, for example, is associated with a lack of cooperation, and the value of land as property presents barriers for younger people being brought into farming.

In existing governance arrangements such as related to Shared Grazings Trusts, the trustees hold governance of land and trustee positions have tended in some cases to be passed down through families. These factors combine with the effect that different members of the local community have differing opportunities to influence decisions about the land and its management and use. Currently, issues of access to land including for recreation, and the need for collaborative conservation efforts are inconsistently managed:

“There’s a kind of an odd situation there in terms of those lands and how they’re governed. Unlike Scotland, we have no significant rights of access to the countryside, so most of the access to the Mourne is what we call de facto. There’s no legal right, it just happens to have been tolerated for decades. So, it’s not an ideal context for promotion and management of access. There are a number of the trustees who are very alive to the need to provide outdoor access. Particularly having seen the pandemic effect... now their own neighbours need that for their health and wellbeing. So, you will have some who want to work with public authorities to provide car parks at some of the access routes, many of which are old quarry tracks, but they find resistance among the trustee group.”

(Martin Carey, CEO, Mourne Heritage Trust)

Partnership came to an end in 2017 and the Trust has struggled to maintain the same level of activity without the resource. Something which affects all projects funded over a short-term timescale is that sense in which:

“In terms of long-term delivery and achieving more goals, I suppose it does come to an abrupt end... suddenly you’ve got really very little to work with”

(Camilla Fitzpatrick, Sustainable Tourism Manager, Mourne Heritage Trust).

It is felt that the kind of work undertaken in the Landscape Partnership needs to be made more of a priority, with continuity of funding available to continue the work and ensure resources are there to have a very active and engaged community.

The funding and activities for the Landscape

Case Study 4: Marine Conservation and Heritage in Scotland

This case study considers the theme of marine conservation, heritage and fishing in north-west Scotland. It focuses on Wester Ross which “has been known for its fishing for hundreds of years”¹ and which is designated as a UNESCO Biosphere including coastal waters and Marine Protected Areas (MPA) as indicated in Figure 15. The special marine qualities of the biosphere area include:

“A wide variety of marine and coastal habitats, from exposed promontories and islands like Rubha Reidh and the Summer Isles, to the sheltered heads of long sea lochs such as Loch Torridon, Loch Duich and Loch Broom. These sea lochs are true fjords, with

ice-scoured basins separated from each other, and from the open sea, by relatively narrow and shallow sills found only on Scotland’s west coast.”²

Cultural heritage is also a central aspect of the biosphere designation, such as for Gaelic language and crofting. The biosphere is a community-led organisation, and many projects integrate the natural and cultural heritage of the area such as SHAPE and CULTIVATE, which are a case study in a recent report on biocultural heritage.³

The case study area also extends out west towards the Outer Hebrides with two further MPAs shown in Figure 15. These are part of the Scottish MPA network, which covers approximately 37% of sea area and denotes:

“sites for nature conservation, protection of biodiversity, demonstrating sustainable management,

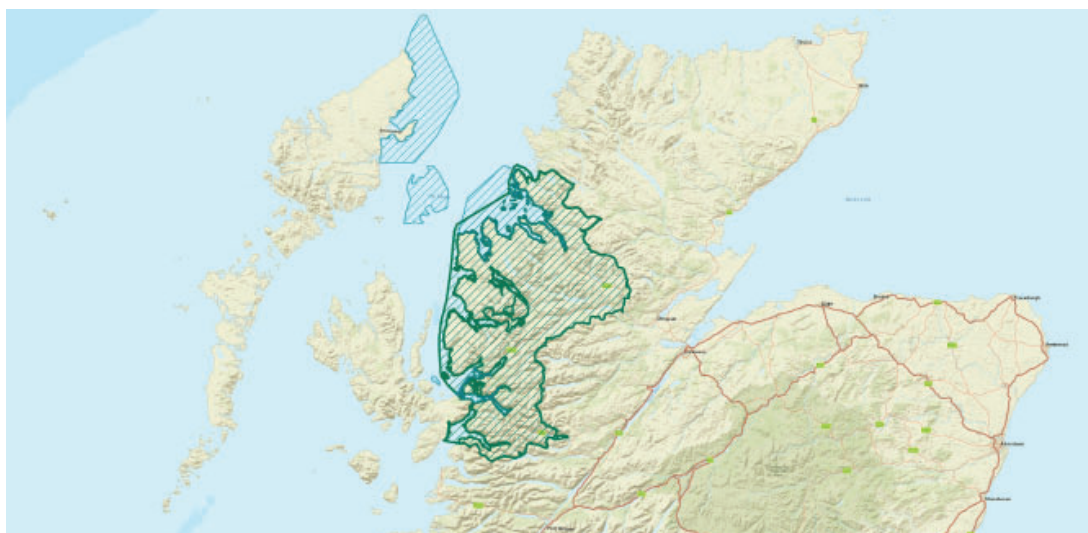


Figure 15: Case study area with designations (blue MPAs, green Wester Ross Biosphere)

Map sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCAN, ESRI Japan, Esri China, METI, Esri Korea, Esri Thailand, NGCC (c) OpenStreetMap contributors and GIS User Community & Contains NatureScot information licensed under the Open Government Licence v3.0

1 Neervoort, 2013, p.43

2 Wester Ross Biosphere, Coast and Seas Profile, available at: www.wrb.scot

3 see Gilberto et al. 2021

and protecting our heritage.”⁴

The MPA network is set within the wider National Marine Plan for Scotland, but a Marine Planning Partnership has yet to be established for the case study area. Since 2016, there has been a west coast inshore fisheries management group, but this covers an area far larger than the present case study area.

This case study does not focus on one particular project but looks at broader activity in the outlined area. The case study was developed through engaging with the Wester Ross biosphere and local residents knowledgeable about the marine environment. Beyond the biosphere itself, there are a number of relevant campaigns, organisations and projects in the Northwest of Scotland dedicated to marine heritage and environment.

The Coigach and Assynt Living Landscape Partnership highlights that “the culture and prosperity of Coigach and Assynt has been linked to the sea for centuries but as sea health has diminished many of those links have been lost.”⁵ Their marine project aims to increase awareness and knowledge of the area’s marine heritage and how people can engage with it, and thus ultimately foster more appreciation and protection of ‘this important asset’ from an environmental, social and economic perspective.

This includes working with a young person’s

campaign group in the area, Ullapool Sea Savers. A key concern for this group is preventing the practice of kelp dredging, given the desire of companies to dredge kelp in large quantities creating a negative environmental impact and very little local benefit to coastal communities. Kelp forests are known to be one of the most dynamic and biodiverse habitats on the planet and store a significant amount of atmospheric carbon.⁶

Currently kelp and seaweed can be harvested by people by hand, and there are strict controls around this to ensure seaweed can regenerate, limiting habitat changes with all by-catch needing to be recorded. Despite their successful campaign, the group warns Marine Scotland’s ‘Harvest Review’⁷ may be



Ullapool sea savers activity. Credit: Ailsa MacLellan

4 Scottish Government, <https://www.gov.scot/policies/marine-environment/marine-protected-areas>

5 CALLP <https://www.coigach-assynt.org/project/marine-project/>

6 Ullapool Sea Savers <https://ullapoolseasavers.com/campaigns/nokelpdredge>

7 For an overview of seaweed harvesting and cultivation in Scotland see: <http://marine.gov.scot/sma/assessment/seaweed-harvesting-and-cultivation>

another opportunity for companies that want to dredge to make their case.

The Isle Martin Seaweed Festival aims to celebrate all of the sustainable uses of seaweed, whilst educating about ecology and conservation, as well as giving a historical perspective.

An archaeologist is leading on a Historic Uses of Kelp Project which is:

“demonstrating that while dredging is destructive, it is possible to harvest quite large quantities without destroying the kelp beds, as shown by historical evidence. Back in the 18th century the kelp shores were carefully managed, leaving up to 4 years between harvests.”

(Cathy Dagg, Archaeologist, Wester Ross)

There is limited historical and archaeological evidence surrounding the uses of seaware in the case study area, but seaweed is generally known to have been of great social and economic importance in Scotland as a source of medicine, food, fodder and fertiliser.⁸

There is some information collected from the Outer Hebrides in the 18th and 19th centuries about Gaelic names and different seaweeds collected for manuring different crops, and there is also some associated superstitions, prayers and offerings associated with good seaware harvesting.

Hence there is evidence of a strong cultural

relationship, but much of the traditional knowledge around this appears to have been lost on the mainland. The majority of sources from 1790 onwards relate to the commercial value of seaweed and come from the writings of the landowners, the major tenants and the merchants, all the people set to profit from its exploitation. “The voices of the people who did the actual work cutting, drying and burning the kelp for industrial use are completely silent” (Cathy Dagg, Archaeologist, Wester Ross).

Today, very few people in the Ullapool area know much about the kelp industry, and the practice of using seaware as a fertiliser has almost died out. There are no surviving kelp cutting songs, or kelp burning incantations, which may be related to a cultural disconnect associated with the forced labour of the industry.

The boom and bust of the kelp industry, historically at its peak between 1770 to 1825, was a time of hardship for many communities.⁹ Indeed, “the poem *The Song of the Seaweed Gatherers* uses the difficulty of collecting seaweed as an allegory for the suffering of the Gaelic people in the 19th and 20th centuries as a whole.”¹⁰ Key to this is how seaweed gatherers and kelp producers would often make nothing from their labours. The money made from selling the kelp to their landlords was set against their rents, which it invariably failed to cover.

Reflecting on the use of seaweed in

8 Kenicer et al. 2000

9 Grant 2019

10 Grant 2019

Scotland over time, it is “international competition which threatens the livelihoods of local small-scale collectors, and most of these industries are supplied by foreign sources.”¹¹

In terms of the current situation:

“Seaweed farming has the potential to create sustainable jobs in remote coastal communities, with the benefit of acting as a carbon store and reducing the temptation for alginate companies to dredge our native kelp forests. There is the opportunity to develop this industry responsibly for the benefit of communities, without damaging the environment.”¹²



Seaweed hand harvested for local consumption. Credit: Ailsa MacLellan, Scottish Seaweed Information

Another key concern locally is the issue of unsustainable scallop dredging, highlighted by the campaign group, Sea Change, who were involved in petitioning for an MPA for Wester Ross. One of the key arguments being made is around the inability of MPAs,

as currently managed, to tackle issues of historic and contemporary degradation of habitats:

“Often Marine Protected Areas protect just small remnants of once extensive habitat that provided the basis of our inshore biodiversity. By protecting only these surviving remnant features, there is no chance for habitats and species to recover or expand back into areas where they have been lost.”¹³

Moreover, there is also the concern that:

“By ring-fencing the best areas with the highest density of priority marine features, we have essentially written off all the other priority features that are not in the MPAs”

(Bally Croft, Wester Ross, creel fisherman).

Within MPAs themselves, despite covering 37% of Scottish seas, still less than 5% of inshore waters are protected from trawling and dredging.

Currently, bottom-trawling is allowed in 90% of our coastal seas, dredging in 95%¹⁴, leading to the argument that:

“They are just MPA in name, it doesn’t mean anything. There’s a lot of talk ... from a lot of the big conservation bodies that we want 30% protected by 2030, but we’ve had a decade of serious decline, and it’s now 2021.”

(Ailsa MacLellan, Coordinator, Our Seas)

11 Kenicer et al 2000

12 Scottish Seaweed Information. <https://scottishseaweedinformation.wordpress.com/>

13 Sea Change Wester Ross

14 Our Seas

There used to exist a three-mile limit on trawling inshore which was removed in 1984. In research related to the decline of the herring industry in Wester Ross, the abolishment of the three-mile limit by the government, recognised that “big trawlers already came into the lochs illegally”, however it is argued that “with this step, the last local fishers disappeared.”¹⁵

This sits within a broader historical context where, in the pre and post-war years:

“herring stocks were abundant and local men enjoyed access to the fishing grounds without legislations and licenses. Herring fishing tended to be undertaken as an additional activity to crofting. There is now little of that style of fishing left as technology and vessel power increased in the 1960s, 70s and 80s, supported by Government grants. Bigger boats with new technology then entered the sea-lochs and ‘fished-out’ most of the local waters.”¹⁶

The creation of the Sea League in the 1930s, by John Lorne Campbell and Compton MacKenzie in Barra, was an attempt to secure the rights of fishermen to control island waters and protect them from trawlers. This was largely unsuccessful and today fishing in the north west is dominated by industrial fishing, including that done locally but predominantly that done by trawlers from other countries. Current conservationists inspired by the campaigning of the Sea League are drawing on this history to bring attention to the



Fisherman in Wester Ross. Credit: Ann Hoffman

ongoing problems with how waters are fished and managed today.¹⁷

Reflecting on the removal of the three-mile limit, it is argued:

“No one consulted with the creelers that were fishing inshore, and that destroyed a lot of livelihoods in itself. It’s a really quick change that we’ve had, it’s like a really rapid degradation in the environment, that hardly anyone can see... Based on the Scottish Marine Assessment 2020, which monitors impacts on priority marine features such as seagrass kelp, flame shells have shown no improvement. Most things have declined, and some things have declined to horrific extent. When you’re talking about acres and acres of seagrass off Lewis. Fishing and fishermen numbers are plummeting. What are Marine Scotland waiting for?”

(Ailsa MacLellan, Coordinator, Our Seas)

¹⁵ Neervoort, 2013, p.43

¹⁶ Neervoort, 2013, p.43

¹⁷ <https://thecannastory.com/extracts/join-the-sea-league-2/>

The case for bringing back an inshore limit is based on helping to recover habitats and enable productive, resilient fisheries.¹⁸ As a creel fisherman from Wester Ross outlined:

“We could have two to four times more fishermen employed on the west coast, without catching any more prawns and with a fraction of the environmental footprint if we allocated more fishing opportunity to creels. Presently its a free for all with the trawlers operating de-facto area management to suit their interests and to the serious disadvantage to the creel fishers, this is resulting in less livelihoods being supported and poorer returns to adjacent communities from any given area. It is also causing very high creel densities in some areas and consequent sustainability and gear conflict issues.”

Bringing the cultural and social issues to the fore appears to be an important aspect of what is perceived to be needed here, with the research and science not enough to create opportunities for change:

“We all know the facts about global warming and carbon sinks. And what happens when you dredge up inshore mud and nobody’s really doing anything, and politicians won’t do anything unless they think people care. So, trying to get people to understand what they’ve lost and that it is part of their heritage and to fight for it. Instead of just thinking

it’s nothing to do with them.”

(Ailsa MacLellan, Coordinator, Our Seas)

Historically, where more people in the community were actively involved in fishing and crofting, knowledge of the land and seascape would have been more widespread. The fishing industry is now a fraction of what it was a few decades ago, signalling a loss of both cultural and social values and traditional knowledge as well as the decline in biodiversity. However, the past should not be romanticised, as “the idea that these livelihoods were ever resilient is open to question, it was always precarious” (Gordon Cameron, resident/researcher).

When people were cleared to the coast in the 18th and 19th centuries and given small crofts which were insufficient to provide for all their needs, they were forced into other industries like fishing. It was hard to make a living, even when species were more abundant, and there is cultural memory around ‘famine foods’ such as, mussels, welks and barnacles, eaten in desperate times in the 1850s when crops were failing. Today, communities are heavily reliant on tourism and, again, this does not necessarily create resilient livelihoods with many poorly paid, seasonal jobs and in-built precariousness. There is a perception that it’s becoming harder and harder to build in resilience, understood locally in the context of wider market forces. For example:

“After COVID started it quickly became apparent how reliant we were on really complicated food chains of

18 Our Seas

getting shellfish to Spain and getting stuff to restaurants and that people didn't have much opportunity to fall back on different species. And British, well Scottish people mainly just want to eat Haddock. They don't want to fork out for prawns, so we were talking about food security a lot. And that people must have the right to feed themselves."

(Ailsa MacLellan, Coordinator, Our Seas)

During the pandemic, fishermen were able to sell their catch locally but, ordinarily, many of the products such as lobsters and scallops are 'elite' products and would be exported for a higher price than locals can afford to pay.

Set in a historic context, there has been



Cruise ship and local fishing boats in Wester Ross. Credit: Ann Hoffman

a metaphorical and actual 'race to the bottom', as you have to go deeper to find species with the decline of fish stocks due to industrial fishing. "From silver darlings [herring] to bottom feeders in 50 years" (Gordon Cameron, resident/researcher). The variety of species being caught has

dramatically changed and Brexit has added to the challenges faced by the industry in terms of exports. Local people are not used to eating the species that are being caught, which are popular in places like Spain and China. Likewise, seaweed is rarely consumed locally as part of an everyday diet anymore, but is sometimes sold for wider markets as salt replacement and in toiletries.

The possibility to change use of resources locally to support resilient coastal livelihoods is hampered by regulatory hurdles, which work against small producers and communities doing things for themselves. It is argued that:

"Communities can be resilient if they are enabled to make their decisions, and if there is a support framework which enables them to direct their own path forward"

(Gordon Cameron, resident/researcher).

More so than land, the sea is framed as an open resource which is susceptible to over-exploitation and there are tensions between different user groups, namely the mobile fishing sector, conservationists and creel fisherman. The Our Seas campaign group bases its name on the argument that:

"In ownership terms, the sea is not owned by anyone – it is a commons. In broader terms, the sea and fisheries belong to all of us; they are a common resource, and their health is our collective concern. A healthy seabed is the cornerstone of sustainable, profitable inshore fisheries, and underpins the success of many other marine businesses and activities. This

promotes a shared awareness of the interconnection between people and the life in our sea. As well as the provision of food the marine environment provides a number of services which contribute to human wellbeing including regulation of climate, and mental and physical health benefits. For those of us lucky enough to have access to our coastal seas these benefits cannot be overstated. The benefits of marine environments for our wellbeing are tied to the health of those environments – and conservation efforts need to factor in what some call ‘natural capital’.”¹⁹

The idea of the commons has been cited as something which could create a platform for integrated approaches to biocultural heritage management and rural development, incorporating a range of

stakeholders such as landowners, citizens, public representatives and researchers.²⁰ However, in the fishing context, there is a sense in which individualisation makes this difficult to achieve, both in terms of getting people on the ground to work as a collective and in terms of the way states and agencies currently operate.

The individualisation of fishing is partly because of the practicalities of crew sizes becoming smaller, but there can be a difference in mindset around fishing with few arrangements in place for common or collective approaches to managing resources of the sea. A simple example is that of how catch can be graded differently, with one boat throwing back any pregnant female prawns they catch, and another boat keeping everything, taking the future catch out of the sea.



Local fishing boat in Wester Ross. Credit: Ann Hoffman

19 Our Seas, Available: <https://www.ourseas.scot/frequently-asked-questions/>

20 Lindholm and Ekblom 2019

“There’s the idea of the commons, two people living 50 yards apart, same methodology, same fishery, completely different philosophical approaches.”

(Gordon Cameron, resident/researcher)

An additional difficulty is the sense in which many of the officials and agencies involved in conservation and making the decisions about governance are people from outside of the locality, or incomers to the area who might have no direct life experience of being out in the sea. Hence creating common ground is difficult where there are stark differences between those dependent on the sea for a precarious livelihood and those advocating for its protection and changes to current practices. Although the two are not necessarily mutually exclusive, there is a gap between them to be bridged.

This brings to the fore different ways of knowing the sea, especially the contrast between that which is based on cultural heritage and traditional knowledge and that which is rooted in scientific methods.

This has been explored in the context of Barra, through the project Dùthchas na Mara:

“While the fishermen’s knowledge of the seas may not have the perceived objective precision that is characteristic of natural science’s understanding of the marine environment, the fishermen’s knowledge is, arguably, more complete in that it is closer to a total field of understanding, having

both practical and emotional power. For many hundreds of years this knowledge has played a key role in supporting the island people’s subsistence and distinct identity... the names fishermen have given to areas of the seas around them can help them to understand the nature, and the potential dangers, of the places they are working in.”²¹

For local fisherman, “finding fish was based on local knowledge, and signs [for example] the best fishermen could locate the herring by listening for the sound of the shoals moving” (Gairloch Heritage Museum, 2013)²², or identify fish based on which birds were diving, and by feeling the vibrations of the fishing line.

The overall decline of fishing as part of a local livelihood goes hand in hand with the decline of the Gaelic language, an obvious loss of biocultural heritage in terms of specific ways of engaging with and knowing the sea. With the decline of Gaelic language has come the loss of cultural knowledge and practices. The knowledge that is being passed down is not often being used anymore.

The Dùthchas na Mara research on these issues in Barra points to the deep cultural roots of current political conflicts and brings to the fore knowledge that tends to be marginalised to folklore, and not taken seriously by governments or policymakers. It is worth quoting the report at length here:

“the fishermen’s testimonies reveal

21 MacKinnon et al. 2012

22 Neervoort 2013, p.38

an appreciation of the natural world that is immediate, functional and practical — a natural world in which the island people are an integral and necessary part. This appreciation, in turn, reflects the international policy environment's interpretation of the Convention on Biological Diversity which understands humans and nature as interconnected within the same ecosystem. The existence on these Gaelic-speaking islands of a strong body of traditional knowledge that has emerged from the island people's long and close relationship with nature, alongside the existence in international law of a framework which gives value to this knowledge, has the potential to connect different ways of knowing the marine environment. It is likely that the current lack of connection between these different ways of understanding the world contributes fundamentally to the ongoing conflicts on the islands. We believe that finding a place for each of these 'worlds' within the other could give rise to a richer way of knowing and understanding the seas to which we belong."²³

However, one barrier to wider recognition of such ways of knowing, is that the UK government has not ratified the Convention for the Safeguarding of the Intangible Cultural Heritage, which recognises explicitly the value of cultural diversity including traditional knowledge and language. Whilst there has been some

recent attention to Gaelic and ecosystem services, with a report commissioned by NatureScot²⁴, there is nothing currently in Scotland which addresses the kinds of concerns outlined in *Dùthchas na Mara* and in this case study. Namely, the diverse ways of knowing the seascape, and mechanisms to manage seascapes in ways conducive to both conservation goals and creation of resilient livelihoods which from a historical perspective have been consistently undermined over time.

Conclusion

Mapping case study 1 against the revised biocultural heritage model, this case study clearly incorporates biodiversity, landscapes and seascapes, local knowledge and cultural, social and economic values.

Biodiversity and landscape/seascape are seen in the efforts of the project to use these resources as part of a sustainable tourism offering rooted in biocultural heritage activities. This has a strong component of connecting with the local environment, as well as the overarching aim of protecting biodiversity from the negative impacts of tourism. There are a variety of habitats, species and landscapes covered in the broader geographical remit of the project, and an important aspect is the connection between these different landscapes, which is central to the wider context of biosphere designation of a large area where integration of nature and culture is key.

²³ MacKinnon et al. 2012

²⁴ Maclean 2021

Following on from this is the concern with local knowledge and values, which, in the context of the Biocultural Heritage Tourism project, are connected to the development of activities and products which contribute to local livelihoods and celebrate cultural diversity. For example, videos show life on the living coast, and the ethos behind particular businesses captures the interconnections of local values, knowledge and practices. The aim is not simply to transmit this to visitors to the area, but to engage with the resident population too, who can benefit from engaging with distinctive forms of biocultural heritage.

The component of participatory governance is less evident in this case, but the Biocultural Heritage Tourism project does ultimately try to speak to the outcome of resilient livelihoods and wellbeing by ensuring that people can live and work sustainably in the areas concerned. However, arguably, re-framing the original concept of biocultural heritage in a more limited way, as an approach to tourism, has diminished its capacity to support that ultimate outcome, particularly by de-emphasising the rights-based participatory governance aspect and divorcing this from the other elements of the biocultural heritage framework.

Rights-based, participatory governance is about forms of participation, and the ways people are being included/excluded, their access to resources and their access to decision-making. Whilst this may be a

feature of the project in the sense of trying to empower local populations to better manage and make decisions about tourism, this seems much less extensive than the kind of empowerment envisaged in the biocultural heritage model. This case study raises important questions about what it will look like to implement biocultural heritage approaches in the UK and whether important aspects of the framework may be lost in translation as it is filtered through the mesh of established policy, institutional and economic structures.

There is a danger that biocultural heritage will be commercialised, or that the concept will otherwise lose power to promote the interests of local communities and of different people and groups within them.

“Products based on local biological and cultural diversity are sometimes seen as a sustainable development pathway [however] questions persist... surrounding how mobilising collective biocultural heritage as resources to meet certain development objectives may shape regimes of resource use, access, benefit and social inclusion within a territory.”²⁵

The concern here is that – when biocultural heritage is reduced to a matter of products and services – it comes to serve the interests of a few, operating in ways that contribute to patterns of social exclusion. Key questions that need to be asked in this context are “is biodiversity supported?... are a range of people economically better

25 Turner et al. 2018

off?... are relationships with biocultural heritage validated and enabled?"²⁶

Mapping case study 2 against the revised conceptual model, it also invokes the four interconnected elements of biodiversity, landscape, local knowledge, and cultural, social and economic values. In terms of biodiversity, this is prominent within the biosphere designation itself, but also within the specific dynamics of the project based on the principles of agroecology. Landscape is also important in this case study, both in terms of the aim of reconciling agriculture and ecology and in terms of creating a deeper knowledge of historic land uses and combining this with oral histories to bring the specific landscape memories of place to life. This goes beyond mere characterisation of the landscape as it is, to mapping out possibilities for the future based on an understanding of the past, for example potential areas for crop growth and modelling this in relation to climate change scenarios.

This speaks to the theme of creating resilient livelihoods. Wellbeing was not a core aspect of the project, but it was recognised that the wellbeing agenda is growing stronger in Wales and the biosphere has been and is looking to make stronger connections to this agenda in other projects.

As with case study 1, the area that has seen least attention here – at least so far – is rights-based participatory governance. When it came to issues of land ownership and the governance of land, these were

certainly discussed as relevant factors, but the Mixed Farming project did not, in itself, aim to promote rights-based participatory governance of territory. However, the follow-on project, Tyfu Dyfi, which is only just beginning, will have more of a focus in this area; it is about 'how communities can be involved in their local food systems' and includes plans around leasing land to establish a community-led agricultural enterprise. This speaks more directly to ideas of participation in decisions, with the aim of trying to give communities more control over and influence in local food systems and markets. It also has a strong focus on wellbeing, with ideas around green prescribing and social farming.

Mapping case study 3 against the revised conceptual model, it features biodiversity and landscape very strongly, seen in relation to activities for protecting and restoring specific priority species and managing landscapes in general. Understanding of landscape is firmly rooted in ideas of human-environment interaction, and the project had a significant focus on local knowledge and cultural, social and economic values as a result. The activities around traditional skills and knowledge, for example, and the exploration of social and cultural values associated with the Mournes were evidence of this.

Within the discussion of the Landscape Partnership more generally, economic values emerged as an important factor around land use and ownership as well as agricultural practices shaping the landscape

26 Turner et al. 2018

in particular ways.

As with case study 2, the issue of land ownership and governance was discussed as being very relevant to the work being undertaken, but the project itself was not necessarily responding to this directly. Again, though, the history and present pattern of land ownership and rights are fundamental to the ways in which people are able to participate both in the landscape itself and in decisions about it. For example, the breakup of landed estates at the end of the 19th century and beginning of the 20th century meant that tenants were able to buy their land with government assistance. Their descendants now guard these rights over land jealously and wish not to have interference in how they manage their land. The economic value of land has become an important consideration for its owners, and this conditions responses to proposals, such as the creation of a national park. There was less focus in this case on rights-based participatory governance beyond those who own the land, but certainly a strong consideration of community engagement and trying to connect people with heritage and landscape in new ways.

The project did not necessarily speak to creating resilient livelihoods and wellbeing in the sense envisioned within the biocultural heritage framework, but ideas of wellbeing are there in terms of the role that heritage has to play in communities' sense of place and the benefits of having access to and engagement with the mountains. The issue of resilient livelihoods was there implicitly in terms of the

exploration of the histories surrounding how livelihoods were derived from the mountains, particularly in relation to the granite industry. Taking this a step further, it could be possible to explore ways to create new forms of resilient livelihoods from the Mountains, based on the past but adapting to the future. The area is predominantly a 'commuter area' to Belfast, and so the value would lie in creating possibilities for livelihood beyond the urban centres of Northern Ireland.

Case study 4 invoked ideas of biodiversity, with a particular attention to the historic decline of fish and marine species. It highlighted the challenges inherent in realising, in practice, the potential benefits for biodiversity of the Marine Protected Area. The case study also speaks to the idea of a 'seascape' and to different forms of local knowledge in the area, for example that of fishing communities. From the case study, there is a concern that not only is local knowledge of the seascape lost and being lost, but that those with remaining knowledge are not valued and respected, with creel fisherman and small-scale usage of kelp marginalised in favour of wider industrial or scientific approaches to fisheries management.

This leads on to the ideas of cultural, social and economic values, where it can be seen that there are a number of different values associated with the seascape and that, currently, there is misalignment between the values embedded in policy (and expressed e.g. through the Marine Protected Area), the economic values

associated with industrialised fishing, and more local cultural, social and economic values and forms of knowledge; this misalignment undermines the potential for creating resilient livelihoods in the area.

This case study also highlighted the sense in which resilient livelihoods may not have been present in this context for a long time, due to historical relations of power that have existed between those seeking to make a living, and those who control the land and sea and resources of the area. This brings to the fore, more so than the other three cases, rights-based participatory governance. The case study points to the need for a commons approach to governance of the local marine environment, but also reveals the lack of effective mechanisms in place currently to achieve this. This is to the detriment of the marine biodiversity and seascape itself, and of resilient livelihoods in the local area.

The idea of the sea as a commons resource brings to the fore issues that were less prevalent in the other cases, around who is able to make decisions about how seascapes and landscapes are managed and governed. The current situation appears to be one of extreme fragmentation, with a real need to establish a mechanism which enhances the effectiveness of the Marine Protected Area, whilst creating better opportunities for a resilient livelihood from the sea. At present, there is a gulf between the scientific knowledge and governance of the sea from the policy and conservation perspective, and a more practical knowledge of working the sea, based on

ideas of livelihood.

The findings from case study 4 beg the question of whether a stronger focus is needed in Scotland on 'Sea Rights and Responsibilities'. For example, informed by the approach to land reform, there could be good practice protocols and legislation laid out to empower communities and deliver better, more diverse ownership and use of marine resources.

Across the four case studies, the least prominent component of the biocultural heritage framework is that of rights-based participatory governance; the importance of this is evident in each case, but it is not something that is generally being made a priority for action and change.

In considering rights and governance, there is a spectrum of what this entails. For example, softer forms of participation involve co-operation, collaboration, and engagement. Hence, the idea of encouraging people to participate in activities related to heritage and landscape. Attention to inclusion and participation in such activities is of course vital, but in terms of biocultural heritage, this would be seen as insufficient to meet the aims of community self-determination and resilient livelihoods.

This brings to the fore the challenge of applying biocultural heritage in contexts where there is a lack of connection, or a loss of biocultural heritage and, therefore, less explicit demands from communities themselves for participatory governance and rights. Across each of the case studies, there are different community groups

involved, with different understandings of biocultural heritage and expectations surrounding their rights and responsibilities.

Hence, biocultural heritage will translate differently, into different contexts, and with different people. Even within a single community, there will be important differences of background, experience and situation; some may not feel a strong connection to land or sea, while others might feel more connected, and some might have a history of fighting for their rights in this context.

The value of the biocultural heritage framework is not that it prescribes a particular solution to be adopted regardless of context; its value lies in recognising the need to address often-overlooked or disregarded issues such as participatory governance alongside already-prioritised issues such as biodiversity conservation.

Running through the case studies is a sense of loss that people express for how things have changed over their lifetimes and beyond. This is cultural loss, loss of landscape/biodiversity, and loss of specific practices and relationships locally in a place. In particular, there are themes in each case study where centrally-driven policies are seen to have changed things for the worse. This links with the issue of self-determination; it was clearly expressed in some of the case studies that people feel they are not in control of their lives, and not able to determine their prospects now and in the future.

Even where this did not come from communities directly, such as in the

biocultural heritage tourism example, it does highlight the idea of outside forces determining the future of place; in the case studies, those forces include both government policy and external economic drivers. Again, there is no one formula that will adequately address all of these circumstances, but there is clearly a common need to bring issues of local self-determination and outside influence and control more strongly into the frame when deliberating about the future of any given place.

Ultimately, this is about the same concern that underpins biocultural heritage approaches elsewhere in the world, that is the extent to which people are able to participate in decisions and actions that affect them and to shape their own futures in order to live well.

In particular, the biocultural heritage framework promotes self-determination and participation in decision-making in a holistic way, calling for all those affected to be involved in decisions that condition the future of the local environment, landscape and seascape, the sustainability of local knowledge and practices, the ability to realise and live by diverse values, and the possibilities for building and sustaining resilient livelihoods and wellbeing.

Chapter 5

Conclusion



The market garden of Earth in Common, an urban craft empowering communities for food sovereignty. Credit: Zoe Russell

The research presented in this report indicates that the biocultural heritage framework has great potential in UK settings. Greater use of the concept and all it encompasses could help to address major national policy challenges.

The concept brings to the fore the interconnection of biological and cultural diversity and the need for more sustainable ways of living and working to avoid harmful outcomes for people and nature. The ways that people connect with nature must come to underpin policies for a more sustainable, just and inclusive world. Internationally, ‘fortress conservation’ approaches, and the separation of people from nature that they require, have been challenged.

Although the biocultural heritage concept and framework emerged through work with indigenous peoples it is increasingly being argued that biocultural heritage is a matter for all human societies and must be pursued in urban contexts as well as rural ones. A biocultural heritage approach, it is argued, has the potential to deliver more ethical conservation policies and practices which help to drive forward the radical transformation that is needed to achieve environmental, social, cultural and economic sustainability.

In the UK, as elsewhere, we continue to face the loss of biodiversity, and also threats to cultural diversity, including in our languages, place knowledge and land use practices. Policies and practical measures have, historically, tended to address these challenges in a fragmented way, focusing on biodiversity, or language, or some other

aspect of biocultural heritage.

More recently, integration has assumed a prominent place in policy; the emergence of a range of landscape policies, in which landscapes are seen as the combined ‘works’ of people and nature, is a case in point. More integrated approaches have also become more common in practice, as the case studies presented in this report show. These trends have led us to a position where key elements of the biocultural heritage framework are already in place in the UK, or they are clearly emerging. But key elements of the framework – particularly giving due attention to the intangible cultural heritage associated with local environments, integrating all parts of the framework as one whole and prioritising action around rights-based participatory governance – are currently weak or lacking in many places.

The explicit adoption and promotion of the biocultural heritage framework therefore has potential in UK contexts as a means of recognising where further action is needed and of promoting change to deliver conservation policies and practices which are truly inclusive, just and sustainable.

It is commonly said that out of crisis an opportunity can emerge. Although many have been calling for new approaches for a long time, the current crises unfolding are perhaps the opportunity that was needed for more radical change to seem acceptable. As we adapt to the impacts of the COVID-19 pandemic and Brexit, there is both a need and an opportunity to re-design policy, services and ways of working

and this should be firmly rooted in securing better outcomes for both people and nature; the biocultural heritage framework provides a potentially powerful tool for guiding this change.

A spectrum of biocultural heritage

Across the UK, a central theme is the notion that there is a diversity of forms of human-environment interaction and a spectrum of connectedness. Hence when thinking of the forms that biocultural heritage might take in the UK, there is a need to recognise the diversity of connections people have to landscapes.

In the international literature, biocultural heritage tends to be explored in relation to certain types of connections rooted in indigenous worldviews and practices which have been sustained over a long period of time, but which are at risk of erasure.

In the UK, biocultural heritage involves engaging with a more fragmented set of practices across different groups and land uses and which may be more or less recent historically. Whilst not aiming to be fully comprehensive or suggest that there is a binary position between the two ends of the spectrum, Figure 16 gives an indication of the spectrum of connections that might be considered in thinking about how to apply a biocultural heritage approach in the UK. Different places and different communities can be at multiple points on the spectrum simultaneously related to different practices.

It has been argued that it might be best to re-frame biocultural heritage as ‘biocultural knowledge and practice’. Partly this is because, from the perspective of some of the interviewees, the term ‘heritage’ is not particularly well understood by the public, has ‘baggage’, and can be viewed narrowly.

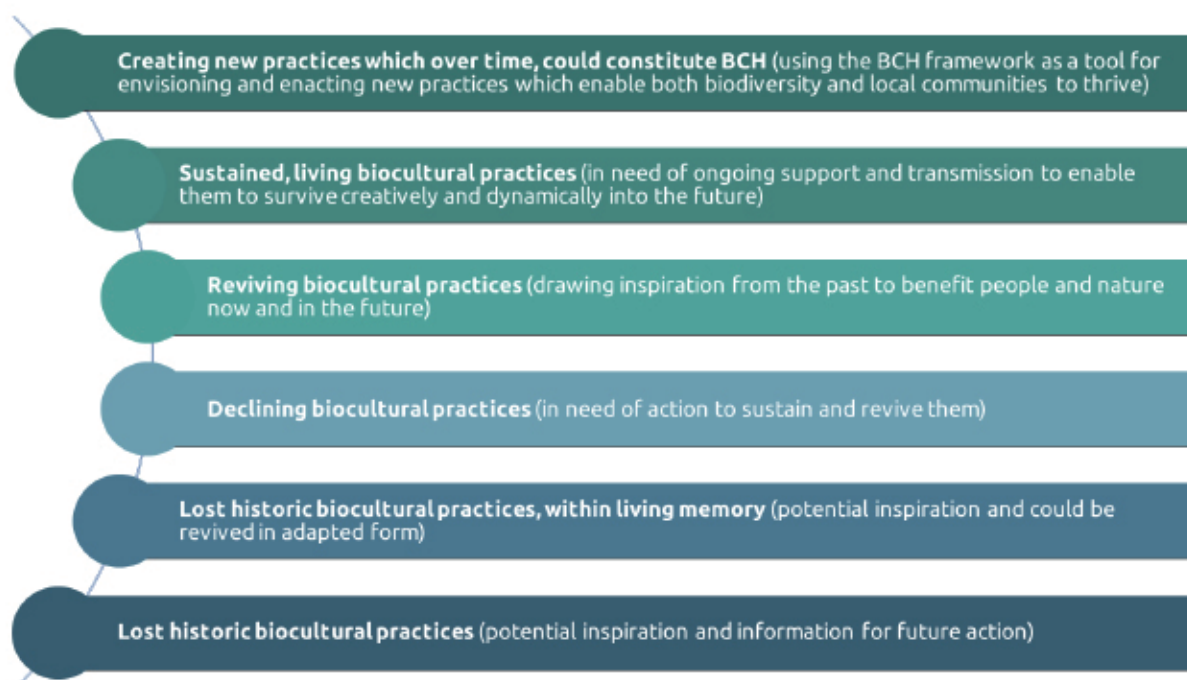


Figure 16: Biocultural Heritage Practices as a Spectrum in the UK

For example, the term can be understood as referring to things which are simply from and of the past, rather than something which is living and dynamic in the present and vital to our futures.

While it is not suggested here that the term 'heritage' be dropped in adapting the biocultural heritage framework for the UK, there is a need to guard against it being interpreted as a static or 'dead' heritage and to make clear that the term refers to cultural knowledges and practices which may be inherited from the past, but which are taken forward creatively and dynamically. This recognises a range of kinds of knowledge, opens up possibilities to create new kinds of connections and ensures that biocultural practices and knowledges are resilient by adapting to change.

A key reason why 'biocultural heritage' is significant for sustainable development is the fact that the practices, knowledges, values and governance structures to which it refers are adapted to local circumstances over time. It is therefore important to communicate that 'heritage' here is about the transmission and development of knowledge and practices over time within particular contexts and that, again, this is a dynamic and creative process.

One of the useful aspects of biocultural heritage as a concept is the way it places a focus on time depth, both by considering how local ways of seeing and doing have emerged, changed and been sustained over time, and in terms of prioritising practices which will support the resilience

and sustainability of local communities and environments into the future.

'Heritage', if understood more broadly, can also mean not just those inherited practices that we value and that can support sustainable development, but those practices which are problematic from this perspective and which we may need to overcome and change. Our heritage today includes unsustainable land use practices that have taken hold, whether in the recent past or over the longer term, and embedded land ownership and governance arrangement and institutional structures and attitudes.

As the case studies in this report have shown, taking a historical perspective on current circumstances helps to understand how the unsustainable aspects of the ways in which we own, govern, access and use land have come about and it can highlight what kinds of change might be needed and might be appropriate in particular localities. Whilst no one approach can be advocated, the important point is that people and their rights matter, and historically people have been marginalised and excluded from many decisions. Biocultural heritage brings this to the fore, rooted in an understanding of nature and culture as a co-evolving over time.

Current systems and values have not always been and need not always be. This applies to the systems of protection for landscape and biodiversity just as it applies, more broadly, to established arrangements for land use and governance. Biocultural

heritage invokes ideas of adaptation and innovation¹ to changing circumstances, guided by core values and practices that promote sustainability. If current mechanisms are not delivering what they need to deliver for people and nature, it is essential that radical change be made possible.

The value of applying a biocultural heritage lens

The value of applying a biocultural heritage framework in the UK is that it guides us to recognise the diverse forms of human-environment interaction that exist, to understand better the value that these have for biodiversity and for the sustainable development of local communities, and to ensure that they are supported to continue into the future, dynamically and creatively, as sustainable ways of life.

The interconnectedness of biodiversity and cultural heritage is increasingly recognised globally and, if considered more explicitly here in the UK, this could lead the way to better, more effective policies and actions. Biocultural heritage is valuable intrinsically, as a representation of biocultural and cultural diversity over time, and there are many opportunities to better respect and protect this diversity, as well as to transmit it.

The key here is knowledge transfer within communities. Are communities able to transmit local knowledge and cultural values about landscape and biodiversity in

place? And then, additionally, to consider how knowledge could be transmitted outside of communities, allowing others to learn about and be inspired by diverse biocultural heritages.

Hence, it is not simply about a small group of people who are involved in specific activities and have direct experience of local knowledge, but about a broader appreciation and understanding of that knowledge, which can be part of encouraging greater connections between people and nature for sustainability.

The value of a biocultural heritage framework also lies in how it forces us to think about the rights of people in relation to nature and place, a long-standing issue in indigenous contexts abroad, which is also important in the UK. Biocultural heritage brings to the fore the importance of finding new ways to fulfil those rights as action is taken to tackle the major environmental problems facing humanity. There is no one approach that can be taken everywhere; rather, biocultural heritage could be a sensitising concept in the UK which helps to ensure that policies, decisions and actions are taken in full cognisance of local social, cultural, environmental and economic circumstances, and with the range of people who are affected.

Biocultural heritage as a concept reinforces the importance of an integrated approach to nature conservation that works for people and takes into account their cultural values and their livelihoods. Only by

¹ see Dutfield 2014; Winkel et al 2020

engaging with this area are we likely to be able to respond to the great problems of biodiversity loss and climate change in just and sustainable ways. The time has passed where conversations about biodiversity and nature conservation, cultural heritage and language, agriculture, and community development can take place in silos.

“By focusing on the connections between cultural and biological diversity, human wellbeing, social justice and the formulation of culturally pertinent policies, biocultural discourses hold great transformative potential.”²

Recognising that any translation of the biocultural heritage framework into UK contexts will have to navigate established structures, and conscious of the potential for creating additional silos, it is not recommended here that biocultural heritage be seen as a new area of policy or practice.

Rather, the biocultural heritage framework could be used to ensure that discussions about nature conservation and biodiversity are re-framed more purposefully to incorporate the other elements of the framework such as cultural values and resilient livelihoods, and likewise discussions about cultural values and heritage take biodiversity and landscape into consideration more than they currently do. And, across all areas of policy and practice, the framework would promote greater action around the equitable participation of all those affected in decisions.

Whilst there are positive signs around

cross-sectoral working, there is a strong dominance of sectorally specific policy-making in the UK which is hampering progress and failing to take account for the myriad manifestations of biocultural heritage.

Adopting a biocultural heritage approach is not about saying that biodiversity is not important or that it should be weighed up against livelihoods; there are no zero-sum games with biocultural heritage. It is a way of thinking that recognises the interconnections of landscape and seascape, biodiversity, cultural, social and economic values, local knowledge and rights-based participatory governance.

All of these facets need to be put on the table in order to make effective decisions moving forward. And everyone affected by these decisions must be included when they are made.

This is not simply about greater recognition of existing biocultural heritage that has hitherto been marginalised, although this is a major issue of historic injustice in many cases that does need to be addressed. For example, many communities have seen their culture, heritage and ways of life and living radically undermined in a very short period of time due to economic policies and incentives which have been rooted in unsustainable ideas.

Many forms of biocultural heritage have already been lost but not forgotten by all, others are at risk of being lost without action. Many of our current practices are

2 Merçon et al. 2019, p.8

not sustainable and must be radically changed, so policies must not only better understand, respect and empower those communities that still value a specific biocultural heritage, but must also focus on the creation of new biocultural heritage that is informed by the past and helps us to prepare for the future, rooted in sustainability and in a framework of rights and responsibilities.

Rural, urban and coastal communities all over the UK need to be given the opportunity to pursue resilient livelihoods, based on culturally meaningful practices with others and with their environments. Biocultural heritage also forces us to take great heed of how changing the current dynamics of power and governance could open up new opportunities for improved outcomes for both people and nature.

This is especially important in the context of Brexit and the COVID-19 pandemic where people's lives and livelihoods are under threat, and more broadly in the context of the global challenges facing all life on earth. It has been made clear that in order to sustain life on the planet a fundamental shift in thinking and in the economic system underpinning many areas of policy is required.³ This is already underway in many ways with the introduction of ideas around doughnut economics and wellbeing economies.

"Threats to biocultural heritage can be understood as those indirect drivers that erode the knowledge and capacity

for human communities to live within ecological limits and can be found throughout contemporary economic and development practices."⁴

Transformation of relationships between people and place will not only have huge significance for people living in those places, but for the wider world, which has been negatively impacted by decades of policy based on intensification of land uses, fortress conservation, the denial of people's rights to self-governance and self-determination, and the short-term exploitation of environmental resources for the benefit of capital, rather than people. Wellbeing and resilient livelihoods need to be at the heart of future policy agendas to ensure that common good and public interest are served. The disciplinary mindset needs to be questioned, and public bodies need to work in new ways to serve the ultimate aims intended, working together with people to deliver positive outcomes for people and nature, rather than imposing designations and policies upon communities rooted in abstracted systems of knowledge and a limited range of values. Biocultural heritage offers a new approach in the UK to encourage this process of change.

3 see Dasgupta 2021; Costanza et al. 2012; Raworth 2017

4 Pretty et al. 2009

Appendix I

Methods and Materials

Documentary Analysis of Policy

Across the UK a range of relevant documentary sources linked to policies, strategies and research were identified as relevant to biocultural heritage, albeit without explicitly naming the concept. One of the major challenges of applying biocultural heritage in the UK is the existence of separate areas of policy for agriculture, environment, communities, heritage, culture and languages, planning and development, and human rights, all of which are implicated in biocultural heritage frameworks.

A desk-based review of documents included those shown in Table 2 covering each national context and organisational policies as well as national government policies. The aim was not to provide an exhaustive review but to assess the extent of alignment between the biocultural heritage concept and approach and existing policy in the UK. The research was undertaken in March to June 2021.

Policy Interviews

A series of national policy stakeholder interviews were conducted online during the research, engaging with some of the main bodies of relevance to the concept of biocultural heritage. The aim was to achieve representation from Scotland, England, Wales and Northern Ireland and from both nature conservation and historic environment institutions including NatureScot, Historic Environment Scotland (HES), Historic England, Natural England, Cadw, Natural Resources Wales (NRW)

and, within Northern Ireland, the Dept. for Communities and the Dept. of Environment, Agricultural and Rural Affairs (DAERA). Interviewees suggested also approaching the Scottish Land Commission, due to the relevance of their work programmes to issues of land and communities in Scotland. The individuals interviewed for the research are listed in Table 3.

Natural Resources Wales declined to participate and suggested speaking to Cadw. Similarly, the DAERA in Northern Ireland did not choose to participate, appearing to defer to colleagues in the Historic Environment division of the Dept. for Communities on this topic. This could be down to the perception that biocultural heritage is not within the remit of nature conservation bodies and those dealing with the environment.

This is itself a finding that reinforces the potential value of a biocultural heritage framework, in order to challenge the perception that cultural heritage has nothing to do with nature and to bridge between different policy domains. Each of the bodies included addresses the interconnection of nature and culture in some ways, but 'biocultural heritage' seems to be something that can fall down the gaps between areas of perceived responsibility.

A key aim of the interviews was to test whether biocultural heritage resonated with the interviewees in terms of current policies which directly address nature and culture. Interviews were designed to be exploratory and allow those participating to indicate areas of interest surrounding the

concept. A semi-structured interview guide was developed and used flexibly along with the IIED biocultural heritage framework.

Case Studies

The same methods as above were used to develop the four cases, namely documentary analysis and interviewing. Within each of the four UK national settings, projects and areas were identified based on a) use of the concept of biocultural heritage explicitly or b) description of approaches that invoke ideas of biocultural heritage without using the term.

In the process of identifying case studies, there were a number of options to choose from. The final selection was based on whether individuals responded to invites to participate in the research (some did not), and the aim of trying to show the applicability of biocultural heritage to more than one setting. Thus, the case studies cover different settings including both urban and rural contexts, as well as themes around tourism, farming, upland landscape management, and marine conservation.

Each case has a strong conservation element as well as a strong community element. Whilst only one of the four uses the term biocultural heritage, others understood the logic behind the term and could see how it could apply in their context (although some were apprehensive about whether they would actively choose to use the term or not).

Limitations of the Research

The research was limited by the ongoing COVID-19 pandemic, which prevented the use of anything other than online research methods. Additionally, some of the interviews were shorter than others due to time constraints. On the other hand, conducting interviews with a diverse range of individuals across the UK was made significantly more practical with the ability to use video call technology.

The internship period was three months including planning and write up of the research. Thus it was not always possible to follow up with additional interviews beyond those conducted, and to accommodate individuals who were on periods of annual leave or otherwise unavailable. Many of the policy interviewees were enthusiastic and suggested speaking to colleagues for further discussion, especially where they felt questions were beyond their remit.

Time and scope constraints also shaped the ability to cover different policy areas. The main focus of this report was biodiversity and nature conservation, and cultural heritage/historic environment. Future research should investigate in more depth the potential value of the biocultural heritage concept and approach in relation to agriculture, planning, economic development and other specific areas.

Finally, time constraints meant focusing on government and public sector policy. Research into the value of biocultural heritage for land owning charities and trusts in the UK would be beneficial.

Table 2: List of UK policy documents reviewed

UK	UK Government. 2018. 25 Year Environment Plan UK Government. 2020. Farming for the Future
Scotland	NatureScot. n.d. Protected Areas NatureScot. n.d. Biodiversity Strategy NatureScot. n.d. Landscape Policy HES. 2020. Intangible Cultural Heritage Policy HES and NatureScot. 2019. Joint Landscape Statement Scottish Government. 2014. Our Place in Time Scottish Government. 2015. Scotland's National Marine Plan Scottish Government. 2017. Land Rights and Responsibilities Statement Scottish Government. 2020a. Scottish Biodiversity Strategy Scottish Government. 2020b. Environment Strategy Scottish Government. 2021. Land Use Strategy
England	Natural England. 2015 National Area Character Profile: New Forest Natural England. 2016. Conservation 21: Natural England's Conservation Strategy for the 21st Century Natural England. 2020. Building Partnerships for Nature's Recovery Historic England. 2008. Conservation Principles Historic England. 2018. Places Strategy Historic England. 2020a. Position on Climate Change and Sustainability . Historic England. 2020b. Valuing Traditional Knowledge in Climate Action Webinar
Wales	Cadw. 2017. Managing Change in World Heritage Sites Cadw. 2018. Priorities for the Historic Environment Future Generations Commissioner for Wales. A Wales of Vibrant Culture and Thriving Welsh Language NRW. 2018. Vital Nature: Making the connections between biodiversity and the people and places of Wales NRW. 2021. State of Natural Resources Report 2020 Welsh Government. 2015. Wellbeing of Future Generations Act Welsh Government. 2020. Agriculture Wales White Paper Welsh Government. 2021a. The Nature Recovery Action Plan 2020-2021 Welsh Government. 2021b. Future Wales: The National Plan 2040
Northern Ireland	Dept. for Agriculture, Environment and Rural Affairs. 2019. Environment Strategy Dept. for Communities. 2019. Conserving Marine Heritage Dept. for Communities & Department for Agriculture, Environment and Rural Affairs. 2016. Future Places: Using Heritage to Build Resilient Communities Dept. of Culture, Arts and Leisure. 2015. Ulster Scots: Heritage and Culture Strategy Dept. of the Environment. 2015. Valuing Nature: A Biodiversity Strategy for Northern Ireland to 2020 Dept. for Regional Development. 2010. Regional Development Spatial Strategy 2035 Northern Ireland Environment Agency / Dept. of the Environment. 2014. Landscape Charter

Table 3: List of Policy Interviewees

Peter Rawcliffe	Head of People and Nature Activity, NatureScot
Graham Saunders	Head of Heritage Management Policy, HES
Emma Cooper	Head of Land Rights and Responsibilities, Scottish Land Commission
Amanda Craig	Director of Connecting People With Nature, Natural England
Cheryl Willis	Principal Advisor People and Nature Programme, Natural England
David McOmish	Senior Advisor (Places), Historic England
Hannah Fluck	Head of Environmental Strategy, Historic England
Ian Halfpenney	Senior Inspector (Rural Land Use Policy), Cadw
Naomh Quinn	Senior Architect, Historic Environment Division, Department for Communities, Northern Ireland Government
Liam McQuillan	Senior Archaeologist, Historic Environment Division, Department for Communities, Northern Ireland Government

Table 4: List of Case Study Interviewees

Andy Rowland	Manager, Ecodyfi, Dyfi Biosphere
Chris Higgins	Project Manager, Ecodyfi, Dyfi Biosphere
Adeline Gladioux	BioCultural Heritage Tourism Project coordinator, North Devon Biosphere
Lynn Trapano	BioCultural Heritage Tourism Project Officer, VisitBrighton
Ailsa MacLellan	Co-ordinator, Our Seas
Gordon Cameron	Local Resident, Wester Ross & PhD Researcher, University of the Highlands and Islands
Cathy Dagg	Local Resident, Wester Ross & Archaeologist
Martin Carey	CEO, Mourne Heritage Trust
Camilla Fitzpatrick	Sustainable Tourism Manager, Mourne Heritage Trust

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References

- Adams, W. M., Hodge, I. D. and Sandbrook, L. (2014) New spaces for nature: the re-territorialisation of biodiversity conservation under neoliberalism in the UK. *Transactions of the Institute of British Geographers*, 39(4), 574–588.
- Apostolopoulou, E. and Adams, W. M. (2015) Neoliberal Capitalism and Conservation in the Post-crisis Era: The Dialectics of “Green” and “Un-green” Grabbing in Greece and the UK: The Dialectics of “Green” and “Un-green” Grabbing. *Antipode*, 47(1), 15–35.
- Aitchison, J., Crowther, K., Ashby, M. and Redgrave, L. (2002) *The Common Lands of Cornwall: A Biological Survey*. Cornwall County Council: Truru, UK.
- Arnaiz-Schmitz, C., Herrero-Jáuregui, C. and Schmitz, M.F. (2018) Losing a heritage hedgerow landscape. Biocultural diversity conservation in a changing social-ecological Mediterranean system. *The Science of the Total Environment*, 637, 374–384.
- Bardsley, D. K., Palazzo, E. and Stringer, R. (2019) What should we conserve? Farmer narratives on biodiversity values in the McLaren Vale, South Australia. *Land Use Policy*, 83, 594–605.
- Barth J., Coscieme L., Dimmelmeier, A., Kumar C., Mewes S., Nuesse I., Pendleton A. and Trebeck K. (2020) *Analysing Options for Systemic Change to Transform the World’s Economic and Financial Systems*. ZOE-Institute for future-fit economies: Bonn.
- Bazile, D., Martinez, E., Negrete, J., Thomet, M., Chia, E., Hocde, H. and Nunez, L. (2011) *Biocultural Heritage: Quinoa as an Important Resource to be Maintained Through Tourism Experiences for Food Security in the Face of Climate Change, Chile*. Tourism Commission of the International Geographical Union.
- Bélanger, J. and Pilling, D. (2020) Biodiversity is fundamental to Food Security. In: WWF (2020) *Living Planet Report 2020 - Bending the curve of biodiversity loss*. Almond, R.E.A., Grooten M. and Petersen, T. (Eds). WWF, Gland, Switzerland.
- Berge, E. and van Laerhoven, F. (2011) Governing the Commons for two decades: A complex story. *International Journal of the Commons*, 5(2), 160–187.
- Bliss, D. (2020) *British Languages Could be Part of Cultural Loss on a Massive Scale*. Available: <https://www.nationalgeographic.co.uk/culture-history/2019/05/british-languages-could-be-part-cultural-loss-massive-scale>
- Bouamrane, M. et al. (2020) Biosphere reserves from Seville, 1995, to building a new world for 2030: a global network of sites of excellence to address regional and global imperatives. In: Reed, M. and Price, M. (eds). *UNESCO Biosphere Reserves: Supporting Biocultural Diversity, Sustainability and Society*. London: Routledge.

- Bridgewater, P. and Rotherham, I. D. (2019) A critical perspective on the concept of biocultural diversity and its emerging role in nature and heritage conservation. *People and Nature*, 1(3), 291–304.
- Cámara-Leret, et al. (2019) Climate change threatens New Guinea's biocultural heritage. *Science Advances*, 5(11), eaaz1455.
- Camshron, G. (2021) Resisting dismissal in the Gàidhealtachd. *Scottish Affairs*, 30(2), 240–250.
- Carr, E. (2020) Resilient livelihoods in an era of global transformation. *Global Environmental Change*, 64, 102–155.
- Cocks, M. L. (2006) Biocultural diversity: Moving beyond the realm of 'indigenous' and 'local' people. *Human Ecology*, 34(2), 185–200.
- Cocks, M.L., Wiersum, F. (2014) Reappraising the concept of biocultural diversity: A perspective from South Africa. *Human Ecology*, 42, 727–737.
- Costanza, R. et al. (2012) *Building a Sustainable and Desirable Economy-in-Society-in-Nature*. New York: United Nations Division for Sustainable Development.
- Costello, E. (2020) Hill farmers, habitats and time: the potential of historical ecology in upland management and conservation. *Landscape Research*, 45(8), 951–965.
- Daes, E. (1995) *Protection of the Heritage of Indigenous People : Final Report of the Special Rapporteur, Erica-Irene Daes, in Conformity with Subcommission Resolution 1993/44 and Decision 1994/105 of the Commission on Human Rights*. Available: <https://digitallibrary.un.org/record/188839?ln=en#record-files-collapse-header>
- DalGLISH, C. (2018) *Community Empowerment and Landscape*. Inherit & Community Land Scotland. Available: https://www.communitylandscotland.org.uk/wp-content/uploads/2018/09/Inherit-CLS_Community-Empowerment-Landscape_Summary-Report.pdf
- Dasgupta, P. (2021) *The Economics of Biodiversity: The Dasgupta Review*. London: HM Treasury.
- Duthie-Kannikkatt, K., Shukla, S., Rao M.L., S., Sakkhari, K. and Pachari, D. (2019) Sowing the seeds of resilience: a case study of community-based Indigenous seed conservation from Andhra Pradesh, India. *Local Environment*, 24(9), 843–860
- Dutfield, G. (2014) *Towards a Definition of Biocultural Heritage Innovations in Light of the Mainstream Innovation Literature*. Available: <https://pubs.iied.org/sites/default/files/pdfs/migrate/G03771.pdf> <https://pubs.iied.org/sites/default/files/pdfs/migrate/G03771.pdf>
- Edwards, D., Collins, T. and Goto, R. (2016) Does the conservation status of a Caledonian Forest also indicate cultural ecosystem value?. In: Agnoletti, M. and Emanuelli, F. (eds), *Biocultural Diversity in Europe*, Cham, Springer, pp.369–388.

- Ekblom, A., Shoemaker, A., Gillson, L., Lane, P. and Lindholm, K.-J. (2019) Conservation through biocultural heritage — examples from Sub-Saharan Africa. *Land*, 8(1), 5.
- Ellis et al. (2021) People have shaped most of terrestrial nature for at least 12,000 years. *PNAS*, 118(17), e2023483118
- Escobar, A. (2011) *Encountering Development: The Making and Unmaking of the Third World*. Princeton: Princeton University Press.
- F.A.O. (2018a) *The 10 Elements of Agroecology: Guiding the Transition to Sustainable Food and Agricultural Systems*. Available: <http://www.fao.org/3/I9037EN/i9037en.pdf>
- F.A.O. (2018b) *FAO'S Work on Agroecology: A Pathway to Achieving the SDGs*. Available: <http://www.fao.org/3/I9021EN/i9021en.pdf>
- F.A.O. (2021) *Agroecology Knowledge Hub*. Available: <http://www.fao.org/agroecology/overview/en/>
- Fernandes, J. et al. (2019) *Agroecology in Action. Report for the Land Workers Alliance*. Available: https://landworkersalliance.org.uk/wp-content/uploads/2018/10/Agroecology_in_action.pdf
- Ferrara, V., Ekblom, A. and Wästfelt, A. (2020) Biocultural Heritage in Sicilian Olive Groves; The Importance of Heterogeneous Landscapes over the Long Term. In: Goldstein, M. I. and DellaSala, D. A. (eds), *Encyclopedia of the World's Biomes*, Oxford, Elsevier, pp.135–145
- Fish et al. (2016) Making space for cultural ecosystem services: Insights from a study of the UK nature improvement initiative. *Ecosystem Services*, 21(B), 329–343.
- Foundation for Common Land & Natural England. (2010) *Common Land Toolkit NE285*. Available: <https://webarchive.nationalarchives.gov.uk/20150303030401/http://publications.naturalengland.org.uk/publication/36015>
- Gavin, M., et al. (2015) Defining Biocultural Approaches to Conservation. *Trends in Ecology and Evolution*, 30(3), 140–45.
- Gilberto et. al. (2021) *Biocultural Heritage and Landscapes*. UK National Commission and PRAXIS. Available: <https://unesco.org.uk/wp-content/uploads/2021/05/Biocultural-Heritage-and-Landscapes-Linking-Nature-and-Culture.pdf>
- Giollagáin et al. (2020) *The Gaelic Crisis in the Vernacular Community: A Comprehensive Sociolinguistic Survey of Scottish Gaelic*. Aberdeen. Aberdeen University Press.
- Glenn, S. (2021) *Land & Climate Change — Exploiting our Natural Capital for the Benefit of All*. Scottish Land Commission. https://www.landcommission.gov.scot/news-events/blog/land-climate-change-exploiting-our-natural-capital-for-the-benefit-of-all?p_slug=blog
- Glover, J. (2019) *Landscapes Review: Final Report*. Available at: <https://assets.publishing>

service.gov.uk/government/uploads/system/uploads/attachment_data/file/833726/landscapes-review-final-report.pdf

Gorenflo, L. et al. (2012) Co-occurrence of linguistic and biological diversity in biodiversity hotspots and high biodiversity wilderness areas. *PNAS*, 109(21), 8032-8037.

Graddy, T. G. (2013) Regarding biocultural heritage: in situ political ecology of agricultural biodiversity in the Peruvian Andes. *Agriculture and Human Values*, 30(4), 587–60.

Grant, K. (2019) Oran an Fheamnaidh – song of the seaweed gatherer: an archaeology of early 19th-century kelping. *Scottish Archaeological Journal*, 41, 63–85.

Grey, S. and Kuokkanen, R. (2019) Indigenous governance of cultural heritage: searching for alternatives to co-management. *International Journal of Heritage Studies*, 26(10), 1–23.

Grove, R. et al. (2020) Pastoral stone enclosures as biological cultural heritage: Galician and Cornish examples of community conservation. *Land*, 9(9), 1-20.

Hayhow D.B., et. al. (2019) *The State of Nature 2019*. The State of Nature partnership. Available: <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf>

Higgins, C. (2021) *Mixed Farming – Histories and Futures: Final Report*. Available: https://ff434530-7747-4340-b305-03c7ed5a8557.filesusr.com/ugd/f2889b_627031b173784b1982d68d666a133f7e.pdf

Hirons, M. et al. (2018) Understanding climate resilience in Ghanaian cocoa communities – Advancing a biocultural perspective. *Journal of Rural Studies*, 63, 120–129.

Hockings, M. et al. (2020) Integrating science and local knowledge to strengthen biosphere reserve management. In: Reed, M. and Price, M. (eds.) (2020) *UNESCO Biosphere Reserves: Supporting Biocultural Diversity, Sustainability and Society*. London: Routledge, pp.241-253.

Hong, S.K., Bogaert, J. and Min, Q. (eds.) (2014) *Biocultural Landscapes: Diversity, Functions and Values*. Dordrecht, Springer Netherlands.

Hong, S. (2014) Introduction. In: Hong, S.-K., Bogaert, J. and Min, Q. (eds.) *Biocultural Landscapes: Diversity, Functions and Values*. Dordrecht, Springer Netherlands, pp.1-7.

Hughes, H. and Vadrot, A. B. M. (2019) Weighting the world: IPBES and the struggle over biocultural diversity. *Global Environmental Politics*, 19(2), 14–37.

ICCA (2021) *Territories of Life*. Available: <https://report.territoriesoflife.org/wp-content/uploads/2021/05/ICCA-Territories-of-Life-2021-Report-FULL-150dpi-ENG.pdf>

IPBES (2019) *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard,

A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany.

Janke, T. and Sentina, M. (2017) *Indigenous Knowledge: Issues for Protection and Management. Discussion Paper*. Report of IP Australia and the Commonwealth Dept. of Industry, Innovation and Science. Sydney.

Jenkins, V. (2018) Sustainable management of natural resources: Lessons from Wales. *Journal of Environmental Law*, 30(3), 399–423.

Jonas, H., Shrumm, H. and Bavikatte, K. (2010) Biocultural community protocols and conservation pluralism. Exploring the right to diversity in conservation law, policy, and practice, *Policy Matters* 17, November 2010, 102-112.

Jones, S. (2017) Wrestling with the social value of heritage: Problems, dilemmas and opportunities. *Journal of Community Archaeology & Heritage*, 4(1), 21–37.

Kenicer, G., Bridgewater, S. and Milliken, W. (2000) The ebb and flow of Scottish seaweed use. *The Botanical Journal of Scotland*, 52(2), 119-148.

Kenterelidou, C. and Galatsopoulou, F. (2021) Sustainable biocultural heritage management and communication: The case of digital narrative for UNESCO marine World Heritage of outstanding universal value. *Sustainability*, 13(3), 1449.

Kodirekkala, K, R. (2017) Internal and external factors affecting loss of traditional knowledge: Evidence from a horticultural society in South India. *Journal of Anthropological Research*, 73(1), 22-42.

Konsa, K. (2016) Natural and cultural heritage: Framing meanings and practices. *The International Journal of Sustainability in Economic, Social, and Cultural Context*, 12(4), 9–18.

Kuster, H. (2004) Cultural landscapes: An introduction. In: Dieterich, M. and Van Der Straaten, J. (eds). *Cultural Landscapes and Land Use: The Nature Conservation-Society Interface*. Kluwer Academic Publishers, pp.1-11.

Laimann, J. (2018) *Research Briefing: Common Land*. Paper no. 18-044. National Assembly for Wales. Senedd Research. Available: <https://senedd.wales/media/bg4h3hrs/18-044-web-english.pdf>

Laurent et al. (2021) *Five Pathways Toward Health-Environment Policy in a Wellbeing Economy*. Available: https://wellbeingeconomy.org/wp-content/uploads/WEAll-POLICY-PAPER-Health-and-Environment_May2021_Final.pdf

Lee, K.C., Karimova, P. G., Yan, S.-Y. and Li, Y.-S. (2020) Resilience assessment workshops: a biocultural approach to conservation management of a rural landscape in Taiwan.

Sustainability, 12(1), 408.

Leff, E. (2015) The power-full distribution of knowledge in political ecology: A view from the South. In: Perreault, T. et al. (eds). *The Routledge Handbook of Political Ecology*. 1st edn. London: Routledge, pp.64-76.

Lim, M. (2021) Biodiversity 2050: Can the Convention on Biological Diversity deliver a world living in harmony with nature? *Yearbook of International Environmental Law*, p.yvaa079.

Lindholm, K.J. and Ekblom, A. (2019) A framework for exploring and managing biocultural heritage. *Anthropocene*, 25, p.100195.

MacCaulay, B. and Dalglish., C. (2021) *Community Landowners and the Climate Emergency*. Community Land Scotland. Available: https://www.communitylandscotland.org.uk/wp-content/uploads/2021/03/Community-Landowners-the-Climate-Emergency_Report.pdf

MacKinnon, I., Brennan, R. and Hurrell, S. (2012) *Belonging to the Sea: Exploring the Cultural Roots of Maritime Conflict on Gaelic Speaking Islands in Scotland and Ireland*. Scottish Crofting Federation/SAMS.

Maclean, R. (MacIlleathain, Ruairidh). (2021) *Ecosystem Services and Gaelic: a Scoping Exercise*. NatureScot Research Report No.1230.

MacGregor, G. and Murtagh, P. (Forthcoming) Apples, art & archaeology: Mediating the bio-cultural heritage and historic environment of the Clyde and Avon Valleys. *Historic Environment Policy and Practice*.

Maffi, L. (2018) Biocultural diversity. In: Callan, H. (ed). *The International Encyclopedia of Anthropology*. New Jersey: Wiley and Sons.

Maffi, L., and E. Woodley. (2012) *Biocultural Diversity Conservation: A Global Sourcebook*. London: Routledge.

Menatti, L. (2017) Landscape: from common good to human right. *International Journal of the Commons*, 11(2), 641-683.

Merçon, J., Vetter, S., Tengö, M., Cocks, M., Balvanera, P., Rosell, J. A. and Ayala-Orozco, B. (2019) From local landscapes to international policy: contributions of the biocultural paradigm to global sustainability. *Global Sustainability*, 2 e7, 1–11.

Mitchell et. al. (2009) *World Heritage Cultural Landscapes: A Handbook for Conservation and Management*. UNESCO World Heritage Centre.

Mourne Mountains Landscape Partnership. (2017) *Project Evaluation. Final Evaluation Report*. Mourne Heritage Trust.

Murray, I., Jover-Avellà, G., Fullana, O. and Tello, E. (2019) Biocultural heritages in Mallorca:

Explaining the resilience of peasant landscapes within a Mediterranean tourist hotspot, 1870–2016. *Sustainability*, 11(7), 1926.

Neervoort, R. (2013) *The Fish That Did Not Get Away: Tales from Herring Fishers About the Decline of the Wester Ross Herring Fishery*. VU, University Amsterdam.

Newing, H. (2012) Recognition and support of ICCAs in England. In: Kothari, A. with Corrigan, C., Jonas, H., Neumann, A., and Shrumm, H. (eds). *Recognising and Supporting Territories and Areas Conserved by Indigenous Peoples and Local Communities: Global Overview and National Case Studies*. Secretariat of the Convention on Biological Diversity, ICCA Consortium, Kalpavriksh, and Natural Justice, Montreal, Canada. Technical Series no. 64.

Newry and Mourne District Council (2009) *Newry & Mourne District Local Biodiversity Action Plan*. Available: https://www.ringofgullion.org/wp-content/uploads/2015/01/biodiversity_action_plan.pdf

Ní Mhathúna, D. (2021) Traditional ecological knowledge and the relevance of Dùthchas in Gàidhealtachd environmental futures. *Scottish Affairs*, 30(2), 251–261.

Northern Ireland Land Matters Taskforce. (2015) *Towards a Land Use Strategy for Northern Ireland*. Northern Ireland Land Matters Taskforce & James Hutton Institute. Available: https://www.nienvironmentlink.org/cmsfiles/Towards-a-Land-Strategy-for-NI_2015-Main-Report.pdf

Oloriz, C. and Parlee, B. (2020) Towards biocultural conservation: Local and indigenous knowledge, cultural values and governance of the White Sturgeon (Canada). *Sustainability*, 12(18), 7320.

Ortega Santos, A. (2020) Concluding remarks: Rethinking territories from a biocultural/bioregional perspective. In: Fanfani, D. and Matarán Ruiz, A. (eds), *Bioregional Planning and Design: Volume II*, Cham, Springer International Publishing, pp. 279–28

Ostrom, E. (1990) *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Panneels, I. (2019) Mapping the sea on Scotland's peripheries. *Arts*, 8(4), 123.

Peco, B., Carmona, C.P., de Pablos, I. and Azcárate, F.M. (2012) Effects of grazing abandonment on functional and taxonomic diversity of Mediterranean grasslands. *Agriculture, Ecosystems & Environment*, 152, 27–32.

Piras, G. (2011) *When We Care For It ... Preserving Cultural and Spiritual Values of Forests*. IIED. Available: <https://www.iied.org/when-we-care-for-itpreserving-cultural-spiritual-values-forests>

Poole, A. K. (2018) Where is Goal 18? The need for biocultural heritage in the Sustainable

Development Goals. *Environmental Values*, 27, 55–80.

Pretty, J., et al. (2009) The intersections of biological diversity and cultural diversity: Towards integration. *Conservation and Society*, 7(2), 100–112.

Price, M. (2020) The Evolution of the Biosphere Reserve Network in the United Kingdom. In Reed, M. and Price, M. (eds.) (2020) *UNESCO Biosphere Reserves: Supporting Biocultural Diversity, Sustainability and Society*, pp.90-101.

Quandt, A., Neufeldt, H. and McCabe, J. T. (2019) Building livelihood resilience: what role does agroforestry play? *Climate and Development*, 11(6), 485–500.

Raworth, K. (2017) *Doughnut Economics: Seven Ways to Think Like a 21st Century Economist*. London: Penguin Random House.

Reed, M. and Price, M. (2020) Introducing UNESCO Biosphere Reserves in: Reed, M. and Price, M. (2020) *UNESCO Biosphere Reserves: Supporting Biocultural Diversity, Sustainability and Society*. London: Routledge, pp.1-10.

Reyes-García, V., Fernández-Llamazares, A., McElwee, P., Molnár, Z., Öllerer, K., Sarah, J., Wilson, S.J. and Brondizio, E.S. (2019) The contributions of Indigenous Peoples and local communities to ecological restoration. *Restoration Ecology*, 27, 3–8.

Revive Coalition. (2021) *Our Land: A Vision for Land Reform in Scotland and How We Get There*. Available: <https://revive.scot/publication/our-land-a-vision-for-land-reform-in-scotland-and-how-we-get-there/>

Rhodes, A. (2019) *The Memory Work of Welsh Heritage: Multidimensional Landscapes of a Multinational Wales*. Unpublished PhD Thesis, Geography, Kent State University.

Rodgers, C. and Mackay, D. (2018) Creating ‘new’ commons for the twenty-first century: innovative legal models for ‘green space’. *Journal of Environmental Planning and Management*, 61(5-6), 1051-1069.

Roe, D. (2021) *Supporting A Nature Positive, Equitable Global Diversity Framework*. IIED. Available: <https://www.iied.org/supporting-nature-positive-equitable-global-biodiversity-framework>

Rossler, M. (2006) World Heritage cultural landscapes: A UNESCO flagship programme 1992 – 2006. *Landscape Research*, 31(4), 333-353.

Rozzi, R. (2015) Implications of biocultural ethics for earth stewardship. In R. Rozzi et al. (eds), *Earth Stewardship*, Cham: Springer, pp. 113–136.

Russell, Z. (2021) Common-sense discourses of nature: A Gramscian analysis of conservation designations in the Scottish Highlands. In A. Wasowska-Pawlik and J. Purchla (eds), *Heritage and Environment*, Krakow: International Cultural Centre, pp.47-67.

- Russell, Z., Beattie, L. and Heaney, D. (2021) Crofts as spaces of wellbeing: Social crofting in rural Scotland. *Journal of Rural Studies*, online: <https://doi.org/10.1016/j.jrurstud.2021.05.007>
- Sajeva, G. (2018) *When Rights Embrace Responsibilities: Biocultural Rights and the Conservation of the Environment*. Oxford: OUP.
- Sarmiento-Mateos, P., Arnaiz-Schmitz, C., Herrero-Jáuregui, C., D. Pineda, F. and Schmitz, M. F. (2019) Designing protected areas for social–ecological sustainability: Effectiveness of management guidelines for preserving cultural landscapes. *Sustainability*, 11(10), 2871.
- Sayre, M., Stenner, T. and Argumedo, A. (2017) You can't grow potatoes in the sky: Building resilience in the face of climate change in the Potato Park of Cuzco, Peru. *Culture, Agriculture, Food and Environment*, 39(2), 100–108.
- Scottish Government (2019) *Climate Ready Scotland: Climate Change Adaptation Programme 2019-2024*. Available: <https://www.gov.scot/publications/climate-ready-scotland-second-scottish-climate-change-adaptation-programme-2019-2024/pages/13/>
- Scottish Land Commission. (2021) *Legislative Proposals to Address the Impact of Scotland's Concentration of Land Ownership: A Discussion Paper from the Scottish Land Commission*. Available: https://www.landcommission.gov.scot/downloads/601acfc4ea58a_Legislative%20proposals%20to%20address%20the%20impact%20of%20Scotland%E2%80%99s%20concentration%20of%20land%20ownership%20-%20Discussion%20Paper%20Feb%202021.pdf
- Scottish Seaweed Information*. Available: <https://scottishseaweedinformation.wordpress.com/>
- Shen, S., Wilkes, A., Qian, J., Yin, L., Ren, J. and Zhang, F. (2010) Agrobiodiversity and Biocultural Heritage in the Dulong Valley, China: Impacts of and Responses to the Sloping Land Conversion Program. *Mountain Research and Development*, 30(3), 205–211.
- Shirely Muir Associates. (2018) *Clyde and Avon Valley Partnership Evaluation Report*. Available: https://www.communityactionlan.org/files/CAVLP_Executive_Summary_July__2018_FINAL_2.pdf
- Short, C. (2008) The traditional commons of England and Wales in the twenty-first century: meeting new and old challenges. *International Journal of the Commons*, 2(2), 192–221.
- Sterling, E. J., Filardi, C., Toomey, A., Sigouin, A., Betley, E., Gazit, N. and Bergamini, N. (2017) Biocultural approaches to wellbeing and sustainability indicators across scales. *Nature Ecology & Evolution*, 1, 1798–1806.
- Stoll-Kleemann, S. and O'Riordan, T. (2017) The challenges of the Anthropocene for Biosphere Reserves. *Parks*, 23(1), 89-100.

- Swaffield, L. and Egan, D. (2015) *The Welsh Doughnut 2020: A Framework For Environmental Sustainability and Social Justice*. Oxfam. Available at: <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/620979/rr-welsh-doughnut-2020-sustainability-social-justice-010320-en.pdf?sequence=1>
- Swiderska, K. (2006) *Protecting Traditional Knowledge: A framework based on Customary Laws and Bio-Cultural Heritage*. Paper for the International Conference on Endogenous Development and BioCultural Diversity, 3-5 October 2006, Geneva.
- Swiderska, K. (2009) Protecting traditional knowledge: A holistic approach based on customary laws and bio-cultural heritage. In: K.N. Ninan (ed) *Conserving and Valuing Ecosystem Services and Biodiversity: Economic, Institutional and Social Challenges*, London: Earthscan, pp.331-345.
- Swiderska, K. and Argumedo, A. (2017) *What is Biocultural Heritage?* IIED. Available: <https://pubs.iied.org/g04151>
- Swiderska, K., Argumedo, A. and Pimbert, M. (2020) *Biocultural Heritage Territories: Key to Halting Biodiversity Loss*. International Institute for Environment and Development. Available at <https://www.jstor.org/stable/resrep29050>
- Swiderska, K. and Ryan, P. (2020) *Indigenous Food Systems, Biocultural Heritage and the SDGs. Challenges, Interdisciplinary Research Gaps and Empowering Methodologies*. Virtual Workshop Report. IIED. Available: <https://pubs.iied.org/sites/default/files/pdfs/2021-06/201911IIED.pdf>
- Tatum, M. (2020) Customary law of indigenous communities: Making space on the global environmental stage. *Michigan Journal of Environmental & Administrative Law*, 9(1), 77-105.
- Thornton, S. A., Setiana, E., Yoyo, K., Dudin, Yulintine, Harrison, M. E., Page, S. E. and Upton, C. (2020) Towards biocultural approaches to peatland conservation: The case for fish and livelihoods in Indonesia. *Environmental Science & Policy*, 114, 341–351
- Thomson, S., Moxey, A., Wightman, A., McKee, A., Miller, D., Brodie, E., Glass, J., Hopkins, J., Mathews, K., Thomson, K., McMorran, R. and Bryce, R. (2016) *The Impact of Diversity of Ownership Scale on Social, Economic and Environmental outcomes: Exploration and Case Studies*. Final report to Scottish Government (CR/2014/19).
- Turner, K. L., Davidson-Hunt, I. J. and Hudson, I. (2018) Wine, cheese and building a gourmet territory: biocultural resource-based development strategies in Bolivia. *Canadian Journal of Development Studies / Revue canadienne d'études du développement*, 39(1), 19–37.
- Verschuuren, B. (2007) An overview of cultural and spiritual values in ecosystem management and conservation strategie. In: Haverkort, B. and Rist, S. (eds.) *Endogenous Development and Bio-cultural Diversity: The interplay of worldviews, globalization and locality*. Bern, CH: Centre for Development and Environment.

Verschuuren B., Mallarach J-M., Bernbaum, E., Spoon J., Brown S., Borde R., Brown J., Calamia M., Mitchell N., Infield M and Lee E. (2021) *Cultural and Spiritual Significance of Nature. Guidance for Protected and Conserved Area Governance and Management*. Best Practice Protected Area Guidelines Series No. 32, Gland, Switzerland: IUCN. XVI + 88

Walk et al. (2020) Participatory learning for transdisciplinary science in Biosphere Reserves: a modified role for universities In: Reed, M. and Price, M. (eds.) *UNESCO Biosphere Reserves: Supporting Biocultural Diversity, Sustainability and Society*, London: Routledge, pp.297-309.

Wehi, P.M. and Lord, J.M. (2017) Importance of including cultural practices in ecological restoration. *Conservation Biology*, 31, 1109–1118.

Welsh Government. (2018) Priorities for the Historic Environment. Lord Elis-Thomas, Minister for Culture, Tourism and Sport. Cadw. Available: <https://gov.wales/sites/default/files/publications/2019-07/priorities-for-the-historic-environment-of-wales.pdf>

Wilder, B. O'Meara, C. Monti, L. and Nabhan, G. (2016) The Importance of indigenous knowledge in curbing the loss of language and biodiversity. *BioScience*, 66(6), 499–509.

Wilkinson, T. (2020) *BioCultural Heritage Tourism – A Review of Literature and Experiences*. Published online. Available: <https://www.bcht.eu/results>

Winkel, T. et al. (2020) Mobilising common biocultural heritage for the socioeconomic inclusion of small farmers: panarchy of two case studies on quinoa in Chile and Bolivia. *Agriculture and Human Values*, 37(2), 433–447.

Winter, M. (2014) Foreword. In: *North Devon Biosphere Strategy for Sustainable Development 2014-2024*. North Devon Biosphere. Available: <https://www.northdevonbiosphere.org.uk/biospherestrategy.html>

Zent, S. (2009) Traditional ecological knowledge (TEK) and biocultural diversity: A close-up look at linkages, de-learning trends, and changing patterns of transmission. In: P. Bates et al. (eds.), *Learning and Knowing in Indigenous Societies Today*, Paris: UNESCO, pp. 39–58.