



UNESCO Biosphere:

Scoping the opportunity for
the Scottish Borders

April 2021

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Introduction

This paper sets out to scope the opportunity of creating a UNESCO Biosphere in the Scottish Borders. It is a first step towards exploring the idea in the context of the Scottish Borders and intends to be a starting point for discussion.

The paper begins with an introduction to UNESCO Biospheres, a concept created over 40 years ago but still little understood in the UK. It provides a summary of the opportunities and benefits that a UNESCO Biosphere designation could bring to the Scottish Borders, whilst also highlighting some of the challenges and the process of getting there.

Through a summary of the regional environmental and economic context, the paper aims to demonstrate how a UNESCO Biosphere could complement existing initiatives. A time line illustrating this and suggesting moments to take action is also included.

A series of short case studies provide useful comparisons and demonstrate how qualities which the Scottish Borders shares have been translated into UNESCO Biosphere concepts elsewhere. Finally, four illustrated spatial options consider what a Scottish Borders UNESCO Biosphere might look like on the ground.

A UNESCO Biosphere may not be the right tool to support the Scottish Borders in achieving its environmental, economic and community development objectives, however we hope this paper will begin the exploratory process needed to make this decision.



The paper has been produced by The Southern Uplands Partnership. The project is supported by NatureScot, through the Green Recovery Fund

www.sup.org.uk
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What is a UNESCO Biosphere?

UNESCO Biospheres are areas designated for learning about and testing, approaches to sustainable development. They are places to develop and implement local solutions to global challenges, based on innovative practice and the study of the interactions between social and ecological systems.

Theatres for Reconciling People and Nature

UNESCO Biospheres aim to improve human livelihoods whilst safeguarding the earth’s ecosystems. They do this by promoting innovative approaches to economic development that are socially and culturally appropriate and environmentally sustainable.

UNESCO Biospheres are an international designation. They are different from other designations such as National Parks, which are areas protected for conservation. Although Biospheres contain existing protected areas, the purpose of Biospheres is to balance the dynamic relationship between people and the environment. Biospheres are not simply a title or a synonym for nature conservation.

UNESCO Biospheres in the UK

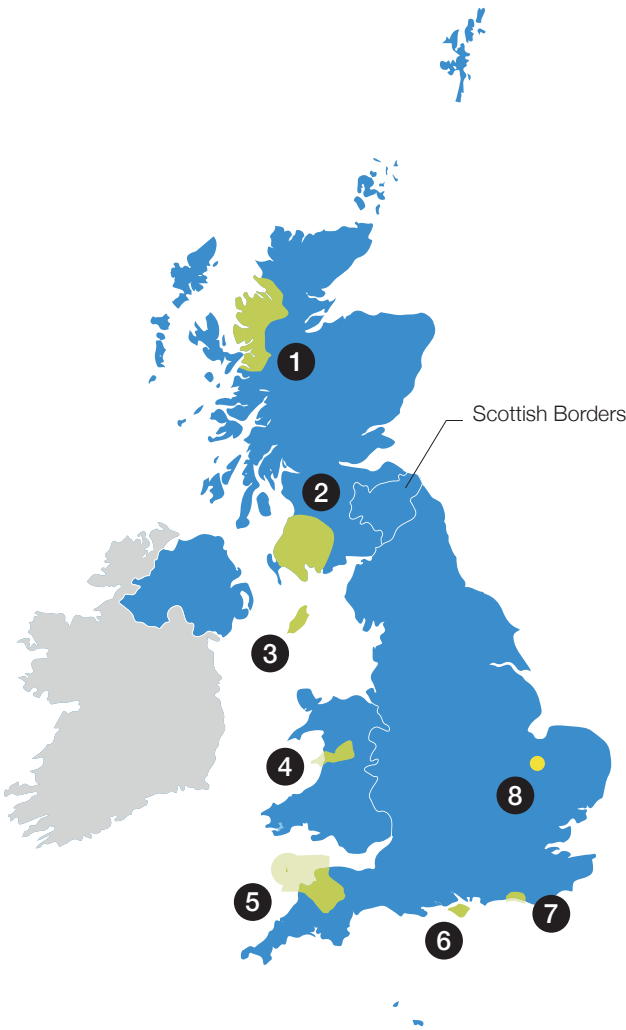
The first UNESCO Biosphere was created in 1974 and there are now 700+ designated sites worldwide. Together, the Biospheres form a global network, the ‘World Network of Biosphere Reserves’, which is managed through an inter-governmental programme called ‘Man and the Biosphere’ (MAB). The network is an important feature of Biospheres because it provides a framework for sharing and communicating knowledge, experience and lessons learned.

There are seven UNESCO Biospheres in the UK, with an eighth currently in the planning stages. Biospheres are usually established through a ground-up approach, whereby local communities and stakeholders collectively decide they would like to create a Biosphere.

UNESCO Biospheres must include areas of significance for biodiversity, which is why in the UK, each Biosphere needs to have an already protected area at its heart. This is typically a Site of Special Scientific Interest (SSSI) or Special Area of Conservation (SAC). The protected area makes up a small portion of the whole Biosphere, which also includes settlements where people live and work, places for recreation, leisure and tourism and industries such as farming and forestry. The diagram opposite illustrates how the different areas relate.

Biospheres focus on balancing nature conservation with sustainable economic and social development for and with communities.

UNESCO Biosphere Reserve Technical Guidelines, 2021



- 1. Wester Ross, designated in 1976, extended and renamed in 2016
- 2. Galloway and Southern Ayrshire, designated in 1976, extended and renamed in 2012
- 3. Isle of Man, designated in 2016
- 4. Biosffer Dyfi, designated in 1977
- 5. North Devon, designated in1976, extended in 2002
- 6. Isle of Wight, designated in 2019
- 7. Brighton and Lewes Downs, designated in 2014
- 8. Cambridgeshire Fens, application in progress

Form & Function

The form of a UNESCO Biosphere is based around three zones, which when working together enable the Biosphere to fulfil its purpose:

- Core Zone**
This is an area already protected by law for conservation, such as an SSSI or SAC. A Biosphere can have one or more Core areas.
- Buffer Zone**
An area suitable for lower impact activities such as recreation & tourism, education and grazing. Management techniques can be developed and tested here, in order to maintain the diversity of these ecosystems.
- Transition Zone**
This area contains a wider range of activity including larger settlements and industry. The goal is to support communities in creating and maintaining sustainable socio-economic and land-use systems.

UNESCO Biospheres do not involve new legislation or regulations. Designation does not lead to any new activities being forbidden. However it is important that the activities that take place support the functions of the Biosphere:

Monitoring

Education & Training

Recreation & Tourism

Research

Settlements

Industry, e.g. farming & forestry

To operate as successful models for sustainable development, UNESCO Biosphere needs to fulfil three key, interrelated functions:

CONSERVATION	DEVELOPMENT	LOGISTIC SUPPORT
Conserving the natural and cultural diversity of a region.	Shaping economic and cultural development to respond to people and place.	Supporting people to look after, engage with and promote the Biosphere.
This involves <ul style="list-style-type: none">Conservation of biodiversityConservation of cultural diversity	This involves <ul style="list-style-type: none">Sustainable economic developmentSocial developmentDevelopment of cultural diversity	This involves <ul style="list-style-type: none">Research & monitoringEducation & trainingSupport & promotion of projects



Scottish Borders Context

The Scottish Borders is a largely rural area with a population scattered across a collection of distinctive towns and villages. Land is one of the Scottish Borders’ biggest assets, but the varied landscapes which make up this diverse region are not untouched. Rather, they have a long historical and cultural significance as part of a working countryside.

From the uplands, home of sheep farming in Scotland, to the rivers which powered textile mills, to the floodplain hay meadows, people have been important participants in the development of the Scottish Borders environment for centuries.

Today, at a time of a climate and biodiversity emergency that requires action, this environment

is under pressure from multiple demands on its resources, through afforestation, intensive land management, invasive non-native species, burning of grouse moors and inappropriate grazing. These pressures can cause problems, such as the polluting of water courses, which affect the environment’s ability to deliver vital ecosystem services.

At the same time, the Scottish Borders Council has put economic development at the heart of their purpose. Whilst moving towards a low carbon economy, it aims attract and grow entrepreneurial people, up-skill and future-proof the workforce, build on the area’s environmental and cultural assets and raise the profile of the Scottish Borders at a Scottish, UK and international level.



A UNESCO Biosphere could provide a tool to help the Scottish Borders manage its resources in a sustainable way, supporting economic development which strengthens the region’s biggest assets.

Outlined below are some of the key environmental, economic and social conditions which define the Scottish Borders context today:

The River Tweed and its Tributaries

- Running for 160km and stretching from the Scottish Borders’ western boundary to its eastern edge, the river Tweed connects many of the area’s towns and villages, bringing a strong identity to this border region.
- The River Tweed and its tributaries are of international significance for ecological diversity, with much of the river network designated as a Special Area of Conservation.
- In 2015 the River Tweed was winner of the first ever UK Rivers Prize.
- The river played a vital role historically in the development of the textile industry and continues to be of significance today for fishing tourism.

Integrated Approach to Land Management

- The Tweed Forum has been pursuing a catchment-scale approach to ecosystem management for over 25 years, work that is now recognised at a national level. The Tweed Forum’s Tweed Catchment Management Plans provide a “single management framework for the many interacting and interdependent ecosystem services provided by the waters of the Tweed catchment”.
- The Tweed Forum is a membership organisation, established in 1991 as a stakeholder-led group with a bottom-up approach to governance. A UNESCO Biosphere could create an opportunity to strengthen and evolve the work the Tweed Forum has done and continues to do, recognising the link between land use and the health of our rivers.

A New Vision for Development

- The future of economic and community development in the Scottish Borders has recently taken a new turn, with the launch of South of Scotland Enterprise (SoSE) in April 2021. SoSE has two aims: “to further the sustainable economic and social development of the South of Scotland,

and improve the amenity and environment of the South of Scotland”. These aims, along with SoSE’s commitment to long-term investment in the region, align with the approach of UNESCO Biospheres.

Cultivating a Culture of Stewardship

- More people have spent more time in and engaging with nature during the Covid-19 lockdown. In a study by the University of Cumbria, this led to 57% of young adults aged 18-30 years saying they are more likely to consider global environmental issues in the future.
- There is an ongoing campaign for a Scottish Borders National Park. Whilst the structure of National Parks is very different to UNESCO Biospheres, the aims have similarities, including promoting the sustainable use of natural resources and the conservation of natural heritage.
- The (currently in development) Destination Tweed project seeks to reconnect local people with the river and the land, increasing their understanding of management challenges whilst fostering a new sense of stewardship.
- Tom Rawson, winner of the 2019 River Champion Award, established the annual Great Borders River Clean, which in 2020 involved around 450 people.

Developing Skills for a 21st Century Climate

- Borders College existing Rural Skills department is developing dedicated curriculum pathways for sustainability and biodiversity. The college is also involved in proposals for a new Rural Skills Academy on the Roxburgh Estate.
- Diversification of courses at the Heriot-Watt School of Design in Galashiels means a wider variety of young creatives will be living and studying here. New courses have already engaged in projects with an environmental focus.
- Kelso High School is developing ‘Project Themed Learning’ for S1 & S2 students, activity which will be based on the needs of students and society.
- A number of community-led initiatives, such as Tweedgreen’s Jedderfield Farm project, seek to explore ways our communities can lead more sustainable lifestyles through education.

Policy Context

The policy landscape is complex and fragmented, with the borderland nature of the region bringing additional challenges in navigating a path to a sustainable future.

However, through consultation and research, we have seen much potential for a UNESCO Biosphere to support existing policy and strategy. There has been little indication that a Biosphere would conflict with the existing aims and objectives (relating to economic & community development and conservation & biodiversity) of the Scottish Government, Scottish Borders Council and statutory agencies, as set out in some of the key documents below:

- Land Use Strategy for Scotland 2016 – 2021 (Scottish Government)
- Scottish Biodiversity Strategy, post 2020 Statement of Intent (Scottish Government)
- Climate Change Plan, 2018 - 2032 (Scottish Government)
- Scottish Borders Local Biodiversity Action Plan, 2018 - 2028 (Scottish Borders Council)
- Scottish Borders Council Responding to the Climate Emergency Report 2020
- Scotland’s Forestry Strategy 2019 – 2029
- State of Nature Report, 2019
- South of Scotland Enterprise Act 2019

From these documents, a number of statements and objectives shared with UNESCO Biospheres have been identified:

- Aim for a green recovery, including the delivery of green growth.
- Aim for the area to be an exemplar for the UK in the development of clean growth rural land management practices.
- Promotion of the sustainable and efficient use and re-use of resources.
- Aim to maintain, protect and enhance natural and cultural diversity and the quality of the environment
- Recognition that land use is important to communities and individuals as well as land-owners and policy makers.
- Recognition that biodiversity is not only inherently valuable but key to supporting the local economy.

Existing Initiatives and Investment

Initiatives and investments at a range of scales are currently being developed and delivered within the Scottish Borders and north Northumberland. These initiatives include, but are not limited to:

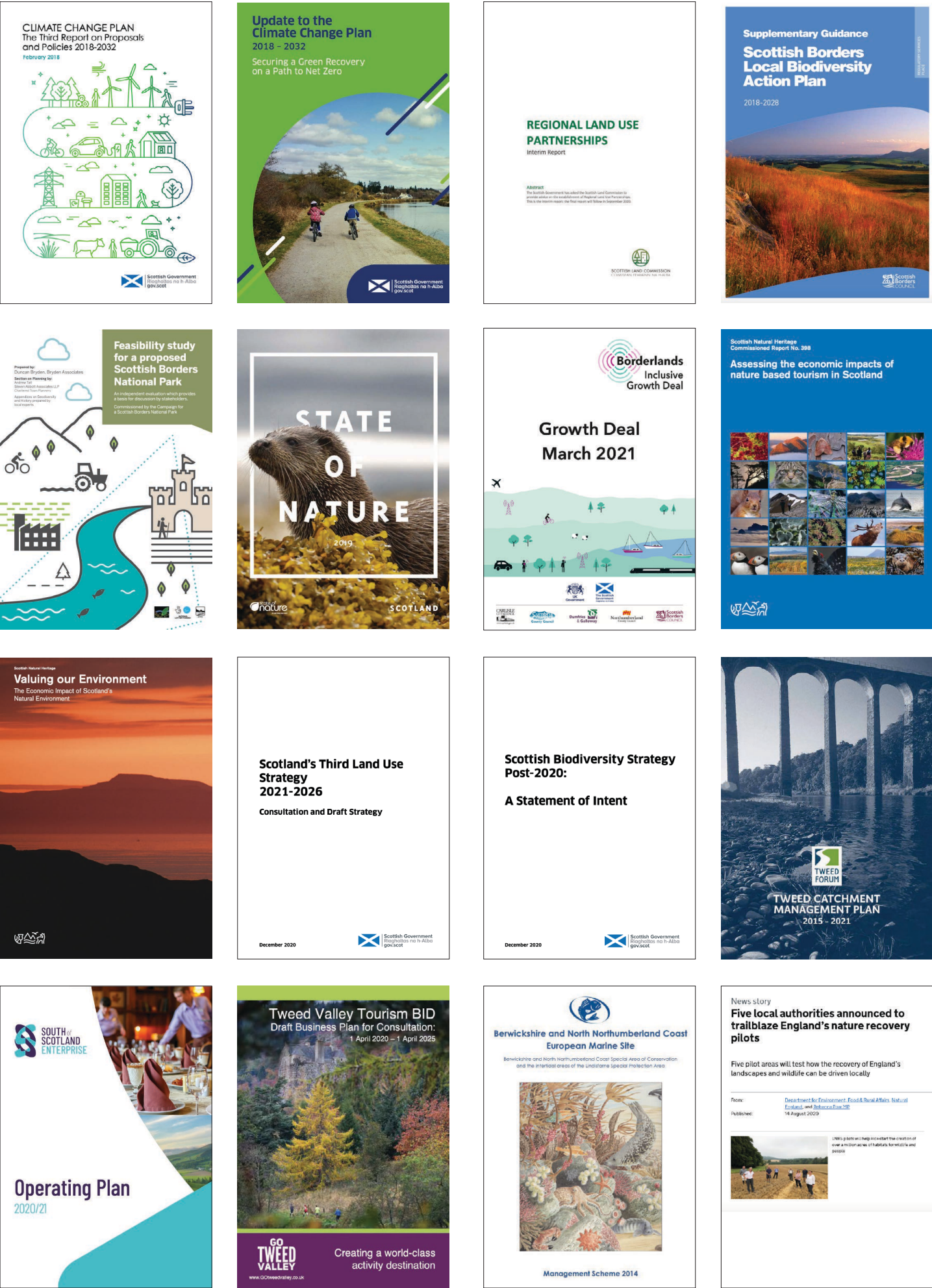
- Regional Land Use Partnerships, Scottish Borders pilot (2021- 2023)
- Borderlands Inclusive Growth Deal, including Destination Tweed, Natural Capital projects and Rural Skills & Innovation projects (2021 - 2031)
- Local Nature Recovery Strategy, Northumberland pilot (2020 - 2021)
- Great Northumberland Forest (2019 - ongoing)
- Northumberland Peat Partnership (including Tweed Forum, established 2021)
- Campaign for a Scottish Borders National Park (2016 - ongoing)

UNESCO Biospheres act like an umbrella, providing a long-term structure to bring a range of components together, including initiatives such as those listed above. The Biosphere does not seek to take control of the other components, but rather facilitate connections between them, bringing together stakeholders who wouldn’t usually engage in dialogue.

The Biosphere also shapes future initiatives and investments, helping to align the aims of each component so that energy is focussed towards the shared vision. More information about how this shared vision is established can be found on pages 14 & 15.

In order to build on the work already happening in the Scottish Borders, it is important to consider the timing for establishing a UNESCO Biosphere. A suggested time-line can be found on page 31.

Opposite: Covers of recent selected strategies, action plans, management plans, studies and reports relating to the environment and communities of the Scottish Borders.



Tool Not Title

Each UNESCO Biosphere is different in its geographic, social and political context. Biospheres therefore use their designations to address different issues. Some Biospheres may have a particular interest in marketing their areas for eco-tourism, while for others there may be a strong focus on habitat creation. Through the Biosphere nomination process and after designation, communities and stakeholders work together to determine the issues that they would like their Biosphere to help them address.

The Scottish Borders context lends itself to particular types of opportunities. Below are some ideas for discussion:

- Creation and conservation of pollinator habitat along SAC designated watercourses
- Adaptation of upland land uses to support local livelihoods
- Exploration of community ownership and/or management of fisheries
- Development of regional e-bike hire and charging service to support eco-tourism and de-carbonisation of rural travel

Example: Rhön Biosphere

The Rhön Biosphere in central Germany uses the branding of regional products to support both conservation and development objectives. The Rhön sheep, one of the oldest livestock breeds in Germany, was reintroduced to the area for conservation grazing and as a local delicacy, supporting local farmers.

In the Scottish Borders, the restoration of species rich grasslands and floodplains could lend itself to the conservation grazing of heritage breed sheep. Hawick based heritage meat butcher ‘Going Native’, is already developing a market for this type of local produce.

Example: North Devon Biosphere

In the North Devon Biosphere a number of habitat restoration projects build on previous habitat management and creation experiments. This work is helping the area to build resilience against climate change as heavier rainfalls risk more severe flooding events.

In the Scottish Borders, restoring peatlands in the upper part of the Tweed catchment can help to slow the flow of water into the rivers, reducing peak flow during storms.

Through consultation, a number of questions were raised concerning the difference between National Parks and UNESCO Biospheres. The two designations share some common aims, but seek to achieve these through different means:	
National Park	UNESCO Biosphere
Statutory Body	Non Statutory Body
Nationally designated through Scottish Government	Internationally designated through UNESCO with support of UK and Scottish government
	Part of a world network of Biospheres that shares international learning
Regulatory governance model (primarily through planning and public access)	Participatory governance model seeking to address challenges and opportunities through discussion
Aims	Aims
conserve and enhance the natural and cultural heritage of the area	contribute to the conservation of biological and cultural diversity
promote sustainable use of an area’s natural resources	foster economic and human development which is socio-culturally & ecologically sustainable
promote understanding and enjoyment of the special qualities of the area by the public	provide support for research, monitoring, education and exchange related to local, national and global issues of conservation and development.
promote sustainable economic and social development of the area’s communities	support mitigation and adaptation to climate change and other aspects of global environmental change

Opposite: the Cheviot Hills from Chirnside ¹



Education & Exchange

Education is a key component of UNESCO Biospheres. Education enables people living and working in the Biosphere to make informed decisions about the sustainable use of its resources. At a management level, sound scientific research combined with local and traditional knowledge provides a basis for decision making.

Education takes place at all levels and is a collaborative activity. A Biosphere does not contain an ‘education department’, but rather collaborates on projects with universities, research institutions, local schools, charities and organisations.

UNESCO’s national and international Biosphere networks also play an important role as forums for the exchange of knowledge, experience and research. Biospheres can learn from each other through research visits, stakeholder exchanges and thematic summer schools and conferences.

The diagram below illustrates the range of educational activities which make Biospheres important learning places for sustainable development. The thematic focus of these activities would depend upon the unique context of the Biosphere.

Existing Research Interests & Strengths

Organisations in the Scottish Borders are already contributing to a number of research areas and some of this work is recognised at a UK level:

- Wild Seasons: Nature-based Tourism (Southern Uplands Partnership)
- South of Scotland Golden Eagle Project (Southern Uplands Partnership)
- Talla Hart-Fell Wild Land: Economic Appraisal (Southern Uplands Partnership, SRUC)
- Integrated catchment management (Tweed Forum)
- Natural flood management (Tweed Forum, Dundee University and the University of Edinburgh)
- Invasive non-native species management (Tweed Forum, Tweed Foundation)
- Migratory fish population dynamics, fish population structure and impact of global warming on migratory fish (Tweed Foundation)
- Textiles industry heritage (Heriot-Watt School of Design)

Future Opportunities: Education & Training

Through creating partnerships with organisations already working in the Scottish Borders, a UNESCO Biosphere could support opportunities for:

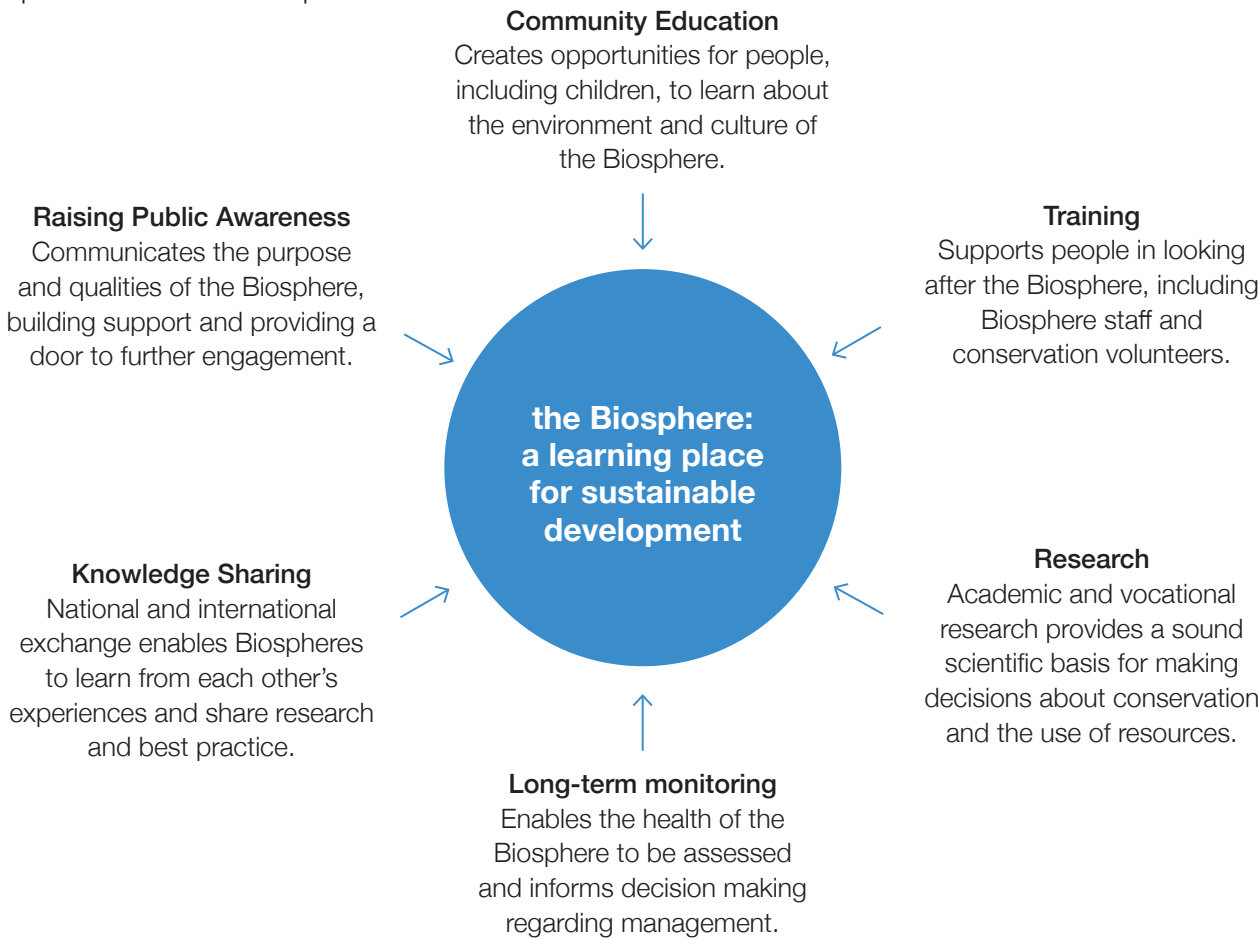
- Live projects for the Rural Skills department at the Borders College and the proposed Rural Skills Academy at the Roxburgh Estate
- Project themed learning in schools, similar to the model being developed at Kelso High School
- Live projects for conservation tourism, being promoted through the Tweed Valley Tourism BID and the Southern Uplands Partnership
- Hands-on training for volunteers with organisations already working in the Biosphere’s Core and Buffer areas, such as the Borders Forest Trust, Scottish Wildlife Trust and John Muir Trust
- PhD, Masters and Undergraduate research projects in collaboration with universities, (eg. Centre for the Rural Economy at Newcastle University, Heriot-Watt University).
- Practical training for land managers to help them carry out tasks in ways which support biodiversity.
- Youth participation in national and international exchanges and conferences organised through the Man and the Biosphere Programme.

Future Opportunities: Research & Monitoring

New research in the Biosphere would seek to further the Biosphere’s purpose and could be in a variety of areas including applied science, social science, arts & humanities and interdisciplinary. It is usual for scientists and researchers working with a Biosphere, over time, to develop a number of specialist research interests which reflect the Biosphere’s vision and purpose.

The vision for a Scottish Borders Biosphere would be defined during the nomination process, however examples of some relevant research interests are listed below:

- Opportunities for conservation tourism and nature-based tourism
- Opportunities for community ownership of assets, including land and waterways
- Managing rivers for competing or conflicting recreational demands
- Value of traditional land management practices in supporting and enhancing biodiversity
- Relationship between peatland and riverine hydrological systems
- The effects of riparian land-use on the quality of aquatic and wetland habitats



Outdoor learning with primary school children ²



Youth delegates at the first MAB Youth Forum, Italy ³

Participation and Process

UNESCO Biospheres take a participatory approach, both during their nomination and establishment phase and through their ongoing management. This means that rather than being managed from the top-down through a regulatory system, decision making is carried out with and by local communities.

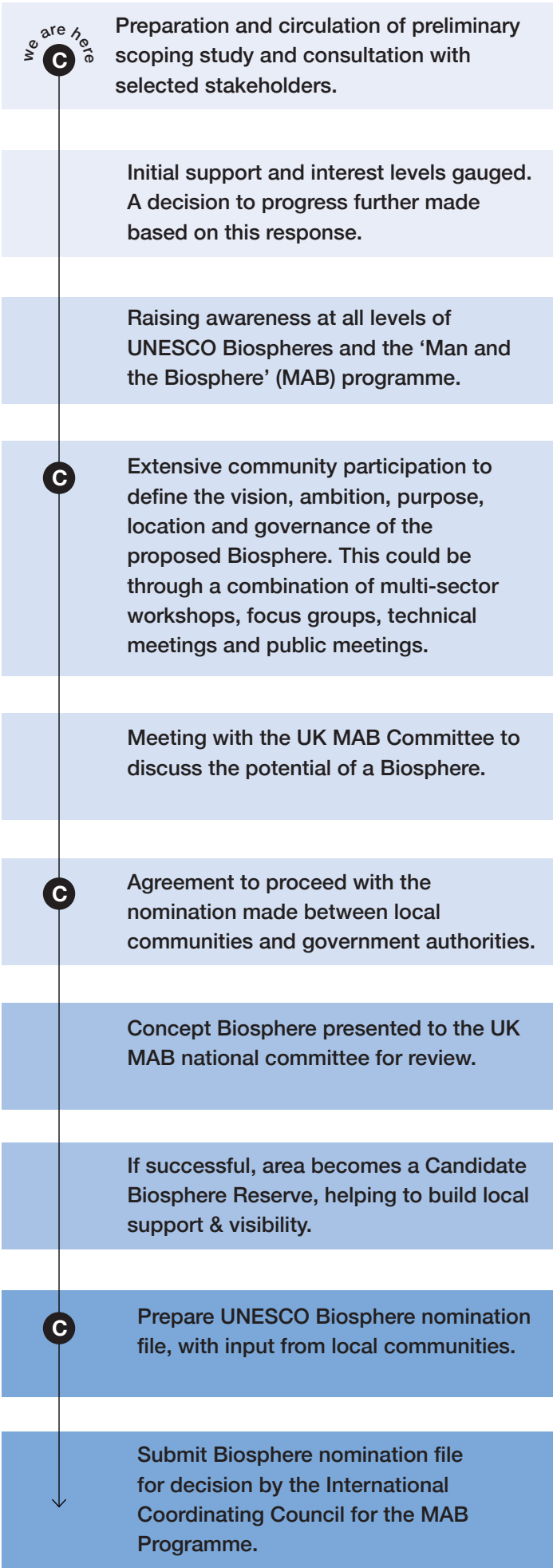
Local communities refers not only to stakeholders (for example local councillors, or representatives from organisations such as the RSPB or National Farmer’s Union), but includes everyone who lives and works in the Biosphere.

The process of becoming a UNESCO Biosphere is a long one, usually lasting several years. Whilst this can bring challenges in terms of resourcing, it also allows time for the Biosphere’s vision to be developed though an iterative process of community engagement. Questions to be considered as part of this process would include;

- Why do we want to create a Biosphere?
- How will we benefit from the Biosphere?
- How will we use the Biosphere concept in our daily lives?
- How will we contribute to the World Network of Biosphere reserves?

The flow diagram opposite summarises the first stages of the nomination process. Whilst only a rough guide, the diagram illustrates how communities are involved in the drafting, approving and supporting of the vision.

C community involvement in decision making



Governance from Grassroots

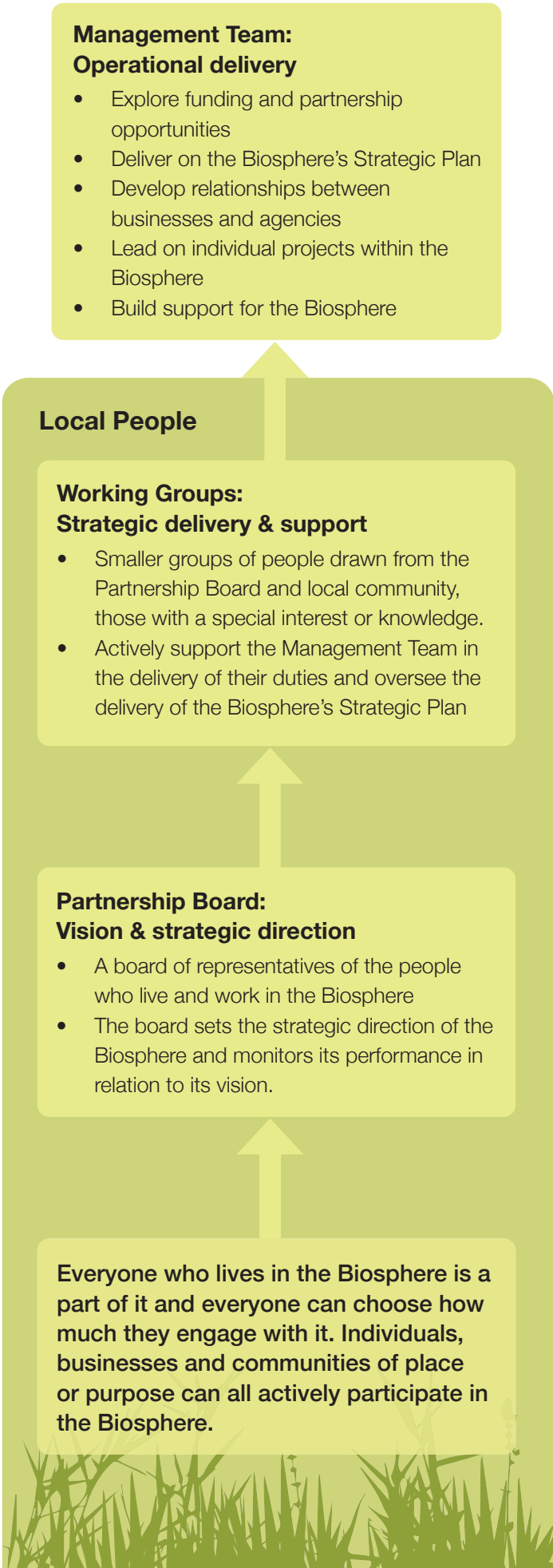
As a global designation, UNESCO Biospheres are, by necessity, relatively flexible frameworks. Each Biosphere has its own governance structure, specific to the geographic, social and economic context in which it is operating. The structure aims to be democratic and inclusive of stakeholders. Wherever possible, those participating in the governance of the Biosphere should have an equal voice, regardless of their societal position.

The diagram opposite provides an example of what a governance structure for a Biosphere in the Scottish Borders could look like. The example is loosely based on the structure used in the Galloway and Southern Ayrshire Biosphere. Whilst this provides a discussion point, it is important that the structure be developed out of the local context. In the Scottish Borders, this might involve considering the role already played by organisations such as the Tweed Forum and The Tweed Foundation.

Crucially, as the diagram illustrates, the structure can be grown from the grassroots up, involving local people in several levels, including at the strategic level. Participants can be drawn from a wide range of communities and organisations, but could include:

- Community Trusts, such as the Tweedsmuir Community Company
- Local business owners, such as activity and accommodation providers
- Primary and secondary food producers
- Green groups such as Greener Melrose and Sea the Change
- Borders College
- Borders Forest Trust
- Southern Uplands Partnership
- Tweed Valley Tourism BID
- Forestry and Land Scotland
- The Tweed Foundation
- The Tweed Forum
- Local councillors

Day-to-day management of the Biosphere is carried out by a small management team. These team members are recruited specifically for these roles, for which ongoing funding is required.



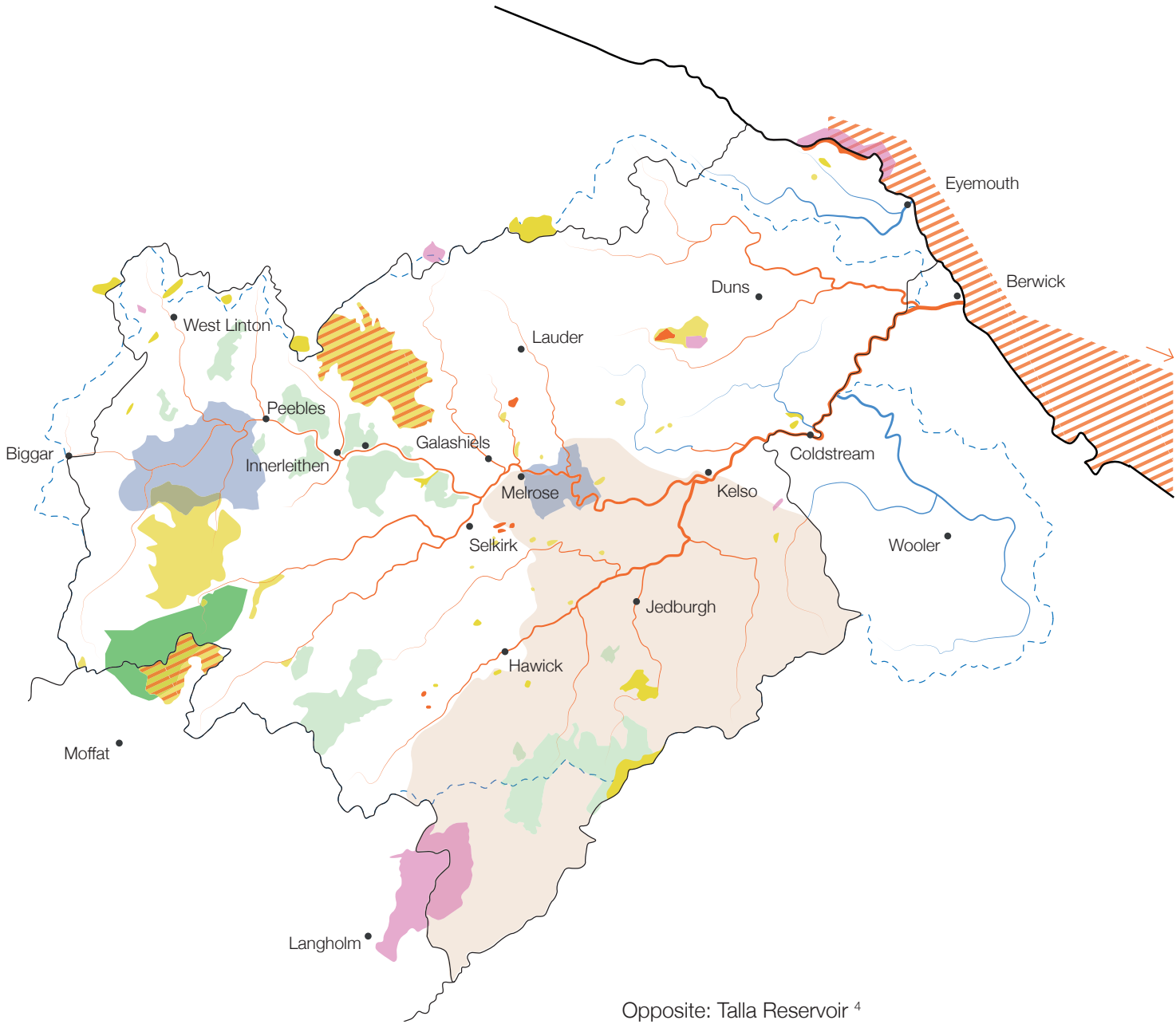


Spatial Options: Overview

The map below shows the areas within the Scottish Borders that are protected with Scottish or EU conservation designations. The Core areas of a Biosphere must already be protected through a designation of SSSI, SAC or SPA.

On the following page, four spatial options for a UNESCO Biosphere are set out for discussion. These are starting points, and it may be that a combination or hybrid of two of these is most appropriate.

- Existing conservation designations**
- Special Area of Conservation (SAC) - European site
 - Special Protection Area (SPA) - European site
 - Site of Special Scientific Interest (SSSI)
 - National Scenic Area (NSA)
 - Talla - Hart Fells Wild Land Area (WLA)
 - Area proposed for Scottish Borders National Park
 - National Forest Estate (2019)
 - River Tweed Catchment Area



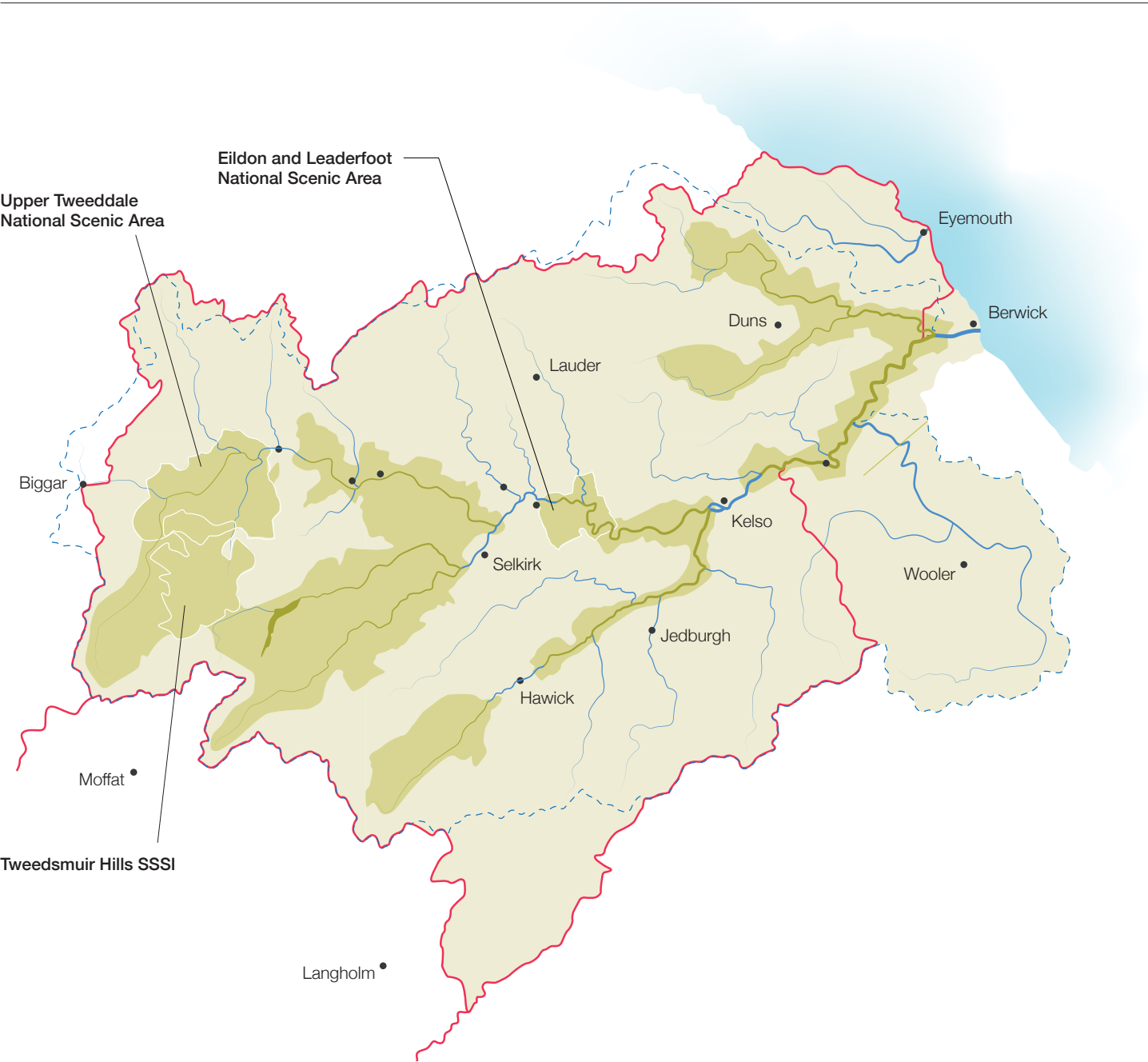
Opposite: Talla Reservoir ⁴

Spatial Option 1

The River Tweed

Overview

The most ambitious of the four spatial proposals, this option encompasses the whole of the Scottish Borders, along with a portion of Northumberland and the Lothians, to enable the Biosphere to cover the entirety of the River Tweed Catchment. The SSSI and SAC designated River Tweed and Whiteadder, Blackadder, Teviot, Ettrick and Yarrow tributaries would form the Core of the Biosphere. The Buffer Zone takes in some of the smaller riverside towns and villages, along with the Moorfoot Hills and Tweedsmuir Hills SSSIs and the Eildon & Leaderfoot and Upper Tweeddale National Scenic Areas.



Strengths

- Could strengthen and progress the catchment-wide approach to environmental management already pursued through the work of the Tweed Forum.
- Trans-boundary option which could promote an environment-led approach to sustainable development strategy in border regions.
- Option to include the Berwickshire and North Northumberland Coast SAC in the Core zone, which could enhance understanding of the river network and sea as a connected hydrological system. This could help address issues around nutrient levels and pollution more effectively, for example.
- Could collectively support land-managers in adapting their practices, identifying opportunities & threads and navigating policy changes as a result of the climate and biodiversity emergency.
- Would be unique as the only UK UNESCO Biosphere reserve to be formed around a complete river system.
- Promotes a marketable identity for the area based on the River Tweed and its tributaries, building on the work of Destination Tweed and existing recognition of the area as a fishing destination.
- Regional approach may be viewed favourably by UNESCO. A precedent for the river catchment-scale approach is the Dordogne Basin Biosphere in France, a case study for which can be found on page 27.

Challenges

- Establishing a Buffer Zone around the watercourses which meets UNESCO’s criteria. With many of the larger towns and villages situated on the river, this poses a challenge because these settlements may not be considered as being compatible with the objectives of the Core Zone.
- May be challenging to bring many divergent communities from across the region together under a single ‘umbrella’, both logistically and in terms of identity.

Spatial Option 2

The Tweed Valley

Overview

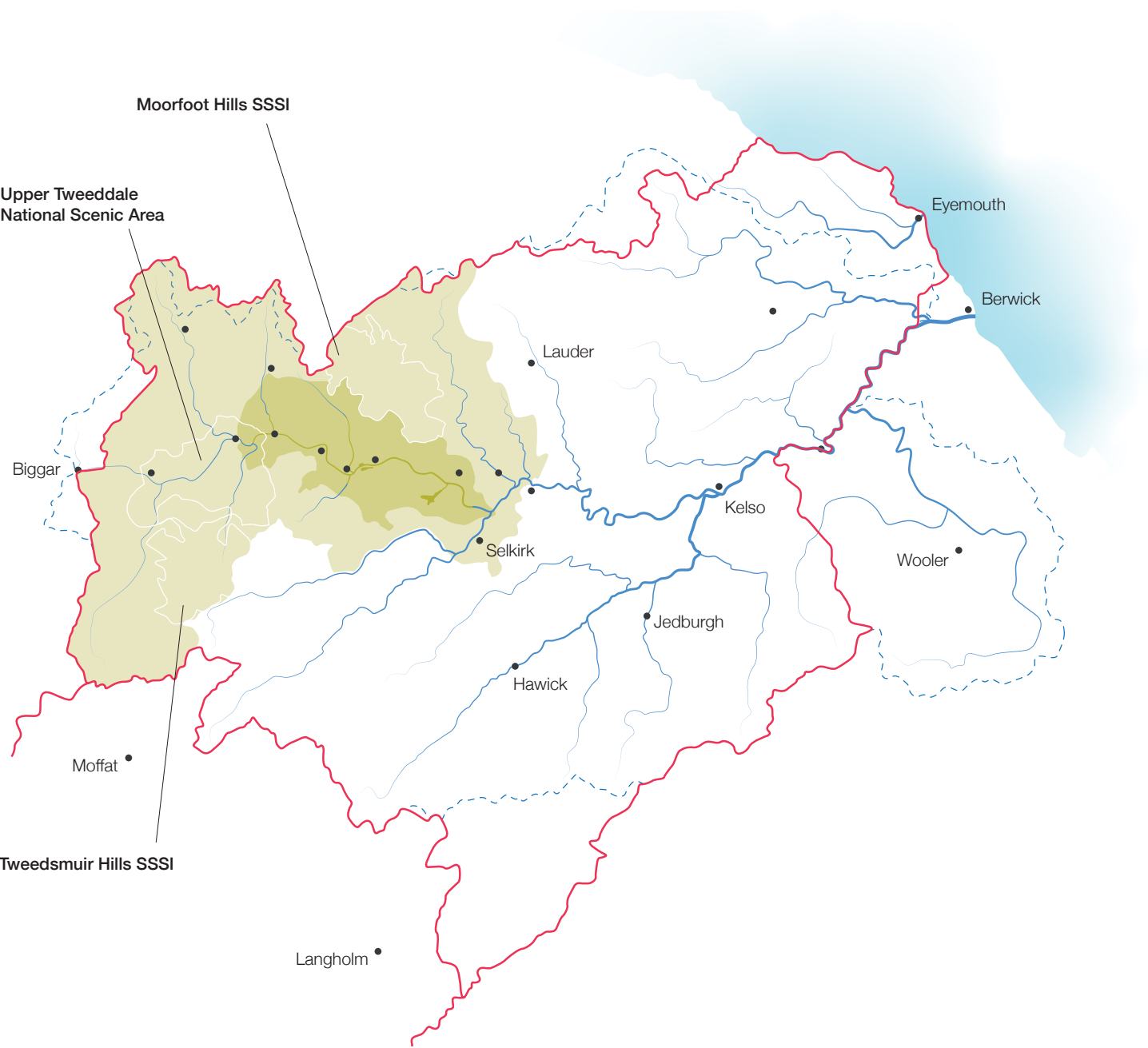
This option focusses on the area around the Tweed Valley Forest Park, with the Transition Zone extending to the upland areas of Upper Tweeddale and Tweedsmuir. The Core of the Biosphere would be the river network within the Tweed Valley, including a portion of the river Tweed and small sections of the Leithen Water, Eddleston Water, Quair Water and Glenkinnon Burn tributaries. The Buffer Zone takes in the Tweed Valley Forest Park, working forests which are managed by Forestry and Land Scotland to provide space for recreation alongside forestry operations.

Proposed Biosphere Zoning

- Core Zone
- Buffer Zone
- Transition Zone

Existing Boundaries

- Scottish Borders Administrative Boundary
- River Tweed Catchment Area



Strengths

- Existing distinctive identity as an activity hotspot is being strengthened through the work of the Tweed Valley Tourism BID and the proposed creation of a Mountain Biking Innovation Centre in Innerleithen. A Biosphere in this area could help monitor and manage visitor impact on the environment as more people use the area for recreation.
- There is already ambition to develop opportunities for conservation tourism within the Tweed Valley area, which could be further promoted through a UNESCO Biosphere. The John Muir Trust site at Glenlude provides an example of the opportunities that can be created for learning, volunteering and research.
- Focus on the farthest upstream section of the Tweed with a significant population size could help mitigate environmental issues further downstream such as flooding, invasive species and pollution.
- Possibility of specialist research focus on impact of forest management on water quality.
- Buffer Zone could extend further, into the Upper Tweeddale National Scenic Area, Tweedsmuir Hills SSSI and Moorfoot Hills SSSI, linking the hydrology of peatland and river.
- Very close proximity to Edinburgh for potential research activity (30mins drive / 50mins train)
- Boundary could sit within the Scottish Borders Administrative boundary.

Challenges

- Buffer Zone would include the larger towns and villages of Peebles, Cardrona, Innerleithen and Walkerburn. Whilst this could provide an opportunity for these settlements to move towards sustainable development objectives such as net-zero, further research is needed to understand the short-term implications for these communities.
- Securing funding for a Biosphere in a specific area of the Scottish Borders which is already seeing some investment and which features the smallest population size of all the proposed spatial options.

Spatial Option 3

Central Borders & Eildon Hills

Overview

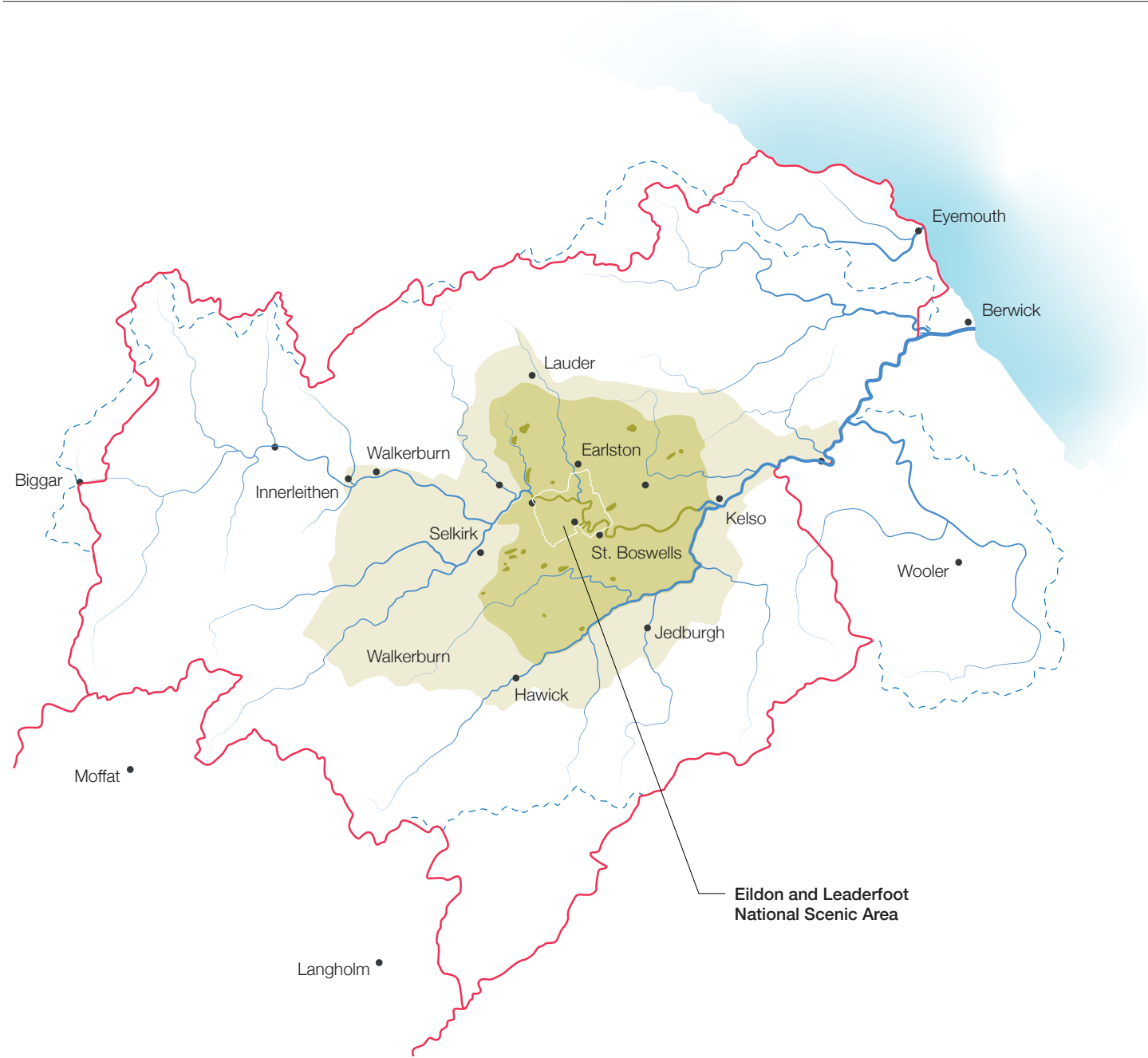
This option, focussed on the central area of the Scottish Borders, takes in many of the largest towns and villages, including areas which score lowest regionally on the Scottish Index of Multiple Deprivation and which have been negatively impacted by the decline of the textile industry. Although this proposal includes the highly scenic, historic and distinctive area around the Eildon Hills, the Core Zone has a less well-defined character, comprising a stretch of the river Tweed and a large cluster of small SSSI sites, the majority of which are mosses and mires.

Proposed Biosphere Zoning

- Core Zone
- Buffer Zone
- Transition Zone

Existing Boundaries

- Scottish Borders Administrative Boundary
- River Tweed Catchment Area



Strengths

- Central Scottish Borders location which takes in a large proportion of the population, including towns and villages that would benefit from further investment. A Biosphere in this area may help unite some of the disparate and diverse communities in the Scottish Borders, whilst still allowing each to retain their strong local identity.
- Includes the Eildon and Leaderfoot National Scenic Area, one of the most distinctive landscapes in the Scottish Borders which has a rich cultural heritage.
- Presence of Heriot-Watt University, Borders College and the Scottish Borders Council Headquarters within the Biosphere could offer valuable opportunities for education and research activity.
- Economic development is currently at the heart of the Scottish Borders Council's purpose. There is pressure to increase the value of the textiles, tourism, construction, creative, farming and food & drink industries, activities which all take place within this spatial proposal. A Biosphere could help the economic development of the area take place whilst enhancing the quality of the environment, a key driver for people wishing to live and work here.
- Possibility of specialist research focus on relationship between agriculture and water resources / quality.

Weaknesses

- The outer boundary of both the Buffer and Transition Zones is difficult to define, with no clear natural or administrative boundary. Deciding which land falls within these areas could be particularly challenging and could risks lacking clear justification.
- The Buffer Zone, sitting to the east of Galashiels, is largely comprised of low-lying agricultural land. With most of this land being in private ownership, achieving buy-in, particularly in the early stages, may be challenging.
- The character of the Core Zone is a little ill-defined, which could create a confused identity for the Biosphere. Although the diagram opposite proposes a Core including the river Tweed and the scattered SSSI sites, it would be helpful to explore the possibility of using just one of these.

Spatial Option 4

The Tweedsmuir Hills

Overview

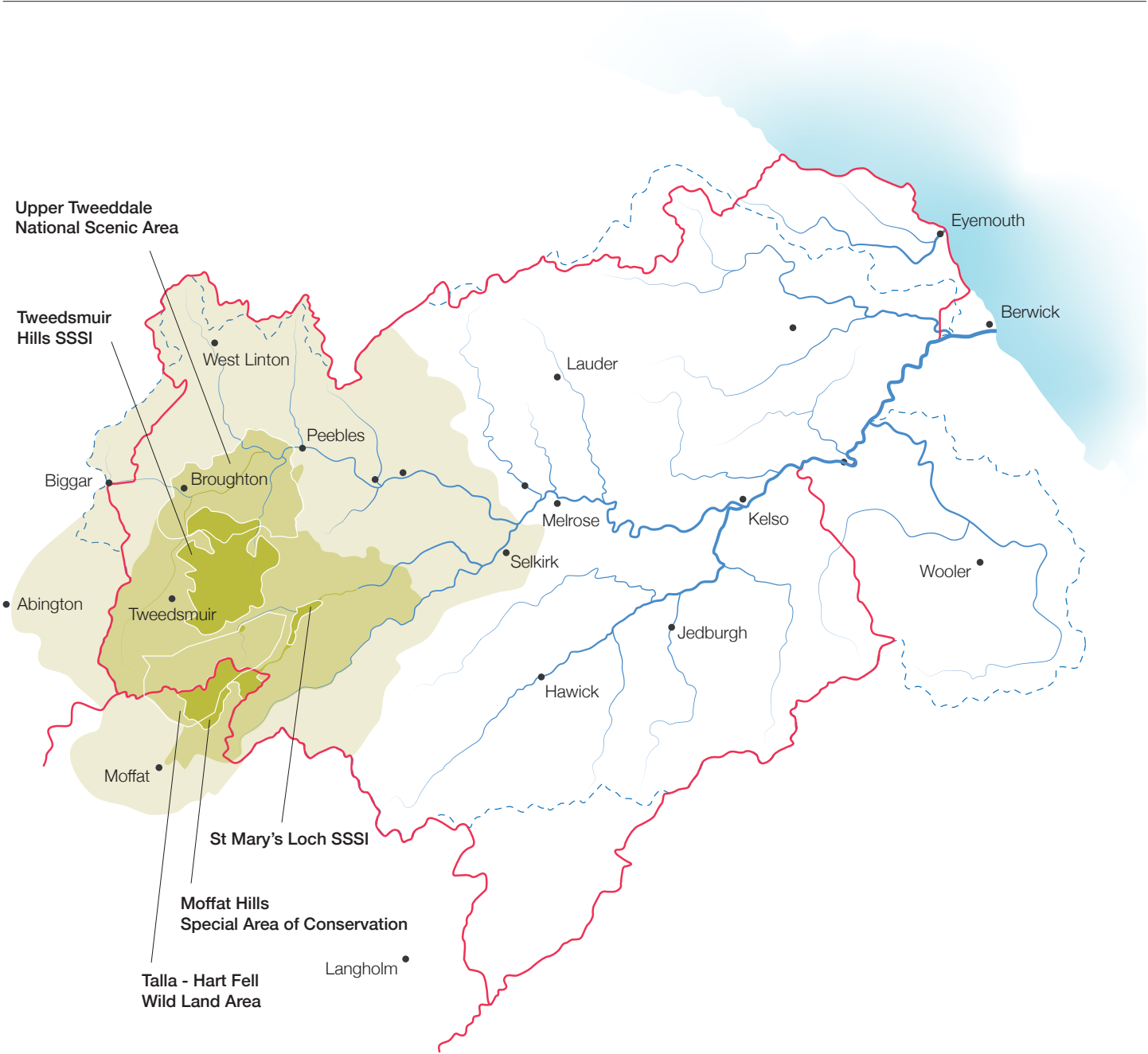
In this ‘currant bun’ spatial option, a number of large designated sites of national and European importance form or surround the Core Zone. Focussing on the exposed uplands in the west of the Scottish Borders, the location of the highest hills in the region, the Buffer Zone takes in the source of several rivers including the Yarrow Water, Ettrick Water, Manor Water and the Tweed itself. The Transition Zone includes yet further river sources and is home to settlements of a larger scale in both the Scottish Borders and Dumfries and Galloway.

Proposed Biosphere Zoning

- Core Zone
- Buffer Zone
- Transition Zone

Existing Boundaries

- Scottish Borders Administrative Boundary
- River Tweed Catchment Area



Strengths

- Covering the whole western portion of the Scottish Borders, this option has a distinctive character and identity and is home to several strong, engaged communities. These attributes form a good starting point which could be strengthened through a Biosphere.
- Encompasses some of the largest protected areas in the Scottish Borders, including the Talla - Hart Fell Wild Land Area, the focus of an Economic Opportunities Appraisal by Scotland's Rural College.
- Includes the source of the Tweed and several of its tributaries. The environmental condition of these upland areas has a significant impact on the health of the river downstream.
- Few, small but strong communities within the Buffer area, with larger centres of population sitting in the Transition Zone.
- Tweedmuir and the Ettrick and Yarrow valleys are facing competing demands on the land, including afforestation, wind-farm development, farming and community uses. A Biosphere in this area could help facilitate negotiation between stakeholders to support development which is sustainable for the long-term.
- A Biosphere could support the future economic viability of communities which are facing ongoing depopulation.
- Could complement the activity-focussed tourism offering in the Tweed Valley, providing a different experience within close reach.

Weaknesses

- Due to the proximity of the Core and Buffer Zones to the administrative boundary, this options extends into Dumfries and Galloway. With the presence of the Galloway & Southern Ayrshire Biosphere, this is a potenital stumbling block from funding perspective.
- Of all the spatial options, the rural, upland nature of this one makes it most similar to the character of the Galloway and Southern Ayrshire Biosphere. It may be preferable to pursue an option which has an identity more distinct from the Biosphere which already existis within the south of Scotland.

Case Study: Amazon of Europe

Location
Transboundary UNESCO Biosphere spanning Austria, Croatia, Hungary, Serbia and Slovenia.

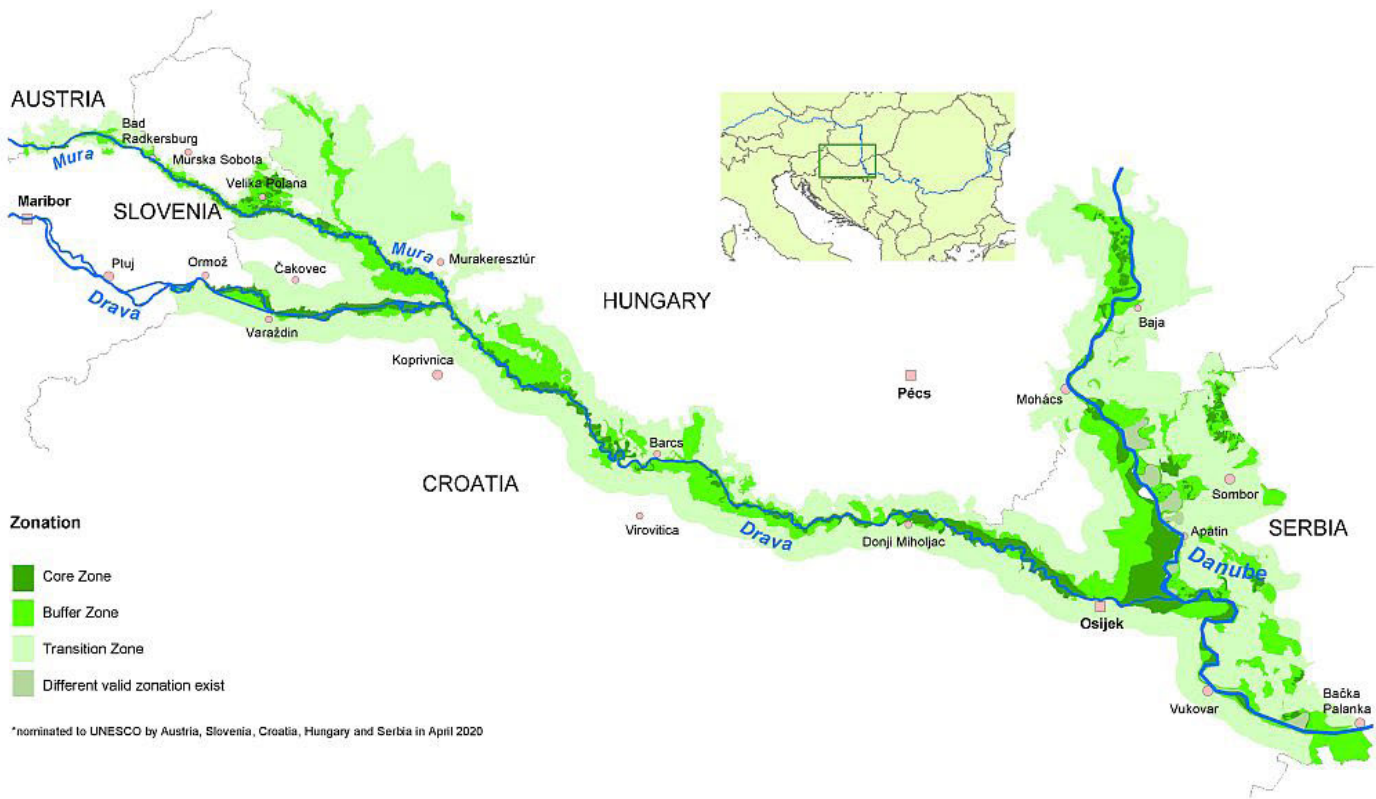
Character / Ecosystem
The Biosphere follows the Mura, Drava and Danube river systems and includes floodplain forests, river islands, sand and gravel banks and oxbows. It is a biodiversity hotspot, used by migratory waterfowl and home to several species of endangered birds.

Size	Year established
631,461 hectares	2012



Points of Relevance

- Trans-boundary approach to ecosystem management, protecting this 700km-long ‘green corridor’ from conflicting practices.
- Core Zone covers the rivers and associated floodplains. The Buffer zone covers cultivated land and villages along the river, separated from the floodplain by flood prevention dykes. Key activities in the Buffer zone include extensive agriculture (cattle grazing, hay making, organic production), eco-tourism and the marketing of local products.
- The Biosphere is working to change management practices which are degrading the riverine environment, including channelling of watercourses and sediment extraction. Through the introduction of sustainable management, negative impacts on fish stocks, drinking water quality, forest heath and downstream flooding are reduced.
- A major function of the Biosphere is to provide a training ground for the revival and modernisation of floodplain management.



Above: Map showing the zonation of the Biosphere⁵, Top: Fishing in the Mura-Drava-Danube Biosphere⁶

Case Study: Biosphere Bassin Dordogne

Location
Dordogne region, France

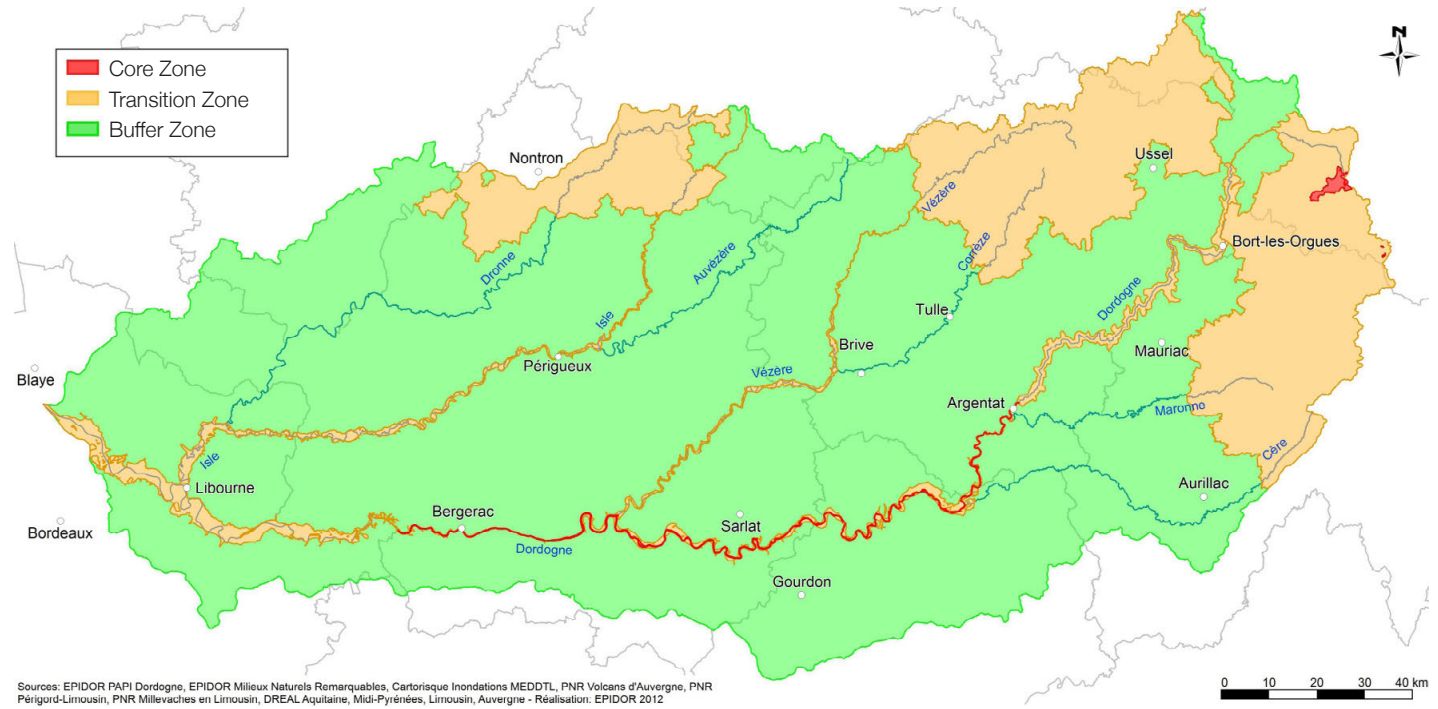
Character / Ecosystem
A catchment-wide Biosphere covering the whole of France’s Dordogne region, an area rich in cultural history and ongoing traditions. The catchment supplies water for the entire region and is the last river in Europe where all of Western Europe’s migratory fish can be found.

Size	Year established
2,397,190 hectares	2012



Points of Relevance

- One of the few Biospheres to cover a whole river catchment. The Biosphere supports dialogue and governance of the area at the catchment-wide scale, important for a river which provides vital ecosystem-services to the region.
- Key issues for the area include water pollution (eutrophication, toxic substances), loss of biodiversity, loss of floodplains, invasive species, conflicts between water and land use, disappearance of river-related cultural heritage.
- The resources of the Biosphere are used by many people, it is one of Europe’s main sites for freshwater recreational activity and features extensive agricultural land. The Biosphere helps to manage competing demands on the environment, including freshwater supply and agricultural irrigation, energy production, tourism and resident activity.
- The size of the Biosphere means it features several areas with different landscape character types.



Above: Map showing the zonation of the Biosphere⁷, Top: Kayaking on the Dordogne River⁸

Case Study: The Maasheggen Biosphere

Location
South-east Netherlands

Character / Ecosystem
An agricultural riverine landscape which has been shaped by the continuous interaction of people with the environment. The Biosphere includes the oldest and largest network of hedges in the Netherlands which create a mosaic of small agricultural fields.

Size	Year established
6,700 hectares	2018



Points of Relevance

- An agricultural area which has retained its ancient hedge-laying practices to create a working landscape rich in biodiversity and cultural heritage. Woven hedgerows enclose fields for cultivation and grazing cattle whilst providing a habitat for a diverse array of flora and fauna.
- The Maasheggen Biosphere aims to connect ecological, recreational, agricultural and historical values to create a strong sustainable tourism offering.
- Through scientific research, modern agricultural techniques are being developed to complement ancient practices.
- In places, the river forms the boundary between to of the country's provinces. The Biosphere is helping stakeholders on both sides of the river to work together.
- The river valley forms an integral part of the Netherlands' water management plans.



Above: The mosaic of small fields enclosed by ancient woven hedges ⁹. Top: Hedge-laying championships in the Biosphere ¹⁰

Case Study: Galloway & Southern Ayrshire

Location
South-west Scotland

Character / Ecosystem
A largely rural Biosphere focussed on the upland areas around the Merrick, the highest peak in Southern Scotland. The area includes moorland, mires, forests, farmland and river valleys and is characterised by a large number of small towns and villages.

Size	Year established
526,888 hectares	2012



Points of Relevance

- A local example which was initiated by the Southern Uplands Partnership. This Biosphere could be a valuable learning resource for the development of a new Biosphere.
- The decline of traditional livelihoods, including farming, energy production, mining and textiles has had a significant impact on the area's prosperity. The Biosphere is helping demonstrate the importance of a healthy ecosystem for the future sustainability of local communities.
- 'Proud Supporters' scheme and 'Certification Mark' award are providing ways for businesses to market their products and benefit from the recognition that a UNESCO association brings.
- The Biosphere is facilitating conversations between the forestry and agriculture industries at a strategic level, with the aim of better managing demands on the land. A new Land Use and Biodiversity team will provide-on-the-ground support to land managers, helping them ensure business viability.

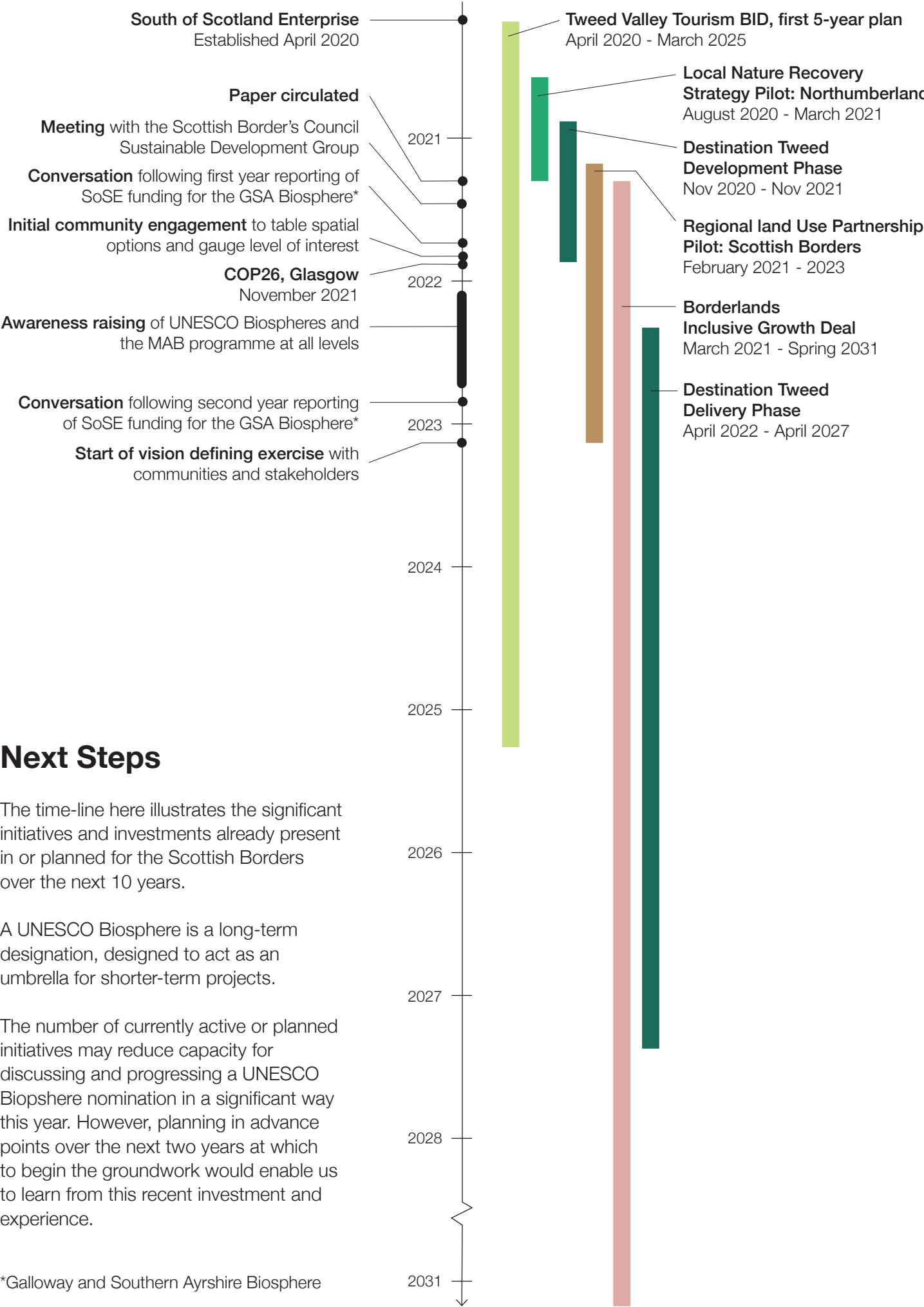


Above: Cycling holidays in the Biosphere ¹¹, Top: Local Businesses receive their 'Certification Mark' Award ¹²

Conclusions

This paper set out to scope the opportunity of creating a UNESCO Biosphere in the Scottish Borders. Through research, mapping and consultation, a number of important questions have been raised and possible opportunities explored. The following bullet points summarise the key findings and provide a reference for future discussion.

- In consultation, the idea was generally met with positive interest, particularly with local councillors, those involved in the tourism industry, conservation organisations and NatureScot.
- Many consultees had not heard of UNESCO Biospheres, or had only limited knowledge and understanding of them. Amongst these people, there was confusion around the difference between a UNESCO Biosphere and a National Park.
- Those most cautious of the idea included representatives from the farming, forestry and fishing industries. In order to progress further and gain support, more information about the economic and administrative implications for these industries needs to be shared.
- Many communities and stakeholders are feeling overwhelmed with the number of initiatives and investment projects that are currently active in the Scottish Borders. There is a feeling amongst some people that changes are happening to them rather than with them, particularly around tourism. If the idea of a Biosphere for the Scottish Borders is progressed, it will be important to carefully consider the timing of these actions.
- There is an opportunity to build upon the momentum of the ‘Green Recovery’ and of COP26 in November 2021. There was a feeling amongst consultees that people are increasingly seeing the connection between themselves and the natural environment, a value which is intrinsic to the functioning of a Biosphere.
- Further talks are needed with stakeholders in Northumberland to ascertain their interest in a trans-boundary Biosphere. Possible contacts for this include Jane Rose, who leads the Economic Regeneration Team and is the council’s lead for the Borderlands Inclusive Growth Deal.
- Further dialogue with the Scottish Borders Council is needed to explore how a UNESCO Biosphere would relate to the Regional Land Use Partnerships, which are currently being trialled for a second time in the Scottish Borders. It would be helpful to examine the objectives and methods of each of these in relation to the other. A suggestion was also made regarding the possibility of trialling components of the Biosphere model through the Regional Land Use Partnership pilot period.
- Potential stakeholders, including many of the consultees, may benefit from a visit to the Galloway and Southern Ayrshire Biosphere and a conversation with the Management Team and Partnership Board. It can be difficult to understand how a Biosphere affects day-to-day activity. Speaking to a range of people who live and work in an existing Biosphere may help bring this to life.
- It would be useful to have a conversation and review after the Galloway and Southern Ayrshire Biosphere has completed its first year of reporting on its current funding.
- Further conversations are needed to identify parties who would be interested in leading, supporting and funding the initiative through the nomination stages.
- The communication of any proposals should be handled very carefully from the beginning. There is a desire for transparent and honest communication, with clear messaging around the purpose and status of UNESCO Biospheres. It is hoped that this report goes some way in clarifying misconceptions which arose through consultation.



Next Steps

The time-line here illustrates the significant initiatives and investments already present in or planned for the Scottish Borders over the next 10 years.

A UNESCO Biosphere is a long-term designation, designed to act as an umbrella for shorter-term projects.

The number of currently active or planned initiatives may reduce capacity for discussing and progressing a UNESCO Biopshere nomination in a significant way this year. However, planning in advance points over the next two years at which to begin the groundwork would enable us to learn from this recent investment and experience.

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Further Reading

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