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# Ecosystem Approach Handbook

Ideas and advice for your project or partnership





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Ideas and advice for your  
project or partnership

2014

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The handbook has been informed by a stakeholder workshop and consultation and we are grateful to all those that attended the workshop and provided feedback on draft documents.

## → ..... Foreword

The Ecosystem Approach Handbook has been developed by Natural England and Countryside to help landscape scale partnerships benefit from the ecosystem approach. It builds on partnership projects that Natural England has supported in Bassenthwaite and the South Pennines to help shape future management in these areas. The handbook also draws on experience of members of the Ecosystems Knowledge Network. It reflects the requests from partners for resources and case studies and helps the delivery of England's biodiversity strategy; Biodiversity 2020: A strategy for England's wildlife and ecosystem services. We hope new and established partnerships will find the handbook useful. I welcome any feedback and further case studies and will participate in discussion via the Ecosystems Knowledge Network.

**Ruth Waters**

*Principal Specialist Ecosystem Approach and Natural Capital*

**Natural England**

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countryside 















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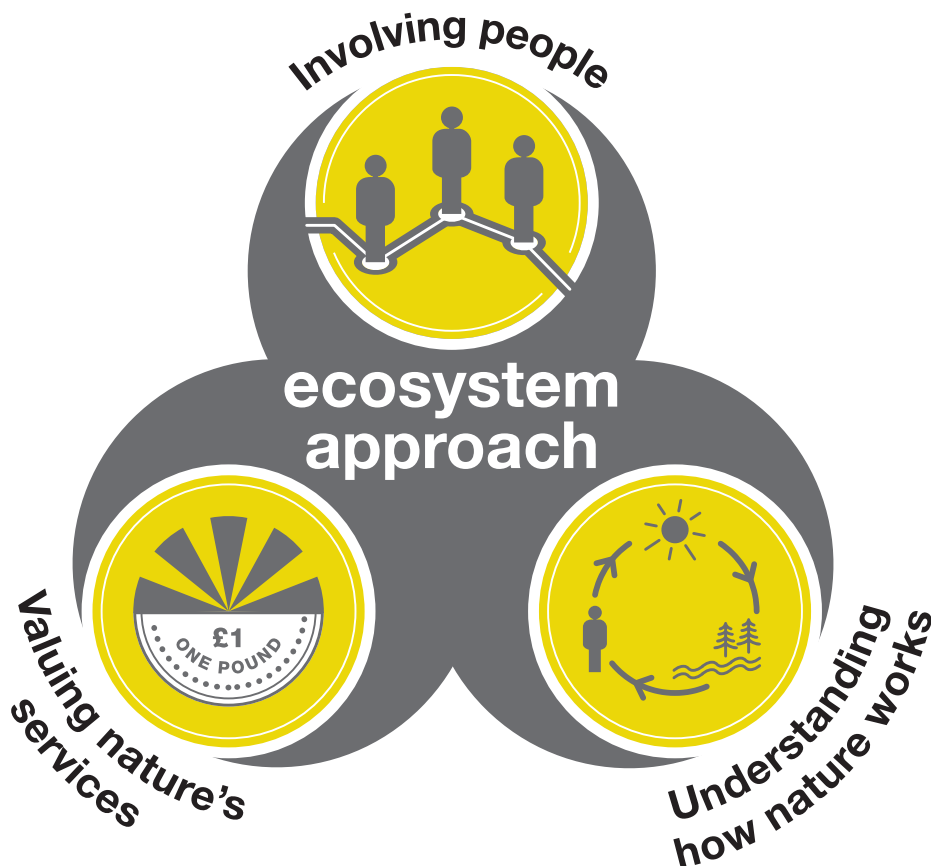




# ..... What is the ecosystem approach and why is it useful?

The ecosystem approach is about managing the environment for the benefit of people and nature. It is summed up by the following three principles:

- **Involving people** – putting people at the centre of ecosystem management by involving them at the heart of decision-making.
- **Understanding how nature works** – working in harmony with ecosystem processes and functions, and the benefits (or ‘services’) they provide. Thinking about the whole ‘system’, not just its individual parts.
- **Valuing nature’s services** – understanding how people value nature, including monetary and non-monetary value, and the effect on their well-being.





The ecosystem approach recognises that nature provides us with benefits including food, clean water and opportunities for recreation. Using the approach helps maintain and enhance these benefits, whilst enabling prosperous communities to develop.

The ecosystem approach provides a way of thinking about the value of nature, justifying its importance in planning and decision-making at all levels. The approach contributes to actions aimed at improving people's health, boosting the local economy, regenerating communities and reducing risks from adverse events such as flooding. It helps partnerships to reach positive decisions and deliver them more effectively, making better use of available knowledge and resources.

It is important that all partners and the wider community understand what is meant by the ecosystem approach. **Fact sheet 1: Understanding the ecosystem approach** explains the ecosystem approach and its key concepts in more detail.

The key benefits of the ecosystem approach are that it:

- Encourages different groups to work together and learn from each other, not just through engagement, but through meaningful involvement in planning, decision-making and actions on the ground.
- Enables a joined-up way of managing the environment, improving the effectiveness of projects and adding value to their outcomes.
- Helps to communicate the importance of the environment to individual, social and economic well-being: justifying the work that partnerships are doing and promoting the value of nature in ways that can be understood by people who do not think of themselves as part of the environment sector.
- Focuses on long-term sustainability and solutions to the major challenges of our time, such as climate change, food and energy production.



# Who is this handbook for?

This handbook is for use by landscape scale or place-based partnerships – that is, any group of organisations working together to manage an area of land. Users will include Landscape Partnerships, community-based environmental initiatives, National Parks, Areas of Outstanding Natural Beauty, Catchment Based Approach Partnerships and delivery teams for Nature Improvement Areas, and Local Nature Partnerships.

It is designed to support the Assessment Tool that can use to evaluate how partnerships are applying the ecosystem approach and what needs to be done to deliver Outcome 1C of Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services.

This handbook aims to help both new and established partnerships identify where they are already following good practice, where they need more help and advice, and how they can integrate the approach into future work. If you're involved in a partnership which is seeking to influence an ecosystem, then you may already be familiar with many aspects of the ecosystem approach.

Whether a new or existing partnership, the principles of the approach should be integrated with other action plans and existing activity 'on the ground'. It is not recommended that you create a separate ecosystem approach delivery plan.

## Established Partnerships

Many established partnerships will have a management plan or action plan stating their priorities. Existing plans may reflect aspects of the ecosystem approach. The first step for established partnerships is to assess how far the ecosystem approach is currently being applied before considering how it can be effectively integrated throughout the work of the partnership.

## New Partnerships

Integrating the ecosystem approach into new management or action plans will benefit the environment and local communities. New partnerships may use this handbook as a step by step guide to achieving this, especially where partners have no previous experience of the ecosystem approach.



# Policy context

## The international context

The ecosystem approach was first adopted in 1995 to provide a framework for implementing the **Convention on Biological Diversity** (CBD). The Convention defines the ecosystem approach as a strategy for partnerships to use within the context of other management or conservation methods. These include protected landscapes, biospheres, through national, local or site-based policies and approaches. The twelve principles of the ecosystem approach are described in [Fact sheet 2: Convention on Biological Diversity](#).

In 2012 the European Commission adopted the **EU Biodiversity Strategy to 2020**: an ambitious strategy to halt the loss of biodiversity and ecosystem services in line with the principles of the CBD. The ecosystem approach supports implementation of the **European Landscape Convention** (ELC), through its focus on the distinctive characteristics of a place and the development of landscape quality objectives in partnership with stakeholders. The same approach can be applied in designated landscapes and landscapes in need of enhancement and restoration.

## The national policy context

National policy emphasises the importance of integrated working that accounts for benefits provided by ecosystems. Ecosystems and their benefits are recognised as essential to sustainable land use planning and economic development.

Applying the ecosystem approach is the basis for the **Natural Environment White Paper** (2011) for England which advocates a better approach to managing the natural environment, taking account of ecosystems, their benefits to people and their value. It *“places the value of nature at the centre of the choices our nation must make: to enhance our environment, economic growth and personal wellbeing. By properly valuing nature today, we can safeguard the natural areas that we all cherish and from which we derive vital services.”* It also states that: *“Sustainable economic growth relies on services provided by the natural environment, often referred to as ‘ecosystem services’.”*<sup>1</sup>

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<sup>1</sup> Defra (2011) Natural Environment White Paper, *The Natural Choice: securing the value of nature*. Crown Copyright: UK

**The National Planning Policy Framework** (NPPF) for England<sup>2</sup>, published in 2012, recognises that: *“The planning system should contribute to and enhance the natural and local environment by recognising the wider benefits of ecosystem services.”*<sup>3</sup>

**Biodiversity 2020<sup>4</sup> for England (published by Defra)** builds upon the Natural Environment White Paper and represents a step change in the delivery of outcomes for biodiversity and ecosystems. It provides the context for meeting international and national commitments to biodiversity, whilst establishing the direction and approach to biodiversity policy for the next ten years. The measure for partnerships demonstrating their use of the ecosystem approach is Biodiversity 2020 Outcome 1C, which states that:

- **“By 2020, at least 17% of land and inland water**
- **especially areas of particular importance**
- **for biodiversity and ecosystem services, are**
- **conserved through effective, integrated and**
- **joined up approaches to safeguard biodiversity**
- **and ecosystem services including through**
- **management of our existing systems of**
- **protected areas and the establishment of**
- **Nature Improvement Areas.”**

The ecosystem approach is a consideration for projects supported by the **Heritage Lottery Fund**, placing it at the centre of sustaining and transforming natural and cultural heritage with the involvement of local communities.

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<sup>2</sup> Department for Communities and Local Government (2012) *National Planning Policy Framework*, UK: Crown Copyright

<sup>3</sup> Department for Communities and Local Government (2012) *National Planning Policy Framework*, UK: Crown Copyright

<sup>4</sup> Defra (2011) *Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services*, UK: Crown Copyright





# Using the handbook

There are three parts to this handbook:

- The document you are now reading: a handbook for applying the ecosystem approach
- Fact sheets which supplement the information in the handbook
- Ecosystem Approach Partnership Assessment

This handbook does not have to be followed as a step-by-step process and it is not necessary to do everything in the handbook. It is intended to guide various aspects of a partnership's work.

Partnerships do not have unlimited time, staff or resources. This handbook aims to provide a flexible approach that partnerships can tailor to their situation, time and budget. It is designed to be useful to different types of partnerships and to complement existing work. Use it however best suits the needs of your partnership!

## Handbook

There are 5 sections to the main handbook:

- **Section 1: Define the partnership** – information on reviewing the partnership membership or establishing a new partnership. This section also provides information on defining the partnership area and its links with the wider setting and surrounding places.
- **Section 2: Understand the place** – information to help partnerships identify and value what is special about their place and the benefits ecosystems provide to people.
- **Section 3: Plan for change** – advice for considering various natural and human-made processes that cause places to change.
- **Section 4: Develop integrated delivery plans** – advice for developing an integrated delivery plan, for some partnerships this could be their management plan, action plan or other strategy.
- **Section 5: Integrated delivery and monitoring** – advice on how to monitor both the outcomes of the integrated delivery plan and the processes of the partnership.

## Fact sheets and resources

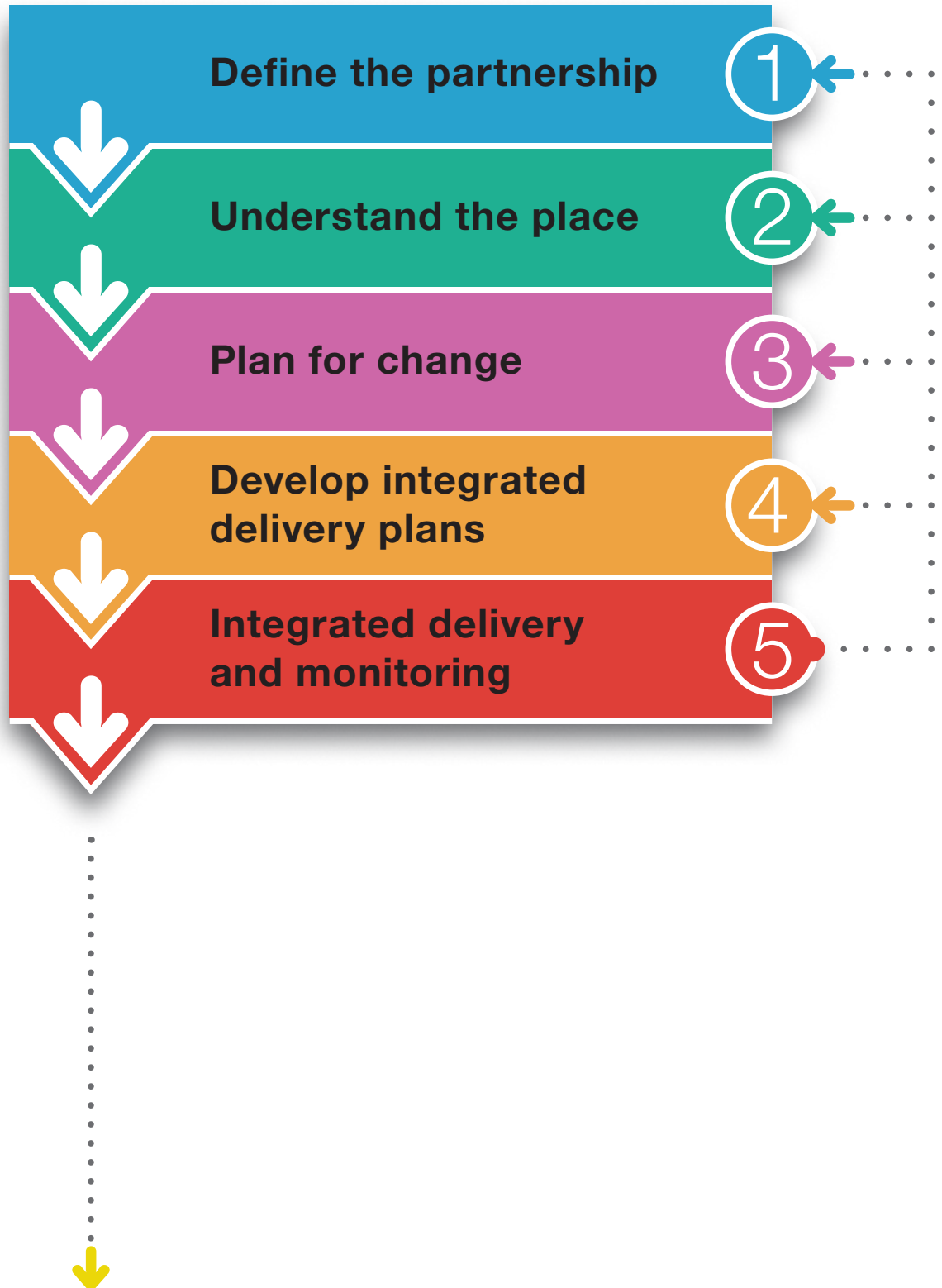
- **Fact sheet 1:** Understanding the ecosystem approach
- **Fact sheet 2:** Convention on Biological Diversity
- **Fact sheet 3:** Engaging stakeholders
- **Fact sheet 4:** Audience development plans
- **Fact sheet 5:** Mapping the context
- **Fact sheet 6:** Understanding drivers for change
- **Fact sheet 7:** Generating publicity
- **Fact sheet 8:** Data sources
- **Fact sheet 9:** Funding advice
- **Fact sheet 10:** Valuation
- **Glossary**

- Some partnerships may work through the handbook in sequence and others may complete different stages simultaneously
- Some partnerships may find it appropriate to vary the order in which the sections of the handbook are completed
- Some partnerships may add processes that are important to their work, such as requirements for reporting to funders

## Ecosystem Approach Partnership Assessment

This is the self-assessment tool for partnerships to assess how they are meeting Biodiversity 2020 Outcome 1C. Partnerships can use the tool to demonstrate how they are contributing towards the commitment in England to conserve 17% of land and water through effective, integrated and joined up approaches to safeguard biodiversity and ecosystem services. The tool enables partnerships to both understand and illustrate this. Each section of the handbook shows how applying that stage of the ecosystem approach relates to the Partnership Assessment.

→ ..... The ecosystem approach at a glance...



# Define the partnership

1



## 1A. Introduction

## 1B. Defining the partnership area

- Using an existing boundary
- The aims and objectives of the partnership
- Think beyond the boundary

## 1C. Initial stakeholder engagement

- Identifying beneficiaries and interest groups
- Identifying current relevant projects
- Keeping local people involved
- Understanding current attitudes and knowledge

## 1D. Partnership working

### Existing partnerships

- Understanding the ecosystem approach
- The extent to which the ecosystem approach is already being applied
- The strengths and weaknesses of the partnership
- Reviewing the partnership membership
- Reviewing the vision

### New partnerships

- Establishing a vision for the partnership
- Agreeing Terms of Reference
- Understanding the ecosystem approach
- Understanding how the ecosystem approach is already being used
- Review partnership membership

## 1E. Putting ideas into action

Understand the place

2

Plan for change

3

Develop integrated delivery plans

4

Integrated delivery and monitoring

5



## Understand the place

### 2A. Introduction

### 2B. Understanding what is special about your place

- Talking about ecosystem services with stakeholders
- Gathering qualitative information
- Understanding the importance of natural resources and processes
- Understanding the context
- Adding detail

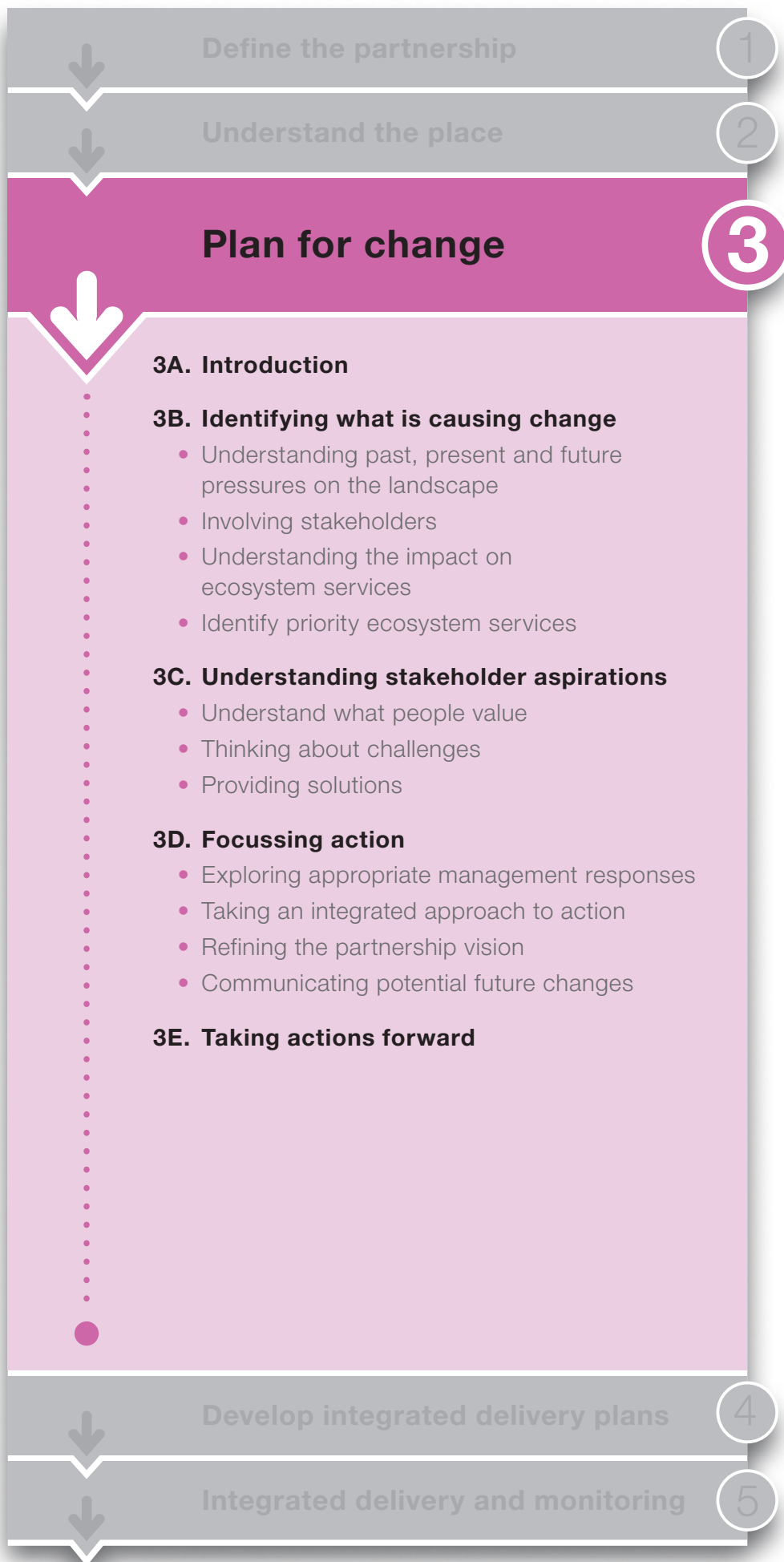
### 2C. Identifying ecosystem services

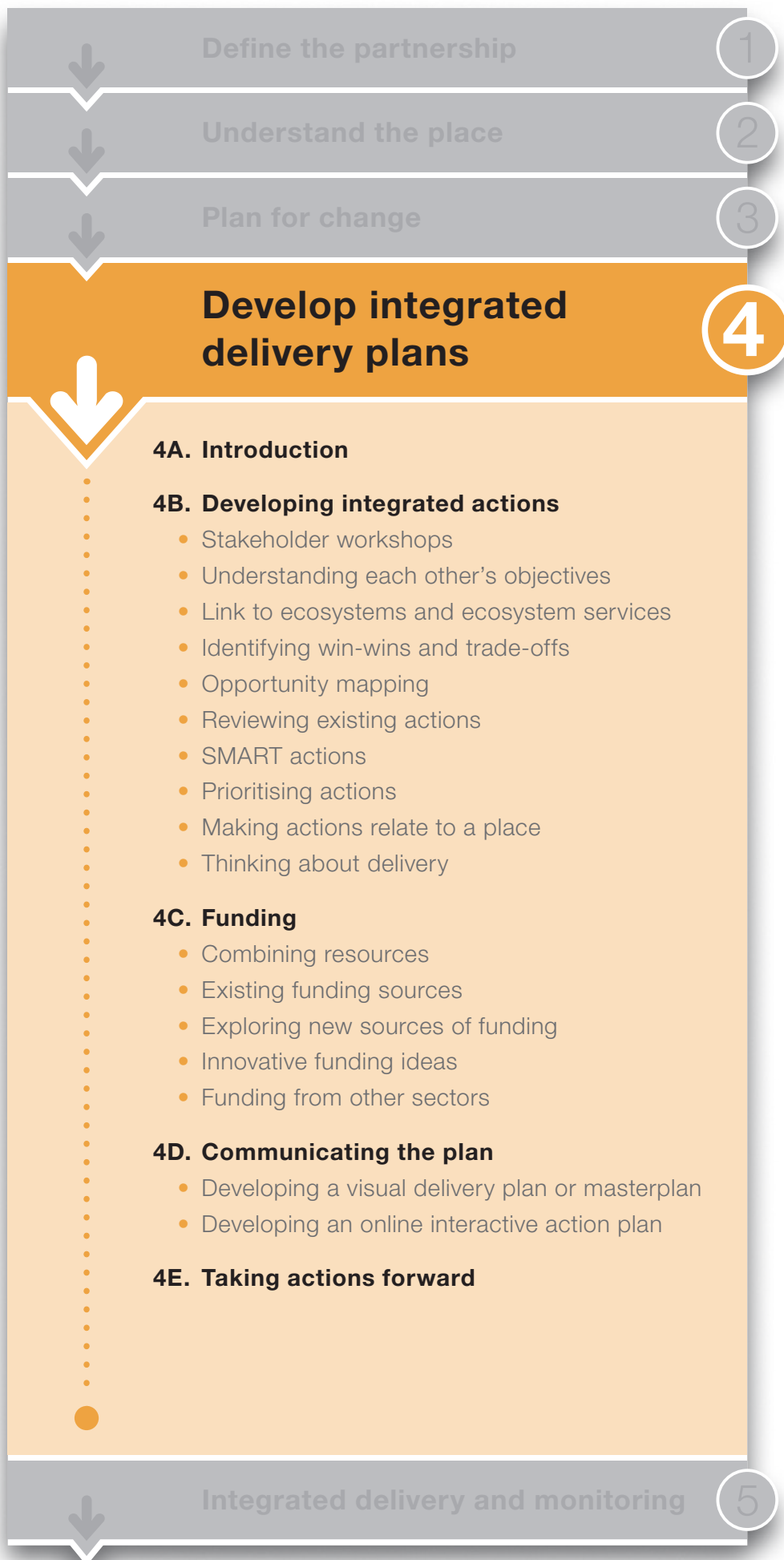
- Working with partner organisations to identify or map ecosystem services
- Involving stakeholders in identifying and valuing ecosystem services
- Communicating visually
- Prioritising key ecosystem services
- Understanding the flows of ecosystem services
- Identifying interactions

### 2D. Sharing information

- Publishing accessible maps
- Collating and sharing existing information
- Using online mapping
- Filling information gaps
- Developing a strategy for monitoring

### 2E. Taking actions forward











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1

## Define the Partnership

An important first stage of the ecosystem approach is to establish or assess your partnership. This includes defining your place and its boundary to identify local stakeholders. These might be stakeholders not usually engaged by the partnership including local people, groups and businesses within the project boundary and outside the boundary which benefit from or influence the ecosystem services provided.









## ..... 1a. Introduction

Much of the following section may be familiar to existing partnerships where a defined area and good links with relevant interest groups already exist. Use this section however best suits your partnership's needs. If a partnership already has an existing agreed boundary, begin by identifying new stakeholders to join the partnership.



## ..... 1b. Defining the partnership area

The ecosystem approach encourages us to look at the 'big picture' when managing the natural environment. It is important to consider the management of whole ecosystems and to recognise that ecosystems don't function in isolation – their processes interact with one another. Defining an appropriate partnership area is key to ensuring the successful management of an ecosystem and ecosystem services.

There are several factors that may determine a partnership boundary, for example:

- ➔ **An existing boundary, such as that of a protected landscape or other recognised area**
- ➔ **The priorities of funders, e.g. areas of distinctive landscape character or regeneration areas**
- ➔ **The aims of the partnership or particular issues that the partnership wants to address, such as preventing flooding, reducing water or air pollution**

Things to think about when defining the partnership area:

- ➔ **Using an existing boundary.** Where an established partnership or a clearly defined boundary already exists, for example for a National Park or Area of Outstanding Natural Beauty, it may not be appropriate to redefine the area.
- ➔ **Defining a new partnership area.** New partnerships can be established for a variety of reasons. Considering what the project aims to achieve is a good starting point for determining the boundary of your place, for instance: a flooding or water quality issue may result in catchment scale planning, or a Landscape Partnership project may define the boundary based on landscape character.
- ➔ **Think beyond the boundary.** Ecosystems and landscapes cross administrative or partnership boundaries and should not be managed in isolation. Partnerships, whether using a new or existing boundary, should consider the connections between ecosystems and recognise that processes or pressures for change may occur outside the partnership area. It is important that beneficiaries outside of the partnership area are recognised and that the partnership cooperates with people and projects beyond the boundary.

# Case study: The Mersey Forest

The Mersey Forest is an example of successful partnership working across a broad landscape area and beyond administrative boundaries to create a network of green spaces.

Rather than being a single woodland, The Mersey Forest is a growing network of trees and woodlands in both urban and rural areas, which complement other habitats. It covers 1,370 km<sup>2</sup> of Merseyside and North Cheshire, and is home to 1.7 million people.

The Mersey Forest is made up of a core partnership of seven local authorities (Cheshire West and Chester, Halton, Knowsley, Liverpool, Sefton, St. Helens, Warrington), Natural England, the Forestry Commission, and the Environment Agency, along with a wider partnership of landowners, businesses and local communities.

The original area of The Mersey Forest was not determined by administrative boundaries, but was selected on account of its industrial history and declining economic base, which had led to poor environmental quality and image. Woodland cover in the area was also low, at only 4%. The idea was that by increasing woodland cover and transforming the environment, social and economic benefits could also be realised. More than 20 years on, 9 million trees have been planted, with planting levels three times the England average. Woodland now covers 8% of the area.

For more information visit: [www.merseyforest.org.uk](http://www.merseyforest.org.uk)



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A refreshed Mersey Forest Plan sets out the basis for cross boundary working, with policies that are relevant to the whole area, as well as specific spatial policies. The spatial policies take into account cross boundary linkages. For example, there is a policy that relates to Bold Forest Park in St. Helens, an area previously dominated by colliery spoil heaps. This is an important recreational resource for St. Helens, but also for the neighbouring authorities of Knowsley, Halton and Warrington, with plans to extend the Forest Park chain into Knowsley and create links from other authorities.

Partnership working also allows for good ideas to be easily transferred to other areas. For example, 'wood allotments' is a new scheme which has been trialled in Cheshire West and Chester. By paying a small fee, members of the community can harvest logs from carefully marked trees within a young woodland. This provides them with a locally sourced renewable fuel, but also ensures that maturing woodlands are thinned. This scheme is now being rolled out to other areas of The Mersey Forest.



## 1c. Involving stakeholders in the partnership

The ecosystem approach puts people, and how they value or understand ecosystems, at the centre of decision making and planning for the natural environment. Stakeholder analysis and engagement is important throughout the process. Stakeholders include communities of interest (people with a professional or other interest in a place), communities of place (people who live, work or enjoy spending time in a place) and those who benefit from or influence ecosystems. Stakeholders may be involved as formal partners or engaged as part of the wider community.

### Established Partnerships

This stage involves assessing membership and establishing if new partners should be involved. It can also help to re-establish local interest and generate support.

### New Partnerships

Considering stakeholder engagement at the start enables new partnerships to identify partners or those to involve later as part of wider community engagement.

It is important to understand that some partners may not be familiar with the ecosystem approach. [Fact sheet 3: Engaging stakeholders](#) provides further information on techniques for involving people regardless of their knowledge of ecosystems.

Things to think about when establishing or reviewing a partnership:



#### **Identifying beneficiaries and interest groups.**

A partnership may include representatives from many sectors, some of whom may not normally be associated with the natural environment. It's important to recognise the connections, or flows, between ecosystems and the people that benefit from or impact on them (both positively and negatively). A benefit provided by an ecosystem within your area will be valued by people beyond the boundary – for example, drinking water in the uplands benefiting people in lowland towns. It is equally as likely that people outside your area will impact on the potential for your ecosystems to provide benefits – for example, the effects of external pollution.

Mapping such flows of ecosystem services is considered in more detail in section 2. At this stage the partnership should identify who these groups are and whether they should be involved as a formal partner or engaged as part of wider community engagement. The table overleaf suggests some of the stakeholders who could be relevant to join your partnership, or be engaged as part of the wider community.

- **Identifying current relevant projects.** It's useful to record the location and area covered by any ongoing projects being carried out by members of the partnership and other stakeholders (e.g. landowners). This provides a basis for understanding what's happening locally and identifying links between activities.
- **Understanding current attitudes and knowledge.** An initial questionnaire or interview, to find out what people know about the ecosystem approach and how they feel about the natural environment, may be useful to help you monitor how their knowledge and appreciation changes throughout the process/project.
- **Keeping local people involved.** Developing an audience development plan will help to determine how you will continue to involve partners and the wider community. The audience development plan will include a list of all the audiences to be involved and the most effective ways of engaging with them.

In many cases partners will already be carrying out engagement, such as volunteer programmes, supporting local community groups, involving community members on steering groups, or community events. It is important to build on such activities to allow stakeholders to participate in planning and decision-making. This will involve inviting groups to join the partnership, or carrying out wider engagement where people can contribute to action plans. [Fact sheet 4: Audience development plans](#) provides more information.



## Potential stakeholders to join your partnership

Environmental	Social	Economic
<ul style="list-style-type: none"> <li>• Environment Agency</li> <li>• Forestry Commission</li> <li>• English Heritage</li> <li>• County Wildlife Trusts</li> <li>• Royal Society for the Protection of Birds</li> <li>• National Trust</li> <li>• Area of Outstanding Natural Beauty (AONB) Partnerships</li> <li>• National Park Authorities</li> <li>• Campaign to Protect Rural England</li> <li>• Local Nature Partnerships</li> <li>• Woodland Trust</li> <li>• Archaeological officers in Local Authorities</li> </ul>	<ul style="list-style-type: none"> <li>• Local Authorities</li> <li>• Recreation user groups</li> <li>• Local Access Forum</li> <li>• Town and Parish Councils</li> <li>• Housing Associations/ Residents groups</li> <li>• The Conservation Volunteers/Community organisations</li> <li>• Youth Groups</li> <li>• Schools</li> <li>• Health and Wellbeing Boards and Clinical Commissioning groups</li> <li>• Local specialist interest groups e.g. local history group</li> </ul>	<ul style="list-style-type: none"> <li>• Local Enterprise Partnerships</li> <li>• Water Utility Companies</li> <li>• National Farmers' Union</li> <li>• Country Land and Business Association</li> <li>• Internal Drainage Boards</li> <li>• Landowner/Farming groups</li> <li>• Tourism businesses</li> <li>• Visit England</li> <li>• Destination Management Organisations</li> <li>• Other key private sector businesses e.g. local mineral companies, supermarkets, bottled water companies</li> </ul>



## Case study:

# Understanding and communicating the ecosystem approach by Westcountry Rivers Trust

The Westcountry Rivers Trust has developed a successful approach for engaging stakeholders and explaining the value of an ecosystem approach.

The Westcountry Rivers Trust has produced a short film titled *'Creating a Sustainable Future: Ecosystem Services and Spatial Planning'* to explain the importance of working together to deliver landscape-scale spatial planning. The Westcountry Rivers Trust has recognised that films are a great way to communicate with both partners and the wider public.

The animated film explains the ecosystem approach and ecosystem services in an engaging and straightforward style and provides a good starting point for stakeholder engagement. It was produced for the Collabor8 project, which received European Funding through INTERREG IV B.



The film is available at: [www.youtube.com/watch?v=RHfK7Oyk2bc](http://www.youtube.com/watch?v=RHfK7Oyk2bc)



## 1d. Partnership working

Partnerships can be formal or informal and should include both people who benefit from and people who influence an ecosystem. Ensure that partners understand what will be required of them and are comfortable committing their resources (including time) to the partnership. Identifying how and why partners' time and efforts will be used can ensure their commitment is valued and not exploited.

It may be beneficial to establish a working group to help coordinate the activities of the partnership and monitor progress. This is particularly appropriate where an established partnership is developing new programmes of work, or where the ecosystem approach is being integrated into specific projects or strategies.

### Established Partnerships

Things to consider when reviewing an established partnership:

- **Understanding the ecosystem approach.** Many partners will have knowledge of the ecosystem approach, but it's important that all partners feel comfortable with the key concepts. A questionnaire asking what partners currently know about the ecosystem approach and how they feel about its implementation will enable you to monitor how their knowledge and appreciation changes throughout the process.
- **The extent to which the ecosystem approach is already being applied.** Once the ecosystem approach is understood the partnership can consider to what extent it is currently being applied, identify gaps and consider what more could be done. The **Ecosystem Approach Partnership Assessment** can help promote discussion around how far each stage is currently being implemented. The partnership should discuss what is being done to apply a particular stage, or why a stage is not currently in progress. This will help to inform action planning later in the process.
- **The strengths and weaknesses of the partnership.** It's important to identify the strengths and weaknesses of the partnership in applying the ecosystem approach to determine what information or support is required. Information and support might include background research by partnership members, or the development of training events and materials.
- **Reviewing the partnership and its membership.** It's useful to consider the partnership's management and review the membership of the partnership or working group, to ensure all relevant stakeholders are included – for example: people who benefit from the ecosystem, those who influence it and those with particular expertise for managing it.
- **Reviewing the vision.** The partnership may decide to refine its aims or vision to reflect the ecosystem approach. This can be a good time to highlight the joined-up nature of the approach and its emphasis on people working together towards a common goal.

## New Partnerships

Things to consider when reviewing a new partnership:

### → **Establishing a vision for the partnership.**

The partnership may be a group of like-minded people who come together around a shared purpose such as to develop a funding bid. It may be created by one organisation wishing to involve others in achieving its aims. Whatever the reason for setting up a partnership, it is important to develop a clear vision to work towards. You may decide to only write a draft vision at this point and refine it after working through other stages of the handbook – after identifying the issues in section 3 or monitoring the progress of delivery in section 5.

### → **Agreeing terms of reference.**

These are the ways in which the partnership will operate. They should include:

- The vision and objectives of the partnership
- The membership and their roles and responsibilities
- Details of how future decisions will be made
- Financial and resource planning

### → **Understanding the ecosystem approach.**

Many partners will have knowledge of the ecosystem approach, but it's important that all partners feel comfortable with the key concepts. A questionnaire asking what partners currently know about the ecosystem approach and how they feel about its implementation will enable you to monitor how their knowledge and appreciation changes throughout the process.

### → **Understanding how the ecosystem approach is already being used.**

Once the ecosystem approach is understood the partnership can consider to what extent it is currently being applied, identify gaps and consider what more could be done.

The **Ecosystem Approach Partnership Assessment** can help promote discussion around how far each stage is currently being implemented. The partnership should discuss what is being done to apply a particular stage, or why a stage is not currently in progress. This will help to inform action planning later in the process.

### → **Review partnership membership.**

It is suggested that the partnership or the working group, be reviewed and updated as the project evolves to ensure any new stakeholders are involved as they become recognised.

# Case study:

## Tweed Forum – cross-border partnership

The Tweed Forum is an example of successful long term partnership working at a landscape scale across complex administrative boundaries and systems.

The Tweed catchment straddles the national border between the Scottish Borders and England's Northumberland. The Tweed Forum initially formed in 1999 as an informal organisation in recognition of the cross border nature of the catchment and the need for more coordinated management. It is now considered an exemplar of long term partnership working to manage land and water in a holistic way.

The forum is now a charitable trust, which ensures the two differing legal and administrative systems of Scotland and England achieve an integrated approach to managing the Tweed catchment. The partnership consists of 28 members from statutory, private and voluntary sector organisations. It works with organisations which own or manage land and range from national to local scale partners. The Executive Committee acts as the steering group.



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This consists of the Board of Directors and co-opted members from both sides of the border. There are currently 13 organisations represented on the steering group. Working groups have also been established to oversee priority actions in the Catchment Management Plan. The working groups, which include specialists from the membership, meet regularly to address issues and ensure the successful delivery of actions. In addition to the Executive Committee and working groups, the Tweed Forum employs paid staff to carry out essential day-to-day management of the forum.





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The Forum focuses on protecting, enhancing and restoring the natural, cultural and built environment associated with the Tweed catchment. Management is focused on a range of ecosystem services, including enhancing supplies of cleaner freshwater, enhancing habitats and species, landscape management, increasing environmental resilience to extreme weather events and climate change, protecting fish stocks and developing world class fisheries, capturing and storing greenhouse gases and increasing tourism and recreational opportunities. Working across different administration scales ensures that the right actions are carried out at the right scale to be effective in delivering improvements.

More information is available at: [www.tweedforum.org](http://www.tweedforum.org)



## Remember...

It's important to keep a record of any decisions and actions that contribute to implementing the ecosystem approach. This might include:

- Recording partnership commitments, roles and responsibilities
- Establishing a timeline for actions to be completed
- Producing an audience development plan to help manage stakeholder engagement



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## 2

# Understand the place

This section of the handbook will help you identify what people value about your place and the benefits that its ecosystems provide. Use this section to develop a starting point for planning actions and monitoring progress.







**This section of the handbook will help answer the following questions in the Ecosystem Approach Partnership Assessment:**

- **Question A:** Is your partnership actively considering and planning for a wide range of environmental assets within your partnership area – beyond biodiversity, landscape and geodiversity?
- **Question B:** Have you collated data to understand the most relevant ecosystem services in your partnership/project area?
- **Question C:** Are you involving a wide range of stakeholders and the local community in planning and delivering action for ecosystem services in your area, including those who benefit from them?
- **Question H:** Is your partnership taking action to understand what ecosystem services people value from your project area and using valuation to capture them?

**This section addresses these questions by helping your partnership to:**

- Collect any information available to help build an understanding of your place
- Identify the natural capital and ecosystem services provided by your place
- Map the flows of ecosystem services and identify the people who benefit from them
- Understand the value that people place on the ecosystems



## 2a. Introduction

**Firstly, it's important to note that you don't need to start by acquiring lots of information!** An understanding of what people think makes your place special is a good starting point to identifying the ecosystem services it provides. Once a discussion has begun with stakeholders around why your place is special, information can be acquired to help understand your place in more detail.

Partners may have relevant documents that can be used to understand your place in more detail, for example business plans, River Basin Management Plans, Green Infrastructure Strategies, Local Plans etc. In some cases it may not be possible to obtain all the information you feel you need, and some information may not exist. Your partnership may have to accept that in such cases you will have to make best use of what is available or carry out new research if necessary.



## 2b. Valuing the special qualities of your place

Each place is unique, with different characteristics that make it special to people that live, work, visit or otherwise depend on (or benefit from) the landscape. Understanding these special characteristics is the starting point for valuing ecosystems and involving people in decision making and monitoring. It is important to remember that people only have a limited amount of time: make the most of the time they have available and be clear about what is expected of them.

Things to think about when identifying what's special about your place:



**Talking about ecosystem services with the wider community.** The ecosystem approach encourages partnerships to involve people in understanding the values placed on ecosystem benefits. This makes the ecosystem approach unique and wider community involvement, which includes individuals, groups, businesses that benefit from or influence ecosystems, is an important part of the process. Effective involvement can take time and may require a series of different workshops or events that target different members of the

community. Involving a wide range of stakeholders will uncover a range of perspectives which may guide new approaches to decision making and planning.

- **Who to involve.** Who to involve and how your partnership will involve them should be outlined in your audience development plan. *'Talking About Our Place'*, a toolkit to engage local communities in the ecosystem approach, provides lots of useful information and techniques for involving people [www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/communities/talking-about-our-place](http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/communities/talking-about-our-place)
  
- **Starting the conversation.** The wider community can provide a wealth of information about the types and importance of ecosystem services found locally. They can contribute creative ideas to future plans and involving people in the process helps to break down any 'us and them' mentality which may exist. Engaging people, especially those with no previous knowledge, can sometimes appear difficult due to some of the concepts and terminology involved. However, there are many different ways of drawing upon the knowledge of wider communities without getting bogged down in technical jargon. The important thing is to begin a conversation about what is special about the place and what people value. [Fact sheet 3: Engaging stakeholders](#) provides links to useful resources.

Consider facilitating a discussion around:

- **What benefits do people feel they get from their place?**
- **What do people value about their place and why?**
- **What issues or challenges do people face in their place?**
- **How can these issues or challenges be addressed?**

- **Gathering qualitative information.** Much of the information gathered from the stakeholder engagement is qualitative information, such as expressions of how the place is perceived and experienced. This might include written information and photographs, interviews with a sample of stakeholders and other accounts of how people experience their landscape and what's important to them.
- **Understanding the importance of natural resources and processes.** It is useful to list the principal natural resources and processes that underpin ecosystem services. These features are often referred to as natural capital and include land use, geodiversity, biodiversity, landscape character, designated or protected landscapes, green space and historic assets. Understanding natural capital helps to establish a broad overview of what is special about your place and provides a starting point for monitoring change. Partners may already hold much of the information needed.
- **Understanding the context.** Understanding the wider context of your place and its links with surrounding areas is important for identifying beneficiaries and influencers of ecosystems, and later, for identifying ecosystem processes and services. This involves gathering information on natural capital beyond the boundary of your place. For example, extending down a river system to the nearest city or town, or along the coastline. It involves understanding how the ecosystem processes function: how water, nutrients, carbon and energy flow through a place; where they are added/taken up; where they are stored; and where they are lost. It may be useful to work at a landscape scale in order to fully understand the context.
- **Adding detail.** It will not always be possible to obtain further information you require and in some cases the information you can collect may be sufficient for the purposes of the partnership. Some partnerships may wish to add detail by collating existing information from partners and other organisations, or by gathering new information as part of a participatory approach with local people. **Fact sheet 5: Mapping the context** provides more information about gathering and mapping information, including information about using proxy data.

## Case study:

# Lewes and Ouse Valley eco-nomics – *Naturegain Going Local: community visualisation of ecosystem services*<sup>5</sup>

Effective and engaging community consultation has stimulated interest in and understanding of the value of local ecosystem services in Lewes.

The Lewes & Ouse Valley eco-nomics Group (L&OVe) is part of Transition Town Lewes. Lewes is one of the largest settlements in the South Downs National Park with an active community in the Transition Town movement. L&OVe aims to raise awareness of the importance of a healthy environment to the wellbeing of the local community and economy. As part of this work it has actively sought to engage local people in identifying, and taking account of the value of, ecosystem services.



© Chris Richards

One of the biggest challenges for the group was how to stimulate interest in the issues, which are often unfamiliar to people. To meet this challenge, a number of tools have been developed including a workshop process that involves participants in a process of experiential learning. The workshops allow people to understand their ecosystems by analysing their own experiences. People are initially asked to find where they live on a large sketch map and 'put themselves on the map'. A facilitator introduces the different ecosystems in the area – woodland, floodplain, chalk downland, etc. using the map as a focus. Participants then split into groups, each representing one of the ecosystems shown on the map. Each group is asked to identify the ecosystem services that are provided by their ecosystem. The next stage is for groups to select a local enterprise to represent, such as a prominent business, organisation or public sector service. They are then asked to identify the ecosystem services that are utilised by the enterprise. The connections, or flows, between the service and the enterprise are shown on the map using string and 'blu-tac'.

<sup>5</sup> Tingle, C.C.D., Bartlett, A. & Williams, D. 2012. *Going Local: Community visualisation of ecosystem services*. Poster presentation. Proceedings SAC/SEPA conference "Valuing Ecosystems: Policy, Economic and Management Interactions", Edinburgh, Scotland. April 2012. [www.sruc.ac.uk/downloads/file/1445/277-283\\_tingle](http://www.sruc.ac.uk/downloads/file/1445/277-283_tingle)

<sup>6</sup> A word coined by Dr. John Parry – see <http://southdownsforum.ning.com/forum/topics/a-new-word-for-ecosystem-services>

<sup>7</sup> See [www.cc2150.eu](http://www.cc2150.eu) • [http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/lit\\_9196\\_fb71a1.pdf](http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/lit_9196_fb71a1.pdf) • [http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/lit\\_9197\\_1d8118.pdf](http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/lit_9197_1d8118.pdf)







## 2c. Identifying and valuing ecosystem services

Much of the information gathered in 2b can be used to identify and record ecosystem services and inform decision making. You may need to obtain further data to identify ecosystem services: generating a series of maps displaying environmental information and key features can be useful to identify ecosystem services. Mapping ecosystem services illustrates the services currently provided and the potential of the environment to provide further services. Where resources are limited the information does not need to be mapped.

If it is not possible to gather accurate information about all of the ecosystem services provided by your area, focus on those that are most important to the people who benefit from them.

Things to think about when identifying ecosystem services:

- **Working with partner organisations to identify ecosystem services.** Partner organisations may have already identified ecosystem services in your area or information that would help to identify or prioritise ecosystem services. Draw upon this information before collecting new information.
- **Involving stakeholders in valuing ecosystem services.** The community engagement in 2b generated information about what people value in their area. This can help determine what ecosystem services are valued or which services are prioritised. Community engagement is particularly useful for identifying cultural services e.g. sense of place which may otherwise be difficult to define.

Engaging with beneficiaries or those who influence ecosystems, such as landowners, farmers, or environmental organisations with a detailed knowledge about the natural environment, can develop this information.

**Fact sheet 10: Valuation** provides information about the different ways ecosystem services can be valued.

→ **Communicating visually.** Maps, diagrams, photographs and other images are a very effective way of communicating complex ideas to diverse groups of people. Keep graphics clear and simple. Avoid trying to say everything at once! Bite-size ‘chunks’ of information are always easier to digest.

**Fact sheet 5: Mapping the context** provides more information on how mapping can help communicate ecosystems visually.

→ **Prioritising key ecosystem services.** Once you have identified the ecosystem services in your area, you can involve stakeholders in prioritising which services are most valued in terms of which may benefit people most in the future – taking into account drivers for change, such as climate change. Understanding how people value ecosystem services helps identify how people will value changes to them: whether they prefer the status quo or a different state. This is important information for developing options for future management.

→ **Understanding the flows of ecosystem services.** Once key ecosystem services have been identified, the partnership should consider the ecosystem processes and functions that support those services, and how things flow through the ecosystem e.g. water or nutrients. The location of beneficiaries and influencers should be identified. Beneficiaries include communities within or close to your area, and more distant communities – e.g. lowland communities benefiting from water quality regulation in the uplands. Influencers include landowners, farmers, public sector departments, businesses, NGOs, and many can also be considered beneficiaries. Consider the flows of ecosystem services at different scales including local, regional, national and international.

→ **Identifying interactions.** Many ecosystem processes and services interact. For example, soil erosion can contribute to poor water quality, whilst loss of biodiversity can contribute to soil erosion and reduced carbon storage. Partnerships should consider how ecosystem services in their area interact: how might a change to one ecosystem service affect others and how will altering this relationship alter how people value the ecosystem.



# Case study:

## Durham Wildlife Trust – EcoServ-GIS

EcoServ helps identify and prioritise ecosystem services or the potential for ecosystem services. It is useful for mapping flows of ecosystem services from the environment to beneficiaries and for identifying interactions between demand and capacity for services.

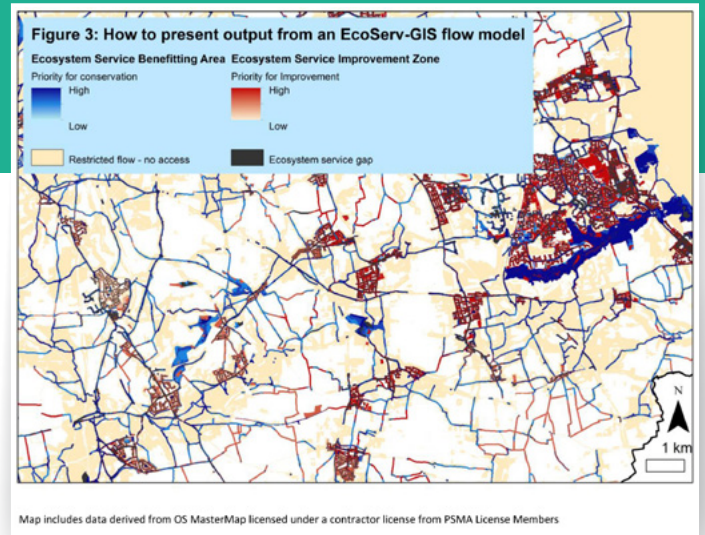
EcoServ-GIS is a mapping tool developed by Durham Wildlife Trust to help understand where ecosystem services are most needed and which sites and habitats have the highest potential to deliver them.

EcoServ-GIS maps the locations where demand and capacity for services coincide spatially by explicitly modelling the flows of ecosystem services from the environment to people. This enables an understanding of how sites should be managed to optimise their ecosystem service delivery: sites with a high level of service delivery can be maintained and restoration carried out on sites which need to improve. Services can be considered individually or as part of a multiple service assessment.

Datasets including habitat types and structure, grey infrastructure distribution and socio-economic factors such as health deprivation are used to create a basemap.

**More information is available at:**

[www.durhamwt.co.uk/what-we-do/current-projects/ecoserv-project](http://www.durhamwt.co.uk/what-we-do/current-projects/ecoserv-project)



This basemap is used by subsequent tools that focus on mapping ecosystem service delivery in terms of need and capacity.

The tool uses Geographical Information Systems (GIS) to generate fine scale maps (10m–50m) which illustrate the need and capacity for ecosystem services. It is designed to work at the county scale because this is a scale at which Wildlife Trusts can work in partnership with local authorities to implement the ecosystem approach. The tool is aimed to provide information regarding ecosystem services in a range of areas, including: assisting in decision making for wildlife reserves; informing policy; providing information to respond to local planning applications; and developing large scale projects such as the Living Landscapes project which connects wild spaces.

EcoServ-GIS has been piloted in the Durham Biodiversity Action Plan area and been used to map ecosystem service supply and demand for the Derwent Valley IBDA at a neighbourhood scale.



## 2d. Sharing information

At this stage it is useful to draw together existing information about the special qualities of the place and its ecosystem services and share this with stakeholders. The information can provide a starting point for understanding the existing provision of ecosystem services and their value. It can also highlight future priorities.

Things to think about when sharing information:

- **Publishing accessible maps.** Consider your audiences when producing maps. Ensure that the rationale and assumptions for map production are clearly explained. Maps must have a clear topographic base as many stakeholders will not recognise the geography of project or administrative boundaries.
- **Collating and sharing existing information.** When sharing information, include links to the source and details of how partners can access it. This will encourage partners to use, test and improve the information. Always check licence agreements and copyright information to ensure the legality of sharing information or data.
- **Using online mapping.** Online interactive maps are an excellent way of making information available to a partnership, both through a web browser or partners' own Geographical Information Systems (for example, via the Open GIS Consortium Web Map Server standard).
- **Filling information gaps.** Use your report to highlight gaps in the available information, together with ideas for how to fill gaps through the ongoing work of the partnership.
- **Developing a strategy for monitoring.** The information used for your starting point forms an important part of any monitoring – it provides a 'baseline' against which progress can be measured. It's helpful to develop a monitoring strategy at this early stage so that partners are clear about what information needs to be recorded on an ongoing basis.

## Case study: The South Pennines upland ecosystem service pilot

This pilot study illustrates how sharing existing information can help partners to better understand and value the ecosystems in an area.

In 2009 the South Pennines became one of three Natural England initiated pilot projects to demonstrate how to apply the ecosystem approach. An important step in the project was to gather existing information to help the partnership identify and describe the area's ecosystem services. The information was then shared with the wider partnership.

The baseline was established by collating a variety of datasets including: nationally and locally available map data; data not available in map form, such as tourism data; National Character Area profile; and indirect and proxy data (where direct data for an ecosystem service was not available).



© Steve Morgan/Pennine Prospects

As a result the project was able to share the following baseline information:

- **Introductory text:** a description of the special qualities and character of the project area, including the key characteristics that make the area distinctive.
- **A series of maps:** to illustrate individual ecosystem service provision with brief explanatory text
- **Maps of beneficiaries:** to show the location of beneficiaries where possible, including a table analysing the location of beneficiaries for each ecosystem service.
- **Appendices:** additional relevant data such as lists of priority habitats and species, Scheduled Monuments at risk, Water Framework Directive watercourses with failing elements.





© Bev Addy

Sharing this information was beneficial to the project as it helped to demonstrate the [potential] value of services that would otherwise have been undervalued, such as flood alleviation, climate change mitigation and cultural services, alongside services that have long been considered important, such as water quality and biodiversity.

Sharing the information created a greater understanding across all sectors and has enabled the 'story' of upland resources to be shared with local towns and cities.

Sharing information can sometimes present difficulties which should be considered carefully at the outset. In particular, partners should take into account any commercially sensitive information from landowners, private companies and utility companies.

More information is available at: [www.watershedlandscape.co.uk](http://www.watershedlandscape.co.uk) or [www.pennineprospects.co.uk](http://www.pennineprospects.co.uk)



## Remember...

Keep a record of key decisions and actions such as:

- Responsibility for managing information
- Proposed activities to address information gaps
- Priority ecosystem services and their beneficiaries



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# 3

## Plan for change

This section of the handbook provides advice on understanding how stakeholders feel about change and how to plan for change, whether it is viewed as positive or negative.









## ..... 3a. Introduction

Places are constantly changing as a result of natural and human-made drivers for change such as local aspirations creating positive change for local people, climate change, pollution, population changes or changes to economic policy. Change occurs regardless of intervention but intervention can guide the direction of change.

It is important to involve stakeholders in determining aspirations for your area, whilst considering the effect of drivers for change. This will help later in section 4 of the handbook when developing a consensus view on how to manage ecosystems for the future.



## ..... 3b. Understanding causes of change

Some partnerships will be familiar with the drivers for change in their area and will use this handbook to refresh their knowledge or review existing work in light of the emphasis on the ecosystem approach. Other partnerships may use this handbook to develop an understanding of landscape change – its drivers and consequences.

‘Drivers for change’ are the various natural and human-made processes that cause places and ecosystems to change; they are often complex and uncertain. Drivers put pressure on ecosystems and ecosystem services, but also present opportunities and create positive changes. For example, climate change may negatively impact on biodiversity, but could provide opportunities for recreation and tourism. [Fact sheet 6: Understanding drivers for change](#) provides more information.



The impact of drivers for change on ecosystems can be difficult to predict, especially as changes are often caused by interactions between different processes. Ecosystems are either vulnerable or resilient to change:

- **Vulnerable ecosystems** are those that are likely to be damaged by change.
- **Resilient ecosystems** are more able to recover from change and return back to their 'natural' state (i.e. the state they were in before the change occurred). Resilient ecosystems are usually healthier and in more favourable condition. The aim is to ensure ecosystems are in a resilient state.

Things to think about when identifying drivers for change:

- **Understanding past, present and future pressures on the landscape.** It is easier to understand past trends than to predict future changes. A good way to start is by collating and reviewing existing information including environmental, social and economic information to map what ecosystem services were like in the past (if data and resources make this possible) and what they are like today. This provides a basis for understanding future change and options for ecosystem management. **Fact sheet 6: Understanding drivers for change** provides examples of drivers that may affect your place. It is useful to think about their impact on different habitat types or landscape character types – for example, meadows may be at risk from conversion to agricultural land, whilst freshwater habitats may suffer from increasing pollution.
- **Involving stakeholders.** Work with stakeholders to identify past, present and potential future pressures on ecosystems. Understanding how different stakeholders perceive future pressures on ecosystems is important for agreeing future management options.

→ **Developing scenarios.** You may involve stakeholders in scenario building (imagining the future outcomes of different management decisions) to better understand how ecosystems are affected by drivers for change and how stakeholders would feel about that change. Scenario building isn't about predicting the future; it's about considering how stakeholders value change and how your partnership might respond to different possibilities.

Impacts can be positive or negative so encourage people to consider both the risks and opportunities presented by each driver for change.

→ **Identify priority ecosystem services.** Ecosystem services in terms of future change can be prioritised in several ways:

- Stakeholders may be most concerned about change to the most valuable ecosystem services identified in section 2 and these may be considered a priority for action.
- The drivers for change and ecosystem services that your partnership has most influence over may be a priority as resources can be targeted most effectively.
- Your partnership may consider the ecosystem services identified as most vulnerable to change during the scenario building exercise as a priority; these are likely to suffer negative impacts most quickly if/when change occurs.

Some scenarios may be out of your partnership's control, so it's important to strike a balance between prioritising the most vulnerable or most valuable ecosystem services, and focussing on those that your partnership can influence. Identifying priority ecosystem services is essential to developing options and a consensus on how to manage them into the future.

## Case study:

# The Sustainable Catchment Management Programme (SCaMP)

The SCaMP project, in North West England, is an example of using ecosystem understanding to address potential negative changes at the landscape scale.

SCaMP, developed by United Utilities in partnership with RSPB, aims to apply an integrated approach to catchment management across all United Utilities land delivering multiple benefits. The success of the programme is reliant on a partnership approach. United Utilities work closely with partners to implement the programme on the ground, including national government departments and agencies, National Parks and AONBs, national charities and local land managers and farmers.

The primary aim of SCaMP was to address the substantial increase in the levels of colour in the water sources prior to treatment which was increasing the cost of treatment. This was caused by changing management practices in many upland catchments. Understanding that land management practices were causing a change to water quality has allowed SCaMP to look at ways of altering land management to stabilise or reverse the trend. This will reduce the need for water treatment, increase water quality and reduce the cost of treatment.

The overall aim of the project is to develop good land management practices to deliver improvements through a partnership approach. Such practices include re-wetting the peat and re-vegetating bare peat. The aims of the project will not only improve water quality, but will also have the benefit of addressing other drivers for change such as climate change, by allowing the moorland to develop its resilience to climate change and increasing the rate at which the peat can absorb carbon from the atmosphere.



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The delivery of the SCaMP Programme is helping to deliver multiple benefits including:

- protecting and improving water quality
- reducing or delaying the need for future capital investment for additional water treatment
- reducing the rate of increase in raw water colour which will reduce future revenue costs
- delivering government targets for SSSIs
- ensuring a sustainable future for the company's agricultural tenants

- permitting our moorland habitat to become more resilient to long term climate change
- allowing healthy upland peat moors to absorb significant volumes of carbon from the atmosphere

SCaMP is an example of a project which developed to address a specific driver of change but which has evolved into a project which is delivering multiple benefits by addressing potential negative changes.

**More information is available at:**

<http://corporate.unitedutilities.com/scamp-index>



## 3c. Understanding stakeholder aspirations

One of the main aspects of the ecosystem approach is that stakeholders (including partners, the wider community, beneficiaries and influencers) are actively involved in decision-making and planning for the future. [Fact sheet 3: Engaging stakeholders provides](#) links to various creative techniques for engaging people. These should be described in your audience development plan (see [Fact sheet 4: Audience development plans](#)).

Things to think about when understanding stakeholder aspirations:

- **Understand what people value.** Section 2 of this handbook describes how to find out what people value about their place. This is the first step in getting people to consider aspirations for the future.
- **Thinking about challenges.** Encourage stakeholders to think about the challenges facing their place. You could use open questions: 'What are the issues faced in this area?' Or consider challenges in terms of the drivers for change identified in 3B or described in [Fact sheet 6: Understanding drivers for change](#).
- **Providing solutions.** It is important to raise the aspirations of local people. Encourage creative thinking and don't focus on problems or be too constrained by resources. A lack of resources or the scope of the partnership may limit what can be done 'on the ground' but it is important to be positive about your place and 'think big' about the future, whilst trying not to raise expectations too high!

## Case study: Mayesbrook Park: Britain's first climate change park

This project illustrates how community aspirations can combine with environmental restoration to create a valued and functioning ecosystem resource.

The Mayesbrook Park project was steered by an innovative public, private and voluntary sector partnership initiated by the Thames Rivers Restoration Trust (TRRT), the London Borough of Barking Dagenham (LBBDD) and Environment Agency. The partnership's aims are to restore the Mayes Brook and its associated floodplain in terms of the benefits this will bring to ecosystem services in the area; and to create an ecological and community focal point within a broader environmental regeneration project, which is designed to produce the UK's first climate change adaptation public park.

Stakeholder aspirations were established through extensive community engagement. This involved 2000 questionnaires to local residents and a series of consultation events to find out people's views and suggestions for the park. Three local primary schools were involved in designing posters and text for the consultation events and there were over 200 activities for children in the park. Design ideas by local children contributed to the natural play area and route markers which help link local schools and neighbourhoods to the park.

**More information is available at:**

[ecosystemsknowledge.net/resources/examples/mayesbrook](https://ecosystemsknowledge.net/resources/examples/mayesbrook)



Kind permission of Thames Rivers Restoration Trust

The aspirations of the local community fed into a masterplan which outlined a phased programme of works for the whole park restoration. Each project or action was linked to the ecosystem services provided and their associated benefits to people. The actions and projected outcomes were evaluated in terms of their impact on ecosystem services. This ensured that actions within the wider programme of works were integrated and produced multiple benefits for people. For example, 5,000 trees were planted to mitigate against climate change, to provide shade in hotter drier summers and to filter airborne pollution; releasing the Mayes Brook from its metal fence and concrete channel created a meandering river channel and floodplain to help control flooding by allowing the river to rise in a controlled way and reducing flood risk to homes, whilst creating an attractive river landscape and haven for wildlife; and the restoration of two lakes ensured clean water to support angling and boating activities.





## 3d. Focussing action

Once the impact of drivers for change and local aspirations have been identified, the next step is to develop and agree appropriate management responses to enhance ecosystem resilience, reduce risks and maximise opportunities. This process can help your partnership identify gaps in current delivery or refocus its vision to safeguard the ecosystem services deemed most important.

Things to think about when focussing action:

- **Exploring appropriate management responses.**  
How can your partnership adapt management to enhance ecosystem resilience and address the potential impacts of drivers for change on ecosystem services? It is important to agree how to manage ecosystem services into the future. The focus of the discussion should be around the scenario building exercise focussing on priority ecosystem services identified in 3B along with the aspirations of the partnership and wider community.
- **Taking an integrated approach to action.**  
The ecosystem approach requires drivers for change to be addressed in an integrated way. This means that action in response to one driver for change is integrated with actions that address other drivers for change.
- **Refining the partnership vision.** Partnerships may have an existing vision, and or may have drafted a vision using section 1 of this handbook. Others may have waited to develop their vision. Regardless of which stage your partnership is at, it's useful to review and re-focus the vision now that you have a better understanding of the values and priorities of partners and the wider community.
- **Communicating potential future changes.**  
An accessible, clearly written description of potential future changes and how your partnership will respond to them can help generate publicity and wider interest in your work.

## Case study: Moors for the Future

The Moors for the Future partnership has understood how the moorland has changed in the past and how it might change in the future. This information has been used to inform a vision and agree actions for restoring and enhancing the moorland and its ecosystem services.

The Moors for the Future partnership established in 2003 with the aim of reversing 150 years of damage to the moorlands of the Peak District and South Pennines. The Partnership has identified 6 phases for restoring the large areas of bare peat. One of the key phases was to identify why the moors have degraded in order to focus action appropriately. 7 historic and potential future forces for change have been identified:

- Air pollution – responsible for killing the main peat building material, sphagnum moss, and changing the composition of vegetation on the moorlands.
- Increased usage by people – causes vegetation to be trampled and the loss of peat.
- Accidental or deliberate fires – seriously threatens the fragile moorland vegetation.
- Risk from weather – with little or no vegetation to ‘knit’ the soil together the moors are at greater risk from weather, such as frost heave, wind and rain.



© Moors for the Future

- Drainage – After the Second World War the moorland was drained for pasture.
- Competition by non-native plants – Non-native species, such as rhododendron, have been introduced to the moorlands for various reasons and are able to out-compete native species.
- Overgrazing of the moorland – almost strips the moorland bare of its vegetation.



© Moors for the Future



Understanding the reasons behind moorland degradation has helped to identify actions which address the forces for change:

Action	Links to forces for change
<ul style="list-style-type: none"> <li>Increasing the diversity of native plants</li> </ul>	<ul style="list-style-type: none"> <li>In response to competition from non-native plants; overgrazing stripping the moorland of vegetation</li> </ul>
<ul style="list-style-type: none"> <li>Upland path management</li> </ul>	<ul style="list-style-type: none"> <li>To encourage visitors to walk on paths reducing the impact on vegetation</li> </ul>
<ul style="list-style-type: none"> <li>Removing sheep from restoration areas</li> </ul>	<ul style="list-style-type: none"> <li>To prevent grazing animals from stripping vegetation from restored areas</li> </ul>
<ul style="list-style-type: none"> <li>Gully blocking</li> </ul>	<ul style="list-style-type: none"> <li>To block eroding channels and raise the water table where drainage has occurred in the past</li> </ul>

More information is available at: [www.moorsforthefuture.org.uk](http://www.moorsforthefuture.org.uk)



## Remember...

Keep a record of key decisions and actions such as:

- Priority ecosystem services
- A clearly-written description of potential future change and its impact on ecosystem services
- Actions for responding to drivers for change
- Revisions to your partnership's vision or objectives





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4

## Develop integrated delivery plans

The ecosystem approach encourages integrated action to deliver multiple benefits for people. Integrated delivery is a key stage in applying the ecosystem approach. This section of the handbook will help your partnership develop an integrated plan (or bring together existing plans) to ensure the partnership leads to efficient and effective working, maximising outputs and opportunities.







## 4a. Introduction

An integrated delivery plan involves partners working together, rather than individually, to pool resources and seek win-win situations that contribute to, and strengthen, the overall delivery and success of the approach. It provides a chance to find new ways of working and ensuring outcomes are delivered more efficiently and effectively.

Integrated delivery is key to the partnership and the ecosystem approach. It presents a range of opportunities to make work both more effective, more efficient and have a greater spatial coverage than the individual partners could achieve alone.

Integrated delivery can make partners' work more efficient by delivering actions that may not otherwise be possible through scaling up affordable solutions, covering a wider area and having a greater impact than would be the case if partners worked in isolation on similar projects.

### Established Partnerships

Established partnerships may already have a strategy, action plan or management plan, the format of which will vary between partnerships. A separate delivery plan is not essential provided that the principles of the ecosystem approach are fully integrated into existing plans.



## 4b. Developing integrated actions

Members of the partnership will have action plans or strategies, outlining their organisation's objectives. Combining the objectives and actions of the different members develops integrated actions for the partnership. This should be beneficial in terms of making outcomes more deliverable or co-ordinated to have a greater impact or reduced costs through shared responsibilities. Integrating actions is an iterative process involving several stages of development and refinement: A series of workshops may be a good way of facilitating this process.



Steps to think about when developing integrated actions include:

- **Understanding each other's objectives.** An important first step is to understand the objectives of all partners. Identify where the objectives overlap, where they do or don't relate to the priorities identified by the partnership, and where there may be conflicts of interest. Where established partnerships have agreed actions, focus on linking actions to the priority ecosystem services and identifying gaps.
  
- **Agree shared actions.** Reviewing or developing and agreeing shared actions may require several stages of development. The following can help structure discussions or workshops:
  - **Reviewing existing actions.** In the same way that the partnership should understand each partner's objectives, it should consider the relevance of existing actions for delivering multiple ecosystem services .When possible, existing actions should be tested and amended until they are agreed by the partnership as a whole. Conflicts of interest should be discussed and if possible a compromise sought.
  
  - **Links to ecosystems and ecosystem services.** Identifying actions that deliver multiple ecosystem services is an important part of this stage. Consider how specific ecosystem processes and functions are managed and the benefits to people (see [Fact Sheet 1: Understanding the ecosystem approach](#) ). Partners should then consider the effect of their management on ecosystem processes and functions when linking actions to specific ecosystem services – and identify where there are any gaps in management that need addressing.
  
  - **Identifying win-wins and trade-offs.** When developing shared actions it is important to understand where there may be trade-offs or win-wins between the actions of individual partners. Win-wins will strengthen the value of actions whilst trade-offs must be considered in terms of the local context and priorities for ecosystem services. For example: a win-win could include rewetting a wetland which may reduce flood risks and associated costs while enhancing habitat locally; a trade-off could be increasing woodland cover for flood regulation which may result in the reduction of land available for

food production. Where flooding is an issue this may be an acceptable trade-off to make locally but could cause negative impacts in the future as food security becomes increasingly important. The monitoring process highlighted in section 5 is important to understand the implications of decisions in the future but identifying win-wins and trade-offs now should help to ensure long term sustainable management of resources.

- **Prioritising actions.** The ecosystem services identified as priorities in sections 2 and 3 may be the focus for prioritising actions. Prioritising actions seen as ‘quick wins’ by partners or the wider community will help maintain the ‘momentum’ of the partnership (‘quick wins’ may include actions that are already underway). You may prioritise actions that are considered most pressing because the ecosystem service is most vulnerable, or because the actions will provide the biggest benefit to people, or the biggest impact on landscape change.

#### **SMART:**

When developing your actions bear in mind the need for actions to be SMART:

- **S**pecific – clear, unambiguous actions that are understood by all partners
- **M**easurable – actions which include criteria for measuring progress, including specific targets
- **A**ttainable – realistic actions that stretch the partners, but are not impractical or over-ambitious
- **R**elevant – actions that are relevant to the partnership and the priority ecosystem services
- **T**ime-bound – setting a deadline or timeframe for actions to be completed

- **Making actions relate to a place (opportunity mapping).** Opportunity mapping is useful because it doesn't dictate where an action should take place (this is the decision of the land manager) but identifies where there are opportunities for actions. Mapping the opportunities for actions identifies the flows of ecosystem services and how action in one place may affect another place, or benefit people elsewhere. Maps help identify synergies and potential conflicts between different actions for different ecosystem services while illustrating the additional benefits that could be provided and aspirations identified by local people. It is recommended that a separate map is produced for each ecosystem service to enable maps to be overlaid, so areas of cross-over can be identified.
  
- **Thinking about delivery.** Consider who will be responsible for delivering each action. Whilst there may be a lead partner, some of the actions will be delivered collectively, reducing the burden of responsibility from one partner or sharing different processes which can deliver an action between partners. Established partnerships may already have an approach to collective delivery. In this case, focus on the opportunities to do things differently and adapt current practice to ensure the principles of the ecosystem approach are applied.

# Case study: Bassenthwaite Upland Ecosystem Services project

The Bassenthwaite Ecosystem Services Pilot Project has successfully developed integrated actions for land management to deliver multiple benefits.

Bassenthwaite Ecosystem Services Pilot Project is one of three upland ecosystem services pilot projects initiated by Natural England. The project is demonstrating how multiple public benefits can be delivered within the Bassenthwaite catchment (Lake District, Cumbria) through integrated partnership working. It aims to demonstrate and value the public benefits that the catchment's environment provides. The project developed a short, detailed, map-based delivery plan with partners through a series of workshops and individual meetings.

In a workshop, partners identified actions to enhance individual ecosystem services. The key services were based on the Lake District National Park Partnership's "Principles of Land Management", which had already been agreed by stakeholders. This was then drawn together into a matrix, showing which actions contribute to the enhancement of which ecosystem services. This identified where there are "win-win" actions which could enhance multiple benefits and contribute to different partners' objectives. The initial matrix showing integrated actions provided a tool for discussion and further refinement. The matrix was refined through individual meetings with steering group partners and a further partner workshop. Gaps were filled where an ecosystem service required a particular action, for example the restoration of Scheduled Monuments at risk.

Key Action	Ecosystem Services and Benefits										Partner Objectives									
	Water provision	Food and fibre	Carbon storage and sequestration	Erosion Control	Water quality	Flood Regulation	Cultural landscape, nature environment	Recreation, inspiration, education and health	Biodiversity	Biodiversity 2020 - SSSI target	Biodiversity 2020 - habitat targets	Climate Change adaptation	Natural Character Area Profile	Catchment Sensation Framework	Improved Access to environment	SoCUMF2	Catchment Flood Management Plan	Water Framework Directive	Heritage at Risk	Lake District National Park Partnership Principles of Land Management
1. Increase Woodland Cover	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x		x
2. Achieve Sustainable Grazing	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x
3. Sustainable River Management			x	x	x	x			x	x	x	x	x				x	x		x
4. Restore Scheduled Monuments at Risk				x	x		x	x				x	x						x	x
5. Improve Access			x	x	x		x	x	x			x	x		x					x
6. Manage Nutrients on Improved Grassland			x	x	x		x	x	x	x		x	x				x			x
7. Improve Biodiversity of Valley Habitats			x				x	x	x	x	x	x	x		x					x

Other workshop activities included:

- Getting people to identify all the benefits that people get from the natural environment of the Bassenthwaite catchment (ecosystem services) by writing these on post-its and sticking these on a large "child's address" (from the farm to the world) of who receives those benefits.
- Looking at the opportunities and barriers (and solutions to barriers) of applying the ecosystem approach for different stakeholders and sectors e.g. asking farmers how it could fit with their farm business.
- Opportunity mapping, where participants identified where there might be opportunity to undertake key actions. This required as much data as possible (that acted as proxy for ecosystem services) to be illustrated on large scale maps. It did not aim to identify where an action is proposed but where it would be beneficial to carry out an action. It also showed where there may be several opportunities in one area.



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The process allowed the partnership to identify seven key land management actions:

1. New woodland creation
2. Sustainable grazing
3. Sustainable river management
4. Restoring Scheduled Monuments at risk
5. Improving access
6. Managing nutrients on improved grassland
7. Improving biodiversity of valley habitats

Two farmer workshops were held to consider how the seven land management actions, with Higher Level Stewardship funding, could fit as part of viable farm businesses. Farmers' views on the provision of ecosystem services were also sought through a questionnaire. Further individual meetings and a partner workshop identified mechanisms for delivery and how actions could be embedded within partner organisations.

Priority Higher Level Stewardship agreements to implement the delivery plan were embedded in future Natural England delivery through the Higher Level Stewardship prioritisation process.

The project was initially a new task group within the Bassenthwaite Lake Restoration Programme but after 18 months it was incorporated into the core work of the partnership, with a review of the partnerships objectives and visions. It has provided the partnership with both a map-based baseline assessment of the existing ecosystem services and opportunity maps for targeting delivery on the ground, which hadn't been available before. It has allowed the partnership to demonstrate how its actions contribute to multiple ecosystem services, beyond its initial focus on improving the water quality in the lake. The project also enabled the partnership to involve a wider range of stakeholders, including from the tourism and farming sectors.

**More information is available at:**

<http://ecosystemsknowledge.net/resources/examples/bassenthwaite> and <http://publications.naturalengland.org.uk/publication/4084624>



## → ..... 4c. Funding

Funding is vital for implementing any action plan. When resources are strained and new sources of funding limited, consider innovative methods for funding actions. **Fact sheet 9: Funding advice** provides more detailed information about potential funding sources and how to go about obtaining them.

Things to think about when seeking funding:

- **Combining resources.** The first step is to consider what sources of funding are available and which of the actions can be supported by them. The benefit of working in partnership is that resources and funding can often be combined to deliver actions.
- **Existing funding sources.** You may be able to reallocate or extend funding to deliver new actions – for example, by reallocating contingency money from a grant or helping farmers into the environmental stewardship scheme.
- **Exploring new sources of funding.** Make a list of which actions are not currently funded and what potential sources of funding are available to finance them. Consider contacting local businesses or applying for grants, such as Lottery funding or local grants available to community groups.
- **Innovative funding ideas.** Consider innovative schemes such as visitor payback or green tourism schemes. Payments for Ecosystem Services (PES) schemes may be considered. PES is a range of schemes through which the beneficiaries, or users, of ecosystem services provide payment to the stewards, or providers, of those services.
- **Funding from other sectors.** It may be useful to think about how the partnership's actions could deliver the objectives of other sectors, which may be able to provide funding. For example, budgets for improving public health and wellbeing could help deliver some actions.
- **The longevity of funding.** Ecosystems are not short term projects, it is important to gain long term funding which will enable a suitably long term approach to ecosystem management<sup>8</sup>.

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<sup>8</sup> Waylen, K. et al, Exploring experiences of the Ecosystem Approach, The James Hutton Institute, November 2013



## Case study: Nurture Lakeland – Visit Give Protect

Nurture Lakeland is an example of an innovative and new funding scheme for environmental improvements.



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Visit Give Protect, managed by Nurture Lakeland, is a visitor giving initiative. It invites visitors to the Lake District or Cumbria to make a voluntary contribution towards looking after the places they have come to visit. Tourism businesses have been engaged in setting up visitor giving schemes, where the business provides a simple way for visitors to make a small donation. For example, a guesthouse may add a voluntary contribution to a guest's bill, or a cafe may sell a particular product with a small amount added to the price as a donation. Contributions tend to be small, around 50p to £2, and are entirely voluntary.

In setting up their scheme, the business will select a particular local conservation project to donate the money to. This is then publicised to customers so they are aware of how their donation will make a difference.



**More information is available at:** [www.nurturelakeland.org/nl-visit-give-protect/visit-give-protect-combined.html](http://www.nurturelakeland.org/nl-visit-give-protect/visit-give-protect-combined.html)



## 4d. Focussing action

Once the integrated delivery plan has been prepared it needs to be a 'living' document. How the plan is presented is often key to ensuring that partners continue to refer to, use and update it. Mapping actions in a visual delivery plan (or masterplan) can be more engaging than a written report; an online interactive action plan can provide a live resource that is easy and convenient for all partners to update.

Things to think about when communicating your action plan:

-  **Developing a visual delivery plan or masterplan.**  
Images are a powerful way of communicating with different audiences. Maps are an obvious means of visual communication. When creating a masterplan map use icons to illustrate ecosystem services or photographs of case studies alongside the map to provide examples of the actions. If resources allow, developing visualisations (2D or 3D) can show how the landscape will look once the actions are completed. However, a colourful map with images is often just as engaging.
  
-  **Developing an online interactive action plan.**  
Online plans are a good way of sharing the management and delivery of actions amongst a partnership. They can be conveniently accessed and updated by partners in ways that a standard document cannot. Interactive plans enable partners to create their own action lists and monitor progress. They are also a good way of engaging wider stakeholders in ongoing partnership work, including opportunities for consultation and feedback.

# Case study:

## Forest of Bowland AONB Interactive Management Plan

This is an example of a successful and well used interactive management plan that helps communicate actions and progress to stakeholders.

The action plan for the Forest of Bowland AONB Management Plan 2009–2014 is accessible as an interactive action plan on the AONB’s website. The interactive plan allows partners to update and view progress on actions and objectives. It is possible to view the whole action plan or filter by theme (including economy, community, natural and cultural landscape), status (e.g. completed, in progress, not started) or partner. An interactive Sustainable Tourism Strategy action plan has also been developed to accompany the interactive Management Plan.

Interactive action plans create ‘live’ documents that ensure progress is recorded and shared. This encourages greater understanding of roles and responsibilities between the different partners. It also creates a transparent approach to working and provides motivation to collaborate to achieve goals.



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Full Management Plan | Forest of Bowland

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Area of Outstanding Natural Beauty

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## Full Management Plan

[View and download comments](#)

Status:  Partners:  District:  Only my flagged actions:

Theme:

Sub Theme: 1. AONB-Wide

Objectives	Actions	Targets	Timescale	Theme	Sub Theme	Partners	Status	Comments	Flags
1.1 Promote and implement the European Landscape Convention and raise awareness of the benefits of an integrated approach to landscape.	1.1A Lobby local, regional and national government to include landscape in all relevant policy areas.	Lobbying activities undertaken where appropriate.	Ongoing	Natural and Cultural Landscape	1. AONB-Wide		In progress	3 <a href="#">View</a>	
1.1 Promote and implement the European Landscape Convention and raise awareness of the benefits of an integrated approach to landscape.	1.1B Conduct a detailed Landscape Character Assessment (LCA), in accordance with national guidance, that builds on existing typology, integrates Historic Landscape Characterisation and biodiversity, and identifies local landscape character areas.	LCA study carried out.	By 2011	Natural and Cultural Landscape	1. AONB-Wide	AONB Unit, Lancashire County Council, North Yorkshire County Council	Completed	1 <a href="#">View</a>	
1.1 Promote and implement the European Landscape Convention and raise awareness of the benefits of an integrated approach to landscape.	1.1C Use the Landscape Character Assessment to develop specific Landscape Quality Objectives, with the active involvement of local communities.	Landscape quality objectives developed.	By 2014	Natural and Cultural Landscape	1. AONB-Wide		In progress	1 <a href="#">View</a>	
1.1 Promote and implement the European Landscape Convention and raise awareness of the benefits of an integrated approach to landscape.	1.1D Agree Higher Level Stewardship targeting that conserves and enhances AONB landscapes and landscape features.	Targeting agreed.	Ongoing	Natural and Cultural Landscape	1. AONB-Wide	Dales & Bowland Community Interest Company (CIC)	In progress	1 <a href="#">View</a>	
1.1 Promote and implement the European Landscape Convention and raise awareness of the benefits of an integrated approach to landscape.	1.1E Support and promote conservation and enhancement of landscape by farmers and landowners through facilitating access to Environmental Stewardship.	5 multi-objective agreements delivered annually (including renewal agreements).	Ongoing	Natural and Cultural Landscape	1. AONB-Wide		In progress	1 <a href="#">View</a>	
1.1 Promote and implement the European Landscape Convention and raise awareness of the benefits of an integrated approach to landscape.	1.1F Ensure that integrated conservation and management of natural and cultural heritage is reflected in the landscape.	Integrated advice provided where appropriate.	Ongoing	Natural and Cultural Landscape	1. AONB-Wide		In progress	1 <a href="#">View</a>	

More information is available at:

[www.forestofbowland.com/cons\\_managementplan](http://www.forestofbowland.com/cons_managementplan)





## Remember...

There will now be actions to record and take forward to delivery as described in the:

- **Integrated delivery plan, including priorities and partnership responsibilities, in the form of a written report or interactive online plan.**
- **Visual delivery plan or masterplan (summarising what is proposed and where) for communicating actions to partners and the wider community.**




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5

## Integrated delivery and monitoring

This stage provides advice on monitoring the delivery of actions and adapting management responses where necessary. This is known as 'adaptive management'.





**This section of the handbook will help you answer the following questions in the Ecosystem Approach Partnership Assessment:**

- **Question C:** Are you involving a wide range of stakeholders and the local community in planning and delivering action for ecosystem services in your area, including those who benefit from them?
- **Question G:** Are you using monitoring as feedback, to inform and adjust your management planning, actions and priorities?

**This section addresses these questions by helping your partnership to:**

- Report on progress to funders, partners and the wider public, encouraging their continued involvement
- Develop a framework for monitoring the outcomes of the integrated delivery plan
- Use the framework to inform and adjust management, delivery, actions and priorities identified in section 4

## → ..... 5a. Introduction

Ecosystems are complex and ever-changing, there is still much to understand about how to manage them for the services they provide. Monitoring the delivery of the ecosystem approach is vital in developing future understanding. Adaptive management is key to successfully developing the approach because it encourages the review and adjustment of delivery in response to changes. It's about learning while doing and not putting off action until understanding is good enough to proceed.

It is important to monitor the processes of delivery and the effects your partnership's actions are having before making adjustments to management. There are two aspects to monitoring integrated delivery: monitoring the outcomes of delivery and monitoring the partnership and its delivery methods.

## → ..... 5b. Learning and adapting

As mentioned throughout this handbook, the ecosystem approach is about working in partnership to achieve integrated planning and delivery. The success of the partnership is crucial to the success of the approach. In addition to monitoring outcomes, it is important to review and adapt how the partnership operates to ensure the overall vision is being met, together with the objectives of individual partners.

Things to think about when monitoring partnership and delivery:

- **Reviewing the partnership and its vision.** This is a good point to review the membership and overall vision of the partnership. Monitoring may highlight gaps in membership or help refocus the aims. Refer to section 1 for more information.
- **Monitoring understanding of the ecosystem approach.** Section 1 suggested assessing existing knowledge or opinions of partners in terms of the ecosystem approach, using a questionnaire. A similar questionnaire, to determine how understanding and appreciation has changed, can be carried out at different stages throughout the process.

- **Using the Ecosystem Approach Partnership Assessment.** It is suggested that the Ecosystem Approach Partnership Assessment is used to assess how far the ecosystem approach is being applied at the beginning of the process. Its ongoing use will help to monitor how the partnership is contributing to Outcome 1C and where it needs to make further improvements. The questions in the Ecosystem Approach Partnership Assessment should be discussed in regular partnership meetings.
- **Monitoring partnership working.** It may be useful to ask partners how they feel the partnership is working in terms of their time commitment, usefulness to their organisation's objectives or efficiency of delivering actions. This could be in the form of an anonymous questionnaire or open discussion in a meeting. These answers can inform any changes in how the partnership is managed.
- **Using new information.** Use research and data gathering to determine if the partnership's work is meeting needs, identify gaps in delivery and inform future priorities. The partnership may wish to gather its own data, or could use existing local, national or international research.



# Case study:

## MENE Data

MENE data is a valuable and well used trend dataset for monitoring qualitative aspects of how people interact with the environment. Understanding such information can determine how far the partnership is meeting people's needs to inform future priorities.

The Monitor of Engagement with the Natural Environment (MENE) survey, funded by Natural England, with support from Defra and the Forestry Commission, provides trend data on how people use, access and engage with the natural environment in England. MENE collects information about visits to the natural environment. This includes the type of destination, the duration of the visit, mode of transport, distance travelled, expenditure, main activities and motivations and barriers to visiting. The survey also collects information about ways that people engage with the natural environment, such as watching wildlife and volunteering. It collects data regarding visits to local and informal green spaces which was previously under recorded but which can play a vital role in providing ecosystem services.

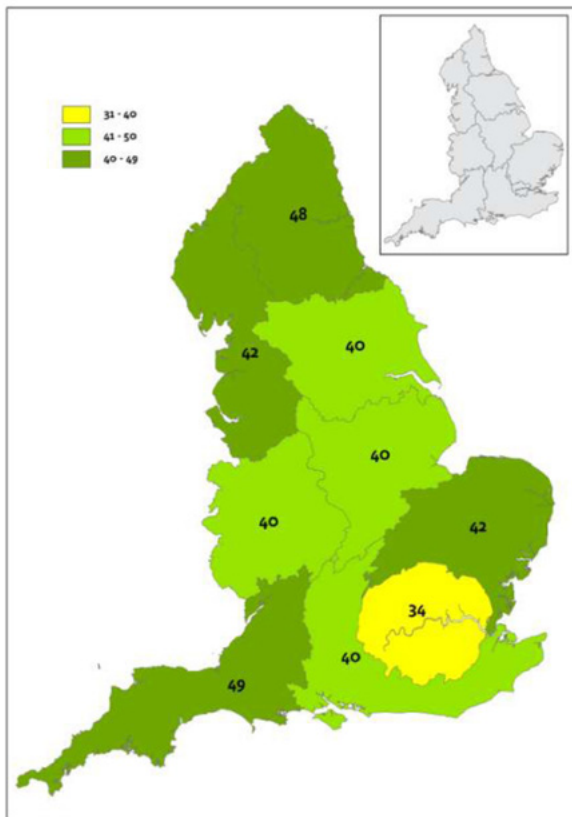
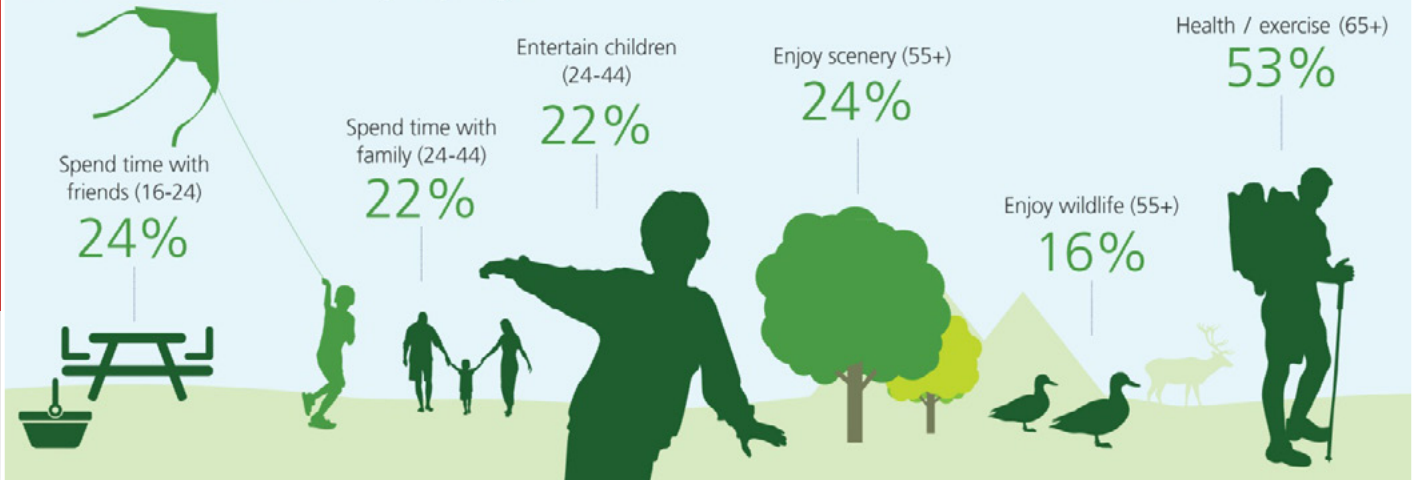


Figure 3-2 Participation in visits to the natural environment in last week by residents of each region (%)



## Visit motivations vary by age...



## BENEFITS OF VISITING THE OUTDOORS (YEAR 4)

Enjoyment, relaxation, refreshment and appreciation of the natural environment are consistently reported benefits of visiting the outdoors.



Gathering and using information such as MENE data is very useful for assessing the impact of policy interventions as well as enabling informed decisions to be made about developing or promoting access to the natural environment.

The ongoing nature of the data means it can be used to monitor the effectiveness and impact of the partnership in terms of how it is meeting the needs of both local communities and tourists. This means a wide range of partners can learn from the data and adapt their management responses accordingly.

More information is available at:

[www.naturalengland.org.uk/ourwork/evidence/mene.aspx](http://www.naturalengland.org.uk/ourwork/evidence/mene.aspx)



## 5c. Monitoring outcomes

This section of the handbook provides advice on how to monitor the outcomes of the integrated delivery plan. This is not intended as a standalone monitoring framework but should integrate with existing monitoring and processes. For the ecosystem approach, monitoring should focus on the social and economic outcomes alongside monitoring ecosystem services and environmental change.

Things to think about when monitoring outcomes:

- **Establishing the starting point.** Much of the previous sections of the handbook have focussed on developing a baseline from which to monitor progress. Developing SMART actions in section 4 will assist in monitoring progress, as the actions will include measurable targets by which progress can be assessed.
- **Developing a set of indicators.** It is suggested that a simple set of indicators, relating to the ecosystem services identified in sections 2 and 3, are developed to help monitor change. These may include indicators used in existing monitoring frameworks. For example, length of Public Rights of Way or accessible paths improved, percentage of woodland in active management, or number of people stating their health has improved. Monitoring can often be time consuming and so it's important to use indicators that can be readily monitored over the long-term.
- **Using existing monitoring frameworks.** There may be existing monitoring frameworks in use by established partnerships, or by individual partners – for example, those used in reporting to funders or the Biodiversity Action Reporting System. Consider how existing frameworks could feed into or be adapted for the purpose of monitoring the integrated delivery plan. This will avoid duplication and reduce the burden on partners to develop new monitoring systems.



**Using different techniques to measure change.**

A range of techniques can be used which can involve the wider community in monitoring change over the long-term. Examples include:

- Fixed point photography – photographs of key views or features are taken regularly from the same point and change monitored over time.
- Remote sensing tools – such as satellite imagery.



**Qualitative monitoring.** Monitoring is not only about counting numbers; social research into the qualitative effects of delivery and the partnership is also important. Whilst quantitative information provides information about trends, qualitative information provides important detail about the ‘meaning’ behind the figures, particularly when considering public values or attitudes towards the natural environment. For example, interviewing beneficiaries to discover the impact of actions on their lives; or finding out how volunteering has helped local people.



**Maintaining a database.** The partnership will have collated a lot of source information that can be used as a starting point or ‘baseline’ for ongoing monitoring. Identify a lead officer within the partnership to maintain this database and include new and updated information as it becomes available. This is more efficient than abandoning the database and starting again for future projects!

# Case study:

## Monitoring Wild Ennerdale

This partnership has developed a strong monitoring methodology to understand the implications of change and how the partnership's actions are affecting change.

Wild Ennerdale is a partnership led by the National Trust, Forestry Commission, United Utilities and Natural England. It aims 'to allow the evolution of Ennerdale as a wild valley for the benefit of people, relying more on natural processes to shape its landscape and ecology'. Monitoring is a key part of the project and is recognised as important for: informing partners about unacceptable change; sharing results of allowing natural process to develop the valley; providing a baseline for future generations to see the effects of change on the valley; assessing the effectiveness of the partnership's actions.

The partnership understands that commitment to the vision for a 'wild' valley is reliant on understanding how the valley has and will change. Essential to this understanding is a robust, long term monitoring framework which considers a range of elements at different scales.

The partnership has developed an extensive baseline dataset from which to understand change in the valley and in many cases, has used a variety of methods to understand how the different elements have changed. This approach of using different methods is essential to being able to identify large scale natural processes and for the partnership to continue to understand the effectiveness of their actions in the longer term.

Some of the elements that the partnership has been monitoring include vegetation change, birds, extensive cattle grazing, forest and woodland development, and how people experience the valley. The partnership has developed a methodology for ecological monitoring which works at three scales: broad scale, medium scale and detailed scale and can be used to monitor large scale natural processes. This methodology identifies what data already exists, what data is needed in the future, how this data will be collected and who will be responsible for its collection.



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More information is available at: [www.wildennerdale.co.uk/monitor.html](http://www.wildennerdale.co.uk/monitor.html)





## Case study:

# Monitoring and modelling ecosystem services: A scoping study for the ecosystem services pilots

This study identifies data sources and modelling approaches for monitoring change to ecosystems.

Natural England commissioned this study to identify and comment upon existing data sources that might be suitable for monitoring change in ecosystem service delivery as a result of land and water management changes in the three ecosystem services pilot areas:

- Bassenthwaite Lake Catchment (Lake District);
- South Pennines National Character Area (NCA); and
- The South West Uplands (Exmoor and Dartmoor).

A secondary objective was to review and suggest modelling approaches to predict future ecosystem service provision.



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More information is available at:

<http://publications.naturalengland.org.uk/publication/45009>



## 5d. Annual evaluation and reporting

An annual reporting cycle supports adaptive management and will enable your partnership to respond swiftly to changing opportunities and constraints.

Things to think about during annual evaluation and reporting:

- **Sharing progress with partners.** Integrated delivery means integrated monitoring, where progress is shared between partners. An interactive online action plan, which all partners can update, can help achieve this. Sharing progress can create opportunities for generating good publicity for the partnership by sharing positive stories with the wider community.
- **Reporting to the public and funders.** It is important to produce outputs targeted to different audiences. Use your audience development plan to determine what information is most relevant to each group.
- **Demonstrating social return on investment.** Reporting should go beyond reporting on environmental outcomes and consider outcomes for people's social and economic well-being.
- **Reviewing initial priorities.** During the early stages of developing the ecosystem approach, each of the partners will have their own priorities and desired outcomes. Each year partners should review these priorities and how they have been affected by changing circumstances.
- **Reviewing the monitoring framework.** As part of adaptive management, the monitoring framework should be regularly reviewed to account for new circumstances – for example, the quality of the results being generated, any new government requirements, or the implications of new research into monitoring the ecosystem approach.

# Case study:

## Holnicote Estate Flood Risk Management Pilot

This project has implemented a strong monitoring framework and baseline dataset to understand the impact of land management changes.

The project covers the entire 5,042 ha catchment based around the National Trust's Holnicote Estate on Exmoor, where the Trust owns roughly 90% of three catchments totalling 51km<sup>2</sup>. These catchments are typical of approximately 30% of the area of England and Wales, so the lessons learned may be transferable to similar sites elsewhere. The project aims to produce firm evidence of the way in which land management can alleviate flood risk at the same time as improving the wider environment in the area.

The principle objectives are to:

- establish a robust hydrological monitoring programme across the study area;
- identify potential catchment (hillslope and floodplain) interventions that may contribute to managing flood risk;
- demonstrate practical implementation of catchment interventions;
- gather evidence about the impact of the catchment interventions on runoff and flood dynamics;
- assess what the evidence reveals about the potential or actual benefits, in terms of both flood risk management and the delivery of a range of other ecosystem services.

An ecosystem services assessment has been carried out to evaluate the range of services currently provided across the Holnicote Estate and those anticipated following the land management interventions. An initial year of baseline monitoring of hydrology was conducted prior to the commencement of any interventions in the catchment. This has allowed the full impact of changes in land use on the hydrology and associated flood risk within the catchment to be assessed. The National Trust is co-funding a PhD student to establish whether the catchment management interventions can help to improve water quality. This research complements the catchment-wide hydrological monitoring with some additional chemical, biological and physical water quality monitoring to examine the effectiveness of land management changes in meeting water quality objectives.

The project will undertake land management interventions in four key areas, primarily in the Aller and Horner Water catchments: the upland areas at the headwaters of the watercourses; steep transitional valleys feeding down from the upland areas; the lowland meadows; and the intertidal zone (where the rivers flow to sea by infiltrating through a shingle beach). In each of these areas, land management interventions will be used to make space for water, holding it in the





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landscape at strategic sites so that it is released slowly following long or intense periods of rainfall, to mitigate the flood risk in the villages of Allerford and Bossington further downstream. In order to meet the flood risk mitigation and wider objectives of the project, the implementation requires change in land management to be secured for a minimum period of ten years. The Trust is committed, subject to funding, to maintaining the project over this period. If the expected environmental and public benefits are realised, the Trust will seek to ensure that the changes are secured for future generations.

Following the baseline studies, the land management interventions identified include:

1. Upland: Grip blocking on degraded peatlands
2. Middle catchment – cloughs, gullies and combes: Woodland and debris dam creation in upper gullies
3. Middle catchment – meadows: Wet meadow, wet woodland, in – field bunds and debris dam creation

4. Making space for water at the coastal escape in the intertidal zone (widening the shingle infiltration area and creating a bypass channel)

An analysis of the catchment characteristics (e.g. topography, hydrology, rainfall pattern, soils, and geology) and the existing Environment Agency hydrometric monitoring stations was undertaken to determine the preferred new hydrometric monitoring network. This consists of existing and new stations recording river stage (level), flow (discharge) and rainfall. The project team have been monitoring the baseline (starting point) conditions since 2010 and have been monitoring the effects of the management interventions across the catchment since 2011. Learning from the project will be reported and used to inform future planning policy and decision making in similar sites elsewhere.

**Further information about the hydrometric monitoring network is available at:**  
<http://ccmhub.net/case-studies/holnicote-case-studies/holnicote>



## Remember...

Following this final stage in applying the ecosystem approach, there will be a few actions to record and take forward to help ensure the ongoing success of your partnership:

- Review and revise the partnership membership and terms of reference.
- Review and revise the integrated delivery plan and adapt management responses, where necessary.
- Review and revise the monitoring framework.





# Fact sheet 1:

## Understanding the ecosystem approach



This fact sheet will help your partnership to understand the ecosystem approach, so that you are better equipped to communicate with others. When communicating with some stakeholders it may be wise to rephrase wording to convey the same meaning in a way that will be more readily understood. Some tips for making the language simpler are highlighted throughout the fact sheet.

### ..... Key concepts related to the ecosystem approach

#### Tip!

Some stakeholders may already have some understanding, or they may easily grasp the meaning of the key concepts. Some stakeholders may want to feel like they are using the most accurate terminology. It is therefore important to use language that your audience is comfortable with, whether that is technical, business focussed or plain English.

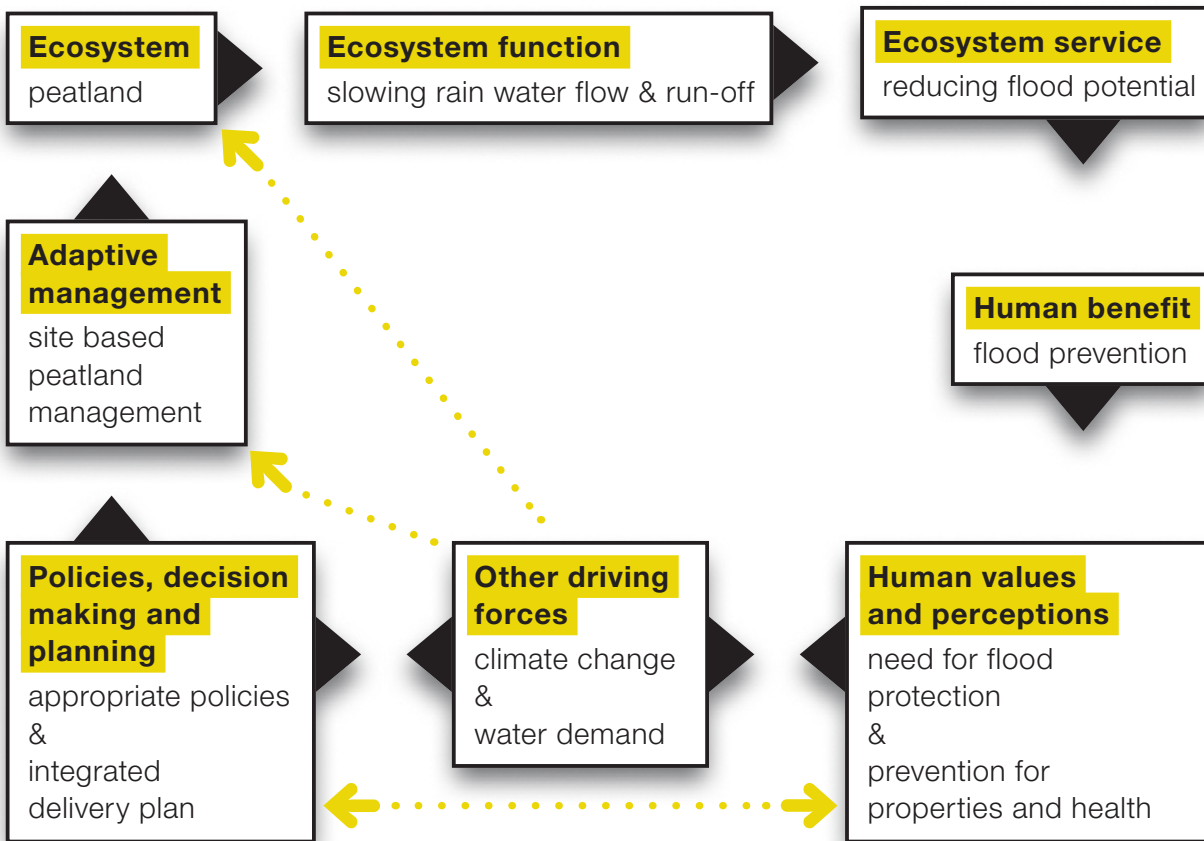




## Ecosystem approach

The ecosystem approach is an holistic and inclusive approach to looking after the natural environment. It is the primary framework for action under the Convention on Biological Diversity, set out in twelve principles. It applies current thinking about ecosystem services (what nature does for people) in line with sustainable development.

The Convention on Biological Diversity (CBD) describes the ecosystem approach as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.”



The diagram illustrates the complex interactions which make up ecosystem processes.

### Tip!

You may decide to describe the approach to others as ‘a way of working that takes account of the value of nature or nature’s assets, and the benefits nature provides’.

## Ecosystem

A web of relationships between living and non-living features in the natural world, recognised as a discrete unit. The term can be used to refer to a clearly defined feature (such as a lake) or may be used without reference to fixed boundaries. Many people choose to include people within their view of an ecosystem, rather than treating them as separate – an ecosystem approach encourages this. A more technical definition of an ecosystem is ‘the dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit’.<sup>9</sup>

## Ecosystem processes

Ecosystem processes are specific interactions among living and non-living things in the environment that drive *ecosystem functions*.<sup>10</sup> They may be physical, biological and chemical (or a mixture of these). Examples include: nutrient uptake by plants and pollination by insects.

## Ecosystem functions

Ecosystem functions are the characteristics of ecosystems that help to sustain those ecosystems in a particular state. They depend on the prevailing conditions (climate, geology etc.) and *ecosystem processes*. Examples include the circulation of nutrients between different parts of the environment (soils, water, plants etc.). When an ecosystem function provides a benefit to people it can be considered an ecosystem service.<sup>11</sup>

## Ecosystem services

Ecosystem services are benefits gained by people from the natural environment. For example, some features in the natural environment, such as wetlands or woodland, have the capacity to slow the passage of water, which in turn has the potential to reduce flooding. This is a characteristic of the ecosystem. If the potential to prevent flooding is considered a benefit (or a ‘value’) to people, then this ecosystem characteristic is an ecosystem service.

<sup>9</sup> JNCC (n.d.) Ecosystem [online] Available at: <http://jncc.defra.gov.uk/page-6378-theme=default>

<sup>10</sup> UK NEA (n.d.) Ecosystems [online] Available at: <http://uknea.unep-wcmc.org/EcosystemAssessmentConcepts/tabid/98/Default.aspx>

<sup>11</sup> Haines-Young, R. and Potschin, M. (2007) *The Ecosystem Concept and the Identification of Ecosystem Goods and Services in the English Policy Context*, Review Paper to Defra, Project Code NR0107, 21pp





The concept of ecosystem services forms an important part of the ecosystem approach. Management decisions affecting ecosystem processes and functions impact on ecosystem service provision. Ecosystems therefore need to be considered in decision making in order for them to provide benefits to people.

Ecosystem services have been categorised as follows:

- **Supporting services** – services that are necessary for the production of all other ecosystem services including soil formation, photosynthesis, water cycle, nutrient cycling
- **Provisioning services** – products obtained from ecosystems, including food, fuel, timber, medicines
- **Regulating services** – benefits obtained from the regulation of ecosystem processes, including climate regulation, water purification, flood prevention, air quality regulation, pollination
- **Cultural services** – non-material benefits people obtain through spiritual enrichment, recreation, aesthetic experiences, tourism

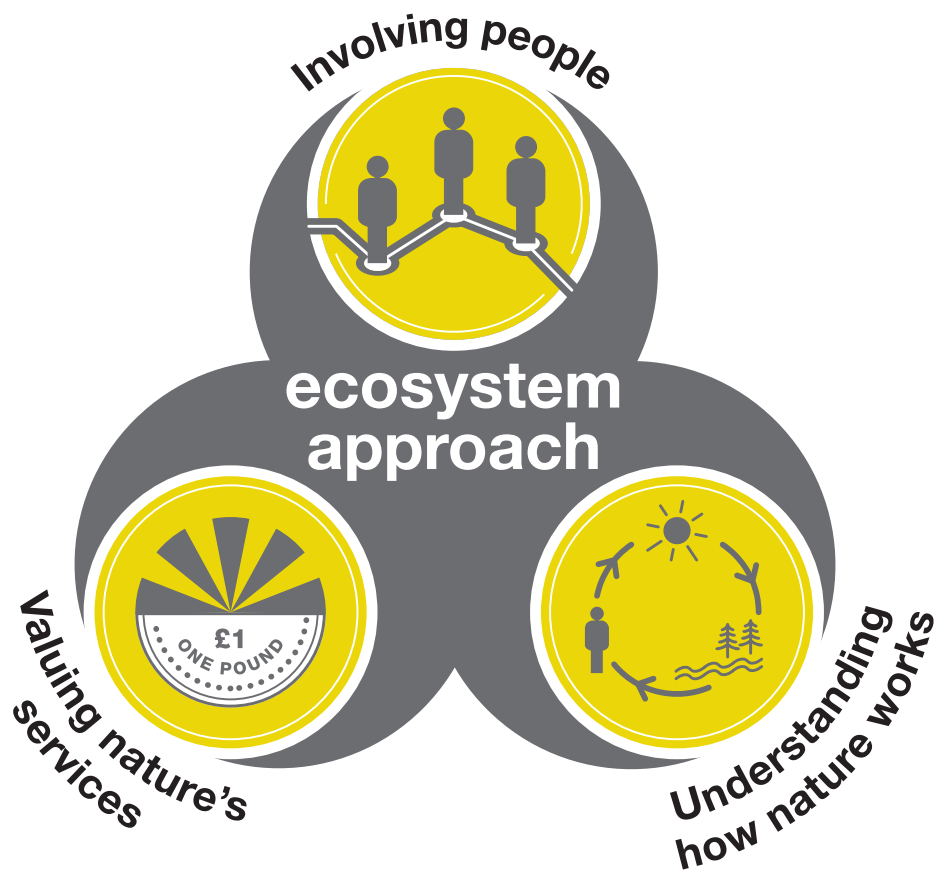
### Tip!

You could use terms such as 'nature's benefits', '*naturegain*' (as used by L&OVe – see Page 40), or 'landscape benefits' to describe ecosystem services to the wider community.

# ..... The ecosystem approach in detail

There are three key aspects of the ecosystem approach:

- **People**
- **Systems**
- **Value**







## People

According to the ecosystem approach, the natural environment should be managed in a “fair and equitable way”.<sup>12</sup> As a result, all partnerships seeking to apply the approach should strive to ensure best practice in terms of who is involved in decision making processes and how. The approach provides the impetus for a wide cross-section of society to be involved in the management of land and water environments and acknowledges that people hold different types of value for the natural environment. People express these values in different ways and need time to deliberate them individually and collectively. Involving a wider range of stakeholders in decision making exposes people to different perspectives and can generate new understanding and approaches to decision making.

Everyone involved in a decision should be encouraged to weigh up short term considerations as well as long term needs and desires. They should consider the interests of people who depend directly on an area of land or marine habitat (perhaps because they live or work there), as well as the wider sphere of interest (the beneficiaries of ecosystem services).<sup>13</sup>

The ecosystem approach encourages partnerships to ‘learn by doing’ and adapt in response to changing circumstances or as new knowledge is gathered. The flexible approach is essential to enable all partners’ understanding and perspectives to be integrated and acted-up over time.

## Systems

The ecosystem approach is holistic, considering the full range of ecosystem processes and ecosystem functions required to provide an ecosystem service. The approach ensures that decisions affecting land and water environments can best maintain these processes and functions. The goal is resilience for both ecosystems and people’s capacity to manage them.

In applying an ecosystems approach, it is important to recognise that people are part of the ecosystem. Relationships between society and the natural world are always changing and are two way. When deciding on the ‘significant’ functions and services of an ecosystem people’s choices and values are as important as knowledge about the natural world.

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<sup>12</sup> See Principle 1 of the ecosystem approach, as set out by the Convention on Biological Diversity.

<sup>13</sup> Haines-Young, R. and Potschin, M. (2007) *The Ecosystem Concept and the Identification of Ecosystem Goods and Services in the English Policy Context*, Review Paper to Defra, Project Code NR0107, 21pp

The ecosystem approach encourages partnerships to consider the ecological connections with areas beyond the boundaries of their project area.<sup>14</sup> There is a need to cooperate with stakeholders that may have an impact on, or depend on, the ecosystems within the partnership boundary.

## Value

Recognising diverse values for the natural environment, whether monetary or non-monetary, and reflecting these in decision-making is an important aspect of the ecosystem approach. Monetary values for ecosystem services help make the case for nature where competing economic interests are at stake. However, monetary values should not be considered in isolation from the other ways in which people communicate their views on the importance of, and need for, ecosystems and the services they provide.

Valuation – the process of assigning values – involves helping both individuals and communities to understand and communicate what the natural environment means to them. People may hold a particular affection for an aspect of the natural environment for various reasons such as their past experiences, their cultural background, and the opportunities it provides them. These benefits need to be articulated even if monetary values cannot (or should not) be assigned.

Values, when expressed, should not be seen as fixed, but rather a summation of views at one moment in time. They will constantly change as they are deliberated, as action is taken, and new information and perspectives arise.

Fact sheet 10: Valuation provides more information about how ecosystem services can be valued.

### Tip!

**You could facilitate a discussion with the wider community around what is special about your area or what people value most. For businesses, ask them to think about how they rely on the natural environment or what their work could impact on.**

<sup>14</sup> See Principle 3 of the ecosystem approach, as set out by the Convention on Biological Diversity.





## ..... Other terminology

### **Natural capital**

The Natural Capital Committee has defined natural capital as “the elements of nature that produce value (directly and indirectly) to people, such as the stock of forests, rivers, land, minerals and oceans”.<sup>15</sup> According to the Committee, it includes the living aspects of nature (such as fish stocks) as well as the non-living aspects (such as minerals and energy resources). Natural capital can be assessed at the local level (such as that relating to a city) or the national level. The quantity and condition of natural capital affects the flow of ecosystem services.<sup>16</sup>

The term ‘natural asset’ is often used interchangeably with natural capital. However, the term asset has a more specific meaning in accounting to describe things that are owned in order to yield certain benefits (capital is converted into assets). For example, the natural assets of a water utility company may include lakes, groundwater and land.

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<sup>15</sup> See Principle 3 of the ecosystem approach, as set out by the Convention on Biological Diversity.

<sup>16</sup> Natural Capital Initiative (n.d.) Glossary [online]  
Available at: [www.naturalcapitalinitiative.org.uk/glossary](http://www.naturalcapitalinitiative.org.uk/glossary)

## Environmental Management

This is management or control of human interactions with, and impact on, the natural environment. In most cases it does not refer to the management of the environment itself but the process of influencing decisions and promoting behaviours that have a positive effect on the environment.

## Land Management

Land management is the management of the use and development of land resources. Sustainable land management integrates the management of land, water, biodiversity, and other environmental resources to meet human needs while maintaining and restoring ecosystem services.

## Ecosystem Management

Ecosystem management is an approach to natural resource management that focuses on sustaining ecosystems for the benefit of people and nature. It is an integral part of the *ecosystem approach*. It is synonymous with *sustainable land management*.

## Further resources:

- **Defra:** The UK government department responsible for policy and regulations on environmental, food and rural issues.  
[www.gov.uk/ecosystems-services](http://www.gov.uk/ecosystems-services)
  
- **Ecosystems Knowledge Network:** A resource for anyone wanting to share knowledge or learn about the practical benefits of the ecosystem approach.  
[ecosystemsknowledge.net](http://ecosystemsknowledge.net)
  
- **Joint Nature Conservation Committee (JNCC):**  
The public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation.  
[jncc.defra.gov.uk/page-6276](http://jncc.defra.gov.uk/page-6276)



- **Parliamentary Office of Science and Technology:**  
Published a POSTnote that outlines how the ecosystem approach makes explicit the link between the status of natural resource systems and ecosystem services that support human well-being.  
[www.parliament.uk/business/publications/research/briefing-papers/POST-PN-377/the-ecosystem-approach-may-2011](http://www.parliament.uk/business/publications/research/briefing-papers/POST-PN-377/the-ecosystem-approach-may-2011)
  
- **The Economics of Ecosystems and Biodiversity (TEEB):** a global initiative focussed on drawing attention to the economic benefits of biodiversity including the growing cost of biodiversity loss and ecosystem degradation.  
[www.teebweb.org](http://www.teebweb.org)
  
- **UK National Ecosystem Assessment:** The UK NEA has provided new information on the changing natural environment in terms of ecosystems and the range of services that ecosystems provide to people.  
[uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx](http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx)
  
- **National Ecosystem Approach Toolkit (NEAT):**  
The NEAT Tree is an output of the Tools: Applications, Benefits and Linkages for Ecosystems (TABLES) project (2012-2014). The project was established to deliver Work Packages 9 and 10 of the UK National Ecosystem Assessment Follow-On (NEAFO) research. The aim of the project was: to mainstream the Ecosystem Approach in policy and decision-making processes across the built and natural environment. The NEAT Tree provides tools and experience to build our relationship with nature into decisions in a transparent, participatory and evidence-driven way.  
<http://neat.ecosystemsknowledge.net>





## **Fact sheet 2:** Convention on Biological Diversity

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The flexible and adaptable nature of the ecosystem approach is described by the Convention on Biological Diversity (CBD). The scale of an ecosystem is deliberately not established to allow partnerships to use the most appropriate scale for their area. The CBD emphasises an approach of ‘learning by doing’; the need for an adaptive approach to management that can change over time and as our understanding of ecosystems develops.





The CBD has prepared principles aimed at aiding the implementation of the ecosystem approach:<sup>17</sup>

1. **The objectives of management of land, water and living resources are a matter of societal choices.**

Economic, cultural and social perception of ecosystems varies amongst different elements of human society. Human rights, interests and cultural diversity must be taken into account and ecosystems should be equitably managed for their intrinsic, tangible and intangible benefits.

2. **Management should be decentralised to the lowest appropriate level.**

Management should involve all stakeholders, balance local interests and wider public interests, ensure management is close to the ecosystem, and encourage ownership and accountability.

3. **Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.**

The effects of management decisions and land use change can be felt far away, therefore impacts of management on adjacent and distant ecosystems must be considered.

4. **Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.**

Any such ecosystem-management programme should: Reduce those market distortions that adversely affect biological diversity; align incentives to promote biodiversity conservation and sustainable use; and internalise costs and benefits in the given ecosystem to the extent feasible.

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<sup>17</sup> Convention on Biological Diversity (n.d.) Principles [online] Available at: [www.cbd.int/ecosystem/principles.shtml](http://www.cbd.int/ecosystem/principles.shtml)

5. **Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.**

Ecosystem functions and structures that supply services must be conserved.

6. **Ecosystems must be managed within the limits of their functioning.**

Management strategies must consider environmental conditions that limit productivity, ecosystem structure, functioning and diversity.

7. **The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.**

Operational boundaries are defined by users, managers, scientists and local peoples. Cross-boundary connectivity should be promoted where necessary. Management options must consider the interaction and integration of genes, species and ecosystems.

8. **Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.**

Characteristic temporal scales and lag-effects within ecosystems must be taken into consideration. Preference of favouring immediate benefits over future ones should be avoided.

9. **Management must recognise that change is inevitable.**

Adaptive management must recognise the dynamic and complex nature of ecosystem properties and anticipate change. Managers need to avoid decisions that limit future options and actions should consider long-term protracted global change.





10. **The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.**

It is important to adopt a flexible management approach that takes conservation and use into context and apply a continuum of measures from fully protected to sustainably managed ecosystems.

11. **The ecosystem approach should consider all forms of relevant information, including scientific, indigenous and local knowledge, innovations and practices.**

Relevant information should be shared with all stakeholders. All assumptions should be made explicit and checked against available knowledge and stakeholder views.

12. **The ecosystem approach should involve all relevant sectors of society and scientific disciplines.**

To address management complexities decision making should draw upon necessary expertise and involve relevant stakeholders at all levels.

### Further resources:

- **Convention on Biological Diversity:** The Convention on Biological Diversity (CBD) entered into force on 29 December 1993, with 3 main objectives:
- The conservation of biological diversity
  - The sustainable use of the components of biological diversity
  - The fair and equitable sharing of the benefits arising out of the utilization of genetic resources
- [www.cbd.int/ecosystem](http://www.cbd.int/ecosystem)



## Fact sheet 3: Engaging stakeholders



Ecosystems have an intrinsic worth but their value is understood in how they benefit local people and those using a place. Stakeholder engagement, to understand how an ecosystem is valued, is the vital backbone of the ecosystem approach. It can confirm existing understanding and enable new ideas and perspectives to develop, enhancing the partnership and approach. Stakeholder engagement can be undertaken creatively to suit all budgets and resources –the more resources available, the more extensive the engagement can be, however, even limited resources can produce meaningful and valuable results.

### ..... Engaging people in the partnership

The first step in stakeholder engagement is to gain interest and participation in the partnership. Where there is an established partnership or where members of a new partnership are already engaging with stakeholders, these existing channels of communication should be used but it is vital that any new potential stakeholders are engaged. The Audience Development Plan should be used to define methods of engaging both existing and new stakeholders and interested parties (see Fact sheet 4).







### Tip!

Involving people in the process will require a commitment of their time and resources, it is important that people know from the outset what will be required of them. People should feel valued and not exploited by involvement or fatigued by the engagement process.

Initial engagement should be welcoming and open. Asking different stakeholders to share results from their own engagement or research is a good way of reducing consultation fatigue, generating an evidence base and providing stakeholders with a voice and role in the partnership. This helps stakeholders feel valued and enthused by the approach.

## Who should be involved?

The short answer to this question is anybody with a role or responsibility to the ecosystems or place under consideration!

To ensure that the right people are considered, it is helpful to review stakeholders under the following categories:

- **Beneficiaries of ecosystem services** – the individuals, communities or businesses that benefit from ecosystems in specific ways. Identifying and engaging the beneficiaries enables the partnership to understand the value of ecosystem services, priorities and pressures on the ecosystems.
- **Providers of ecosystem services** – those responsible for land or other aspects of ecosystems from which certain benefits can be derived. In many cases, ecosystem service provision may arise from groups of providers rather than single organisations.
- **Other organisations that influence ecosystems or the behaviour of beneficiaries and providers** – these may include local government and other public institutions; businesses; environment-related charities (such as RSPB, Wildlife Trusts); or groups representing local communities. Such organisations may offer advice or help with implementing new actions; or may already be implementing ecosystem based projects.

Some organisations may fall into more than one of the above categories.

Ideally, representatives from all three of these groups should be involved in your partnership. In addition to involving organisations that represent communities of interest, there is benefit to involving individuals from the local community.

It is important to publicise the partnership as widely as possible, making use of local networks and communications channels. The more stakeholders that you involve, the more meaningful your outcomes are likely to be, especially when influencing actions on the ground where it will be necessary to involve and work with stakeholders.<sup>18</sup>

## ..... Engaging with stakeholders

Once the partnership is established, a wider engagement process should be undertaken involving stakeholders who use, or have an interest in, ecosystem services. It will gather information on the perceptions of a place, how a place is changing and experiences of users/ managers who can identify local understanding of the issues. This stakeholder engagement is aimed at:

- Identifying and valuing ecosystem services
- Prioritising ecosystem services
- Understanding the pressures on ecosystems and the place
- Identifying future drivers of change
- Understanding local aspirations for a place

It is essential during this wider consultation to involve different groups and to do so in a way that is appropriate, enabling people to meaningfully engage. Different groups of people may need to be targeted in different ways to help them become involved. These groups can include young people, schools, young families, older people and people with disabilities. These groups should be considered in the audience development plan and appropriate methods for engaging them should be defined (see Fact sheet 4).

<sup>18</sup> Waylen, K. at al, Exploring experiences of the Ecosystem Approach, The James Hutton Institute, November 2013.





## ..... How to engage stakeholders

There is no single approach to engaging stakeholders. Different groups of stakeholders will require different approaches depending on their interest in, and understanding of, a place. Equally, the techniques will change depending on what a consultation is aiming to achieve.

### Tip!

**It is far better to run a series of different events where all participants can play a useful role than to run one event where some participants feel overwhelmed by the understanding of others.**

Consulting people on their opinions can lead to differing views being expressed. There are usually ways to solve conflicts. Here are some pointers:

- Never ignore conflict, instead be prepared to deal with it.
- Agree to a set of ground rules at the start of the process asking people to respect each other's views and understand that there is no single right or wrong answers and all opinions matter equally.
- If conflict arises during an event it is important to emphasise that different opinions are acceptable and that the consultation will record ALL opinions and views.
- If you are aware that there may be conflict between different parties try to put them in different groups to minimise the chance of conflict.
- If two people are disagreeing then try to keep other participants out of the conflict – if more people are involved then the conflict will escalate. Ensure that the conflict remains focussed on the issue in hand rather than escalating or becoming personal.
- Try to understand what is causing the conflict. Often it can be a simple misunderstanding caused by poor communication.

- If anybody behaves in an offensive manner then it is acceptable to ask them to leave the meeting or the process, depending on how other participants feel.

### Tip!

It may sometimes be appropriate to hire independent facilitators to plan and run engagement events or meetings. These can remain impartial and will be able to ensure everyone can have their say. They may also know of some creative techniques to engage a wide range of people.

## Toolkits and techniques:

- **Ecosystems News Issues 5, 'Well connected? Involving communities in an ecosystems approach':** This issue of Ecosystems News contains a selection of experience and wisdom from within the Ecosystems Knowledge Network on the topic of involving local communities. This includes helping people to benefit from the natural outdoors as well as involving them in decisions about local environments. The articles illustrate that involving people is not an aspect of the ecosystem approach that can be 'ticked off' when complete. Instead, it takes us to the heart of an ever evolving process of shared learning around a common ambition.  
[ecosystemsknowledge.net/about/publications](http://ecosystemsknowledge.net/about/publications)
- **Talking About Our Place Toolkit:** This Scottish Natural Heritage toolkit provides a step by step guide, aimed at enabling local communities to identify and value their local ecosystem services and, with this understanding, identify how the community would like their local place to be managed in the future. The tools and techniques section provides a good range of engagement methods.  
[www.snh.gov.uk/docs/B1117673.pdf](http://www.snh.gov.uk/docs/B1117673.pdf)



- **Participatory and Deliberative Techniques to support the monetary and non-monetary valuation of ecosystem services: an introductory Guide:**  
The purpose of this guide is to provide an introduction to the use of participatory and deliberative techniques (PDTs) for deriving monetary and non-monetary values for ecosystem services.  
[www.gov.uk/ecosystems-services](http://www.gov.uk/ecosystems-services)
  
- **Community Planning Toolkit:** This Big Lottery Fund resource aims at providing information and guidance on planning and designing a community engagement process.  
[www.communityplanningtoolkit.org/community-engagement](http://www.communityplanningtoolkit.org/community-engagement)
  
- **Practical Ways to Engage Your Community:**  
This Local Government Association resource includes tips and information for stakeholder engagement. It links to a number of engagement methods, participatory techniques and scrutiny methods, providing a range of ideas on how to engage with different groups.  
[www.local.gov.uk/localism-act/-/journal\\_content/56/10180/3510950/ARTICLE](http://www.local.gov.uk/localism-act/-/journal_content/56/10180/3510950/ARTICLE)
  
- **The National Co-ordinating Centre for Public Engagement:** A selection of resources and tools for community engagement.  
[www.publicengagement.ac.uk](http://www.publicengagement.ac.uk)
  
- **Heritage Lottery Fund:** Articles about community participation by Heritage Lottery Fund, primarily for their grant holders.  
[www.hlf.org.uk/preApril2013/furtherresources/Pages/Thinkingaboutcommunityparticipation.aspx#UvJey\\_s8rF4](http://www.hlf.org.uk/preApril2013/furtherresources/Pages/Thinkingaboutcommunityparticipation.aspx#UvJey_s8rF4)





## Fact sheet 4: Audience development plans



**The ecosystem approach puts people at the centre of the management of the natural environment. An audience development plan will help partnerships identify and understand their audiences (or stakeholders) and make sure they are fully engaged in the management of the natural environment.**

**A partnership's audiences are all the stakeholders that the partnership may come into contact with through their work.**

Some partnerships may already be successful in engaging with organisations and the wider community. Audience development is a proactive, planned process which enables the partnership to encourage greater participation from both existing and new audiences. It involves identifying existing audiences and encouraging their greater involvement, and attracting new audiences or people from under-represented groups. This may require the recognition and removal of barriers to participation and understanding the reasons why people don't choose to get involved. Barriers may include fee paying activities which discourage those on lower incomes; daytime activities during the week may be inconvenient for families or full-time employed people; or venues with limited access can discourage disabled people. Things that encourage participation include the chance to socialise or meet new people; the opportunity to entertain children; the opportunity to make a positive difference and improve the area; or just to 'have your say'.





## Under-represented groups

Where the partnership identifies groups that are under-represented, it should consider how to encourage their greater participation. Research consistently reveals that some groups are less likely to participate than others.<sup>19</sup> These include:

- older people;
- young people;
- families;
- people with lower educational attainment;
- people from black, Asian and minority ethnic communities;
- disabled people; and
- people in lower socio-economic groups and on low incomes.

It may be that different groups to those listed here are under-represented in different areas. It is important to realise that each group is made up of individuals and there may be considerable differences within each group. Each partnership should therefore understand their particular local community and how barriers to participation affect them. This may involve consulting with the local community to understand why they do not get involved in the partnership's work.

<sup>19</sup> Heritage Lottery Fund (2010) Thinking about... Audience development, London. Available at: [www.hlf.org.uk/HowToApply/goodpractice/Documents/Thinking\\_about\\_audience\\_development.pdf](http://www.hlf.org.uk/HowToApply/goodpractice/Documents/Thinking_about_audience_development.pdf)

# ..... Developing an audience development plan

The Heritage Lottery Fund identifies 5 stages to producing an audience development plan:

## 1. Thinking about your partnership and what you do

- Think about and describe what the partnership and your place have to offer, and set out your vision and objectives.
- Describe what your partnership is currently doing to involve people.

## 2. Understanding your audience

- Describe what you know about your current audiences, for example, how many people are involved in your partnership's work, who are they, where do they come from, what do they think about the partnership's work?
- You may need to consult with the wider partnership to share information about current community participation.
- Consider if your current audiences are representative of the local community, identify which groups are under-represented and why.

## 3. Setting priorities

- Consider the partnership's objectives and prioritise the groups that you consider to be most necessary to involve.
- Consider the barriers that may be affecting participation and consider how to remove these barriers.
- Set out what you hope to achieve and how you will measure success, for example the number of new groups/individuals involved.





#### 4. Taking action

- Draw up an action plan which includes:
  - Target audience e.g. young people, residents' groups, NGOs.
  - Activities to engage that target audience e.g. photography competition, heritage walks, visioning workshop, volunteer days.
  - Reaching the target audience e.g. through schools or youth groups, flyers to residents, letters to organisations. Fact sheet 7 provides more information about generating publicity.
  - Timescales for engagement e.g. during the summer holidays, monthly, ongoing.
  - Measures of success e.g. 30 young people involved, 3 new residents' groups involved.
  - Resources required and responsibility for overseeing action e.g. staff time, budget, staff member or organisation responsible for action.
  
- It is important to understand that different activities may work best for different audiences. Each audience is made up of individuals, each one with different interests and needs. A range of activities for each audience is therefore necessary to ensure wide participation.

#### 5. Evaluating action

- Measure and evaluate if you have reached your target audience and adjust activities accordingly. Your audience development plan should be reviewed regularly to ensure that new stakeholders are engaged as they are identified.

#### Further resources:

- **Heritage Lottery Fund:** Articles about audience development by Heritage Lottery Fund, primarily for their grant holders.  
[www.hlf.org.uk/grantholders/heritagefocus/audiencedevelopment/Pages/Audiencedevelopment.aspx#.UqhS-yd8y50](http://www.hlf.org.uk/grantholders/heritagefocus/audiencedevelopment/Pages/Audiencedevelopment.aspx#.UqhS-yd8y50) and  
[www.hlf.org.uk/HowToApply/goodpractice/Documents/Thinking\\_about\\_audience\\_development.pdf](http://www.hlf.org.uk/HowToApply/goodpractice/Documents/Thinking_about_audience_development.pdf)



## Fact sheet 5: Mapping the context

### → The landscape and its setting

Mapping the landscape can help define the project area, whilst providing some of the information required for section 2. You can map landscape character, designations, geodiversity, biodiversity and hydrology information to understand the context of the place. Producing all maps at the same scale will help people understand the relationship between different themes.

#### Tip!

Information in the National Character Areas profiles will be useful in defining the landscape context.







## ..... Gathering existing information

Existing studies such as management plans, green infrastructure strategies or supporting evidence from Local Plans may have gathered or analysed relevant information ready for your partnership to use. Although not mapped data, the National Character Area Profiles for your landscape may be a good place to start to gain an understanding of the character and landscape change for the area. Gathering information can be time consuming: there may be issues with licenses or sharing information; it may be difficult finding the right point of contact in an organisation; or the information may not be in the format you need. Appropriate resources and time should therefore be factored in to any project plans. [Fact Sheet 8: Data Sources](#) provides some examples of potential information that could be used.

## ..... Collecting data in a Geographical Information System

The scale at which maps are produced or data is captured in a Geographical Information System is a critical factor in how data can be used. The scale must be appropriate to the aims of the partnership and to whatever purpose the data will be used for. It is of course possible to zoom in to digital maps – but datasets captured at 1:250,000 scale, for example, are not accurate when displayed at 1:50,000. For this reason it is essential to review any data collected and assess whether it is suitable for the scale of analysis being undertaken.

## ..... Managing information

Any information collected should be regularly reviewed and updated to ensure the partnership is well-informed about the latest developments. The quality of any decision is only as good as the information it's based on – so it's important to keep records up to date and accessible to everyone in the partnership.

## ..... Making use of proxy data

In some cases the information gathered may relate directly to ecosystem services – for example, information on water quality from the Environment Agency will show where the impact of water pollution occurs (however, it does not show the location of the pollution source), or tranquillity information from CPRE and Natural England. Other information, such as a description of special qualities of a place, will require additional analysis to relate it to ecosystem services. In cases where information does not directly relate to ecosystem services, it may be possible to use proxy data: the extent of woodland can be used as a proxy for levels of timber production. Likewise information from landscape character assessments can help to understand cultural services or aspects of local distinctiveness. What proxy data is showing and its limitations needs careful explanation. In some instances it may be useful to use more than one dataset to depict a service, e.g. to depict carbon storage you may use the location of woodlands alongside the condition of peatland habitats.

## ..... Identifying gaps and collecting further information

There may be less information for some ecosystem services than others – for example, cultural services such as health benefits can be difficult to map. In such cases you may have to accept that the information will be incomplete and the make best use of what is available, or be proactive in collecting new information where it does not exist. This can often present opportunities to involve the wider public – for example, organising engagement activities to understand sense of place, or involving volunteers in data gathering, such as species or habitat surveys.





## Further resources:

- **CEH Information Gateway:** The Centre for Ecology & Hydrology (CEH), the UK's Centre of Excellence for integrated research in terrestrial and freshwater ecosystems, hosts the Environmental Information Data Centre, the Natural Environment Research Council data centre for terrestrial and freshwater sciences. This brings together wide-ranging nationally-important datasets and expertise in managing diverse types of environmental data.  
[www.gateway.ceh.ac.uk/home](http://www.gateway.ceh.ac.uk/home)  
[www.nerc.ac.uk](http://www.nerc.ac.uk)
  
- **Ecosystems Knowledge Network:** Has compiled information about various tools to help in ecosystem service mapping.  
[ecosystemsknowledge.net/about/themes/mapping](http://ecosystemsknowledge.net/about/themes/mapping)
  
- **National Character Areas:** National Character Areas (NCAs) divide England into 159 distinct natural areas, each defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity.  
[www.naturalengland.org.uk/publications/nca](http://www.naturalengland.org.uk/publications/nca)
  
- **Magic:** The MAGIC website provides authoritative geographic information about the natural environment from across government. It is presented in an interactive map which can be explored using various mapping tools that are included.  
[www.natureonthemap.naturalengland.org.uk](http://www.natureonthemap.naturalengland.org.uk)
  
- **BESS Ecosystem Service Mapping Gateway:** The 'Ecosystem Service Mapping Gateway', developed by the NERC Biodiversity and Ecosystem Services (BESS) Directorate, with funding from Natural England, brings together information on the growing number of projects concerned with mapping ecosystem service delivery at the landscape level. It provides an interactive, searchable, map-based facility to explore the wealth of projects that are currently being conducted in this field.  
[www.nerc-bess.net/index.php/bess-news/114-new-ecosystem-service-mapping-gateway](http://www.nerc-bess.net/index.php/bess-news/114-new-ecosystem-service-mapping-gateway)



## Fact sheet 6: Understanding drivers for change



Drivers for change are the natural and human-made processes that cause landscapes and ecosystems to change. Such drivers often put pressure on the landscape and ecosystem services, but they can also present opportunities and bring about positive changes. Below are the more common drivers for change that may affect your place.

### ..... Direct drivers

Direct drivers are those which directly impact on the landscape and ecosystem services:

- **Land use conversion** – where human-made changes affect natural habitats for example the conversion and intensification of natural habitats to farmland or the development of the coast.
- **Overexploitation of natural resources** – occurs when people demand too much from the landscape and over use natural resources too quickly, this includes the overexploitation of marine fish, timber harvesting and water use.
- **Air and aquatic pollution** – this includes chemicals and harmful nutrients such as nitrogen, sulphur and phosphorus entering ecosystems from sources such as agricultural fertilisers and pesticides or rainwater.





- **Climate change** – changes to the climate can have significant effects on the landscape, for example, they can affect where and how well plants and animals can thrive, the abundance of harmful pests and diseases, and affect water management by causing increased incidences of flooding or water shortages. More information about considering climate change is provided later.
- **Invasive species** – species which are not native to the UK can spread quickly and aggressively, often to the detriment of native species. They are thought to have negative impacts on the environment by spreading diseases; changing biodiversity; changing landscape character; or by damaging livestock and crops.

## ..... Indirect drivers

Indirect drivers do not directly impact on the landscape but have an influence on the direct drivers:

- **Demographic changes** – an increasing population increases demand for food, fibre, water and energy, and for land to build homes.
- **Economic changes** – can affect land prices, increase or decrease the demand for development or money available for conservation.
- **Socio-political changes** – these have a strong relationship with economic and cultural drivers: e.g. agricultural subsidies that promote increased agricultural production could affect ecosystem services.
- **Cultural and behavioural changes** – this includes the values and beliefs shared by people which can influence decision making. Changing consumption patterns can have a particularly significant effect on the landscape.
- **Advances in science and technology** – such advances can improve our understanding of landscapes or lead to new products or methods, for example, increased mechanisation in agriculture.



## Climate change

It is now accepted that whilst reducing greenhouse gas emissions is still vitally important to reduce the extent of climate change, there will be some degree of climate change as a result of past emissions. There is an urgent need for partnerships to adapt to this inevitable change. Adapting will not only benefit ecosystems, but will also help society to adapt to some of the impacts we are experiencing, such as increased flooding in winter or water shortages in summer.

Climate change could have significant impacts on ecosystems and their services and the long-term impacts for each species cannot be known for certain. This does not mean that we cannot plan for climate change until we know what the impacts will be: by then it will be too late to act. There are some broad principles identified in the Defra publication, 'England Biodiversity Strategy Climate Change Adaptation Principles'<sup>20</sup> which can be integrated into action plans:

- Maintain and increase ecological resilience
- Accommodate change and accept it is inevitable
- Develop integrated actions across all partners
- Develop knowledge and plan strategically

## ..... Resilience and vulnerability

Different ecosystems will respond differently to drivers for change depending on their resilience or vulnerability. Ecosystem resilience is the capacity of an ecosystem to recover from severe disturbance or change and return to its pre-disturbed state with no alteration to structure or outputs. Resilient ecosystems are able to maintain taxonomic composition, structure, ecological functions, and process rates.<sup>21</sup> Vulnerability is the extent that pressures will damage or harm the system. More vulnerable ecosystems are less able to manage change, less resilient to stresses and have a reduced adaptive capacity.

<sup>20</sup> Defra (2009) *England Biodiversity Strategy Climate Change Adaptation Principles*, London. Available at: [www.gov.uk/government/publications/england-biodiversity-strategy-climate-change-adaptation-principles](http://www.gov.uk/government/publications/england-biodiversity-strategy-climate-change-adaptation-principles)

<sup>21</sup> JNCC (n.d.) Ecosystem [online] Available at: [jncc.defra.gov.uk/page-6378-theme=default](http://jncc.defra.gov.uk/page-6378-theme=default)



## Further resources:

- **Defra:** England Biodiversity Strategy – Climate Change Adaptation Principles.  
[www.gov.uk/government/publications/england-biodiversity-strategy-climate-change-adaptation-principles](http://www.gov.uk/government/publications/england-biodiversity-strategy-climate-change-adaptation-principles)
  
- **Joint Nature Conservation Committee (JNCC):**  
The public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation.  
[jncc.defra.gov.uk](http://jncc.defra.gov.uk)
  
- **Natural England:** England's Natural Environment in 2060 – issues, implications and scenarios.  
[publications.naturalengland.org.uk/publication/31030](http://publications.naturalengland.org.uk/publication/31030)
  
- **Natural England:** Global Drivers of change to 2060.  
[publications.naturalengland.org.uk/publication/48004](http://publications.naturalengland.org.uk/publication/48004)
  
- **Natural England:** Natural England's Development of national scale biodiversity climate change vulnerability assessment.  
[www.naturalengland.org.uk/ourwork/climateandenergy/climatechange/vulnerability/nationalvulnerabilityassessment.aspx](http://www.naturalengland.org.uk/ourwork/climateandenergy/climatechange/vulnerability/nationalvulnerabilityassessment.aspx)
  
- **Natural England:** Natural England's National biodiversity climate change vulnerability model.  
[publications.naturalengland.org.uk/publication/5069081749225472](http://publications.naturalengland.org.uk/publication/5069081749225472)
  
- **UK National Ecosystem Assessment:** The UK National Ecosystem Assessment (UK NEA) was the first analysis of the UK's natural environment in terms of the benefits it provides to society and continuing economic prosperity. One of the aims of the UK NEA was to assess the status and trends of the UK's ecosystems and describe the key drivers of change.  
[uknea.unep-wcmc.org](http://uknea.unep-wcmc.org)



## Fact sheet 7: Generating publicity

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Generating publicity for the partnership and its work helps to raise the public profile of the partnership and encourage greater participation. There are three stages at which publicity is best used: to publicise the creation of the partnership and invite people to join; to promote events being and; to inform people of the work of the partnership, particularly the outcomes of any consultation events and actions which result from such collaboration.





## ..... Promoting the partnership

Initially, publicising that the partnership is being formed encourages interested parties to come forward to join the partnership, helping to develop the necessary representative mix of stakeholders. Publicity at this stage helps raise awareness of the partnership and its activities to those who may not want to join. This initial promotion creates an opportunity for information and existing research to be shared with the partnership and can generate support for partnership activities. Contacting existing groups is a good way to publicise a partnership, however, be careful not to focus on existing groups at the exclusion of other stakeholders.

## ..... Promoting events

Good promotion of events and activities is essential to recruitment. Poor promotion will inevitably limit involvement. When promoting events, consider how best to target the audiences described in your audience development plan. Some things to think about are outlined below:

- Use local newspapers, newsletters and other widely distributed media to recruit community members.
- Posters, leaflets and flyers are all good ways of promoting activities. These can be placed in relevant public locations such as leisure centres, libraries, council buildings, places of worship and schools.
- Make announcements at existing community events or venues e.g. Parish meetings, community groups or schools.
- If your event is targeted at a specific group then focus your publicity at this group. For example, if you wish to target people with an interest in nature conservation, contact relevant local groups such as volunteer conservation groups or ornithological organisations.

- Interested groups may have websites or newsletters where announcements can be posted.
- Consider the age range of people you wish to contact and recruit – some media e.g. using the internet or email may exclude groups like older people and children who may have limited access to such media. A more traditional approach may be appropriate for generating interest from these groups.

## ..... Publicising results

The results of an event or consultation are not always shared with participants, or more widely, even when they are used to inform future work or strategies. Sharing findings promotes good will and ongoing involvement and interest in a partnership. Not sharing findings can make participants feel that the partnership is a one way process where they are uncertain they have been listened to or included. Results should be made available so that interested parties can request a copy of a report. Results can be more widely shared by using similar approaches to the publicity used to promote an event. A newsletter article, posters or, if appropriate, a presentation or exhibition in a public place such as a community centre can provide people with feedback that will generate ongoing interest and support for the partnership and its work.

## ..... Preparing publicity material

Some basic good practice for preparing publicity materials includes:

- Ensure that the publicity text is brief and not over detailed.
- Use non-technical language that is plain English and easy to understand. If necessary, a link to a website or contact number can be given should people want more information.
- Make the design of any poster, report or flyer simple and engaging so that it can be easily read and is eye catching.
- Use a large enough type size so that the text is easy for everybody to read, including those with impaired vision.





- Use a plain font that is clear to see rather than an overly decorative font.
- Make sure materials are not overly 'busy' with images and text.

### Further resources:

- **Heritage Lottery Fund:** Article about publicity by Heritage Lottery Fund, primarily for their grant holders. [www.hlf.org.uk/granholders/Promotingyourproject/announceyourgranttothedia/Pages/Howtoannounceyourgranttoedia.aspx#.UvJgN\\_s8rF4](http://www.hlf.org.uk/granholders/Promotingyourproject/announceyourgranttothedia/Pages/Howtoannounceyourgranttoedia.aspx#.UvJgN_s8rF4)



## Fact sheet 8: Data sources

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The following table provides information of potential datasets that can help to identify particular ecosystem services.





<b>Ecosystem Service</b>	<b>Potential Data Sets</b>
<b>→ Provisioning</b>	
<b>Food</b>	<ul style="list-style-type: none"><li>• Agricultural Land Classification <a href="http://data.gov.uk/dataset/agricultural-land-classification-grades-post-19881">http://data.gov.uk/dataset/agricultural-land-classification-grades-post-19881</a></li><li>• DEFRA – Agricultural census – No. Ewes, Cattle density <a href="http://www.statistics.gov.uk/hub/agriculture-environment/agriculture/farm-outputs/index.html">www.statistics.gov.uk/hub/agriculture-environment/agriculture/farm-outputs/index.html</a></li></ul>
<b>Timber</b>	<ul style="list-style-type: none"><li>• Forestry Commission data e.g. woodland over 10 Ha <a href="http://www.forestry.gov.uk/datadownload">www.forestry.gov.uk/datadownload</a></li><li>• Data may be available from local Woodland Trusts</li></ul>
<b>Biomass</b>	<ul style="list-style-type: none"><li>• Energy Crops Scheme data <a href="http://www.naturalengland.org.uk/publications/data/default.aspx">www.naturalengland.org.uk/publications/data/default.aspx</a></li></ul>
<b>Fibre – wool</b>	<ul style="list-style-type: none"><li>• Local knowledge – e.g. farmers</li></ul>
<b>Water availability</b>	<ul style="list-style-type: none"><li>• Water companies may have data for your area</li><li>• Environment Agency may have data or proxy data</li><li>• Environment Agency Aquifers dataset <a href="http://apps.environment-agency.gov.uk/wiyby/default.aspx">http://apps.environment-agency.gov.uk/wiyby/default.aspx</a></li></ul>

Ecosystem Service	Potential Data Sets
→ Regulating	
Climate regulation	<ul style="list-style-type: none"> <li>• Department of Energy and Climate Change UK greenhouse gas emissions <a href="http://www.gov.uk/government/collections/uk-greenhouse-gas-emissions">www.gov.uk/government/collections/uk-greenhouse-gas-emissions</a></li> <li>• National Atmospheric Emissions Inventory (NAEI) Defra Map of carbon emissions <a href="http://naei.defra.gov.uk/data">http://naei.defra.gov.uk/data</a></li> <li>• National Atmospheric Emissions Inventory (NAEI) Defra Methane and other emissions data <a href="http://naei.defra.gov.uk/data">http://naei.defra.gov.uk/data</a></li> </ul>
Carbon storage	<ul style="list-style-type: none"> <li>• Natural England The Peat Project, peat mapping <a href="http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/englands/peat.aspx">www.naturalengland.org.uk/ourwork/conservation/biodiversity/englands/peat.aspx</a></li> <li>• Soils data <a href="http://www.landis.org.uk/data/index.cfm">www.landis.org.uk/data/index.cfm</a></li> </ul>
Regulating soil erosion	<ul style="list-style-type: none"> <li>• Soil mapping <a href="http://www.landis.org.uk/data/index.cfm">www.landis.org.uk/data/index.cfm</a></li> <li>• Catchment Sensitive Farming initiatives may be able to assist here – speak to the local Catchment Sensitive Farming Officer</li> </ul>
Regulating soil quality	<ul style="list-style-type: none"> <li>• BGS soil maps <a href="http://www.bgs.ac.uk/nercsoilportal/maps.html">www.bgs.ac.uk/nercsoilportal/maps.html</a></li> <li>• Soils information has been gathered for the National Character Area profiles <a href="http://www.naturalengland.org.uk/publications/nca/">www.naturalengland.org.uk/publications/nca/</a></li> </ul>





<b>Ecosystem Service</b>	<b>Potential Data Sets</b>
<b>Regulating water quality</b>	<ul style="list-style-type: none"><li>• Water companies may have data for your area</li><li>• Environment Agency data <a href="http://apps.environment-agency.gov.uk/wiyby/default.aspx">http://apps.environment-agency.gov.uk/wiyby/default.aspx</a></li></ul>
<b>Regulating water flow</b>	<ul style="list-style-type: none"><li>• Environment Agency Flood Risk Maps <a href="http://apps.environment-agency.gov.uk/wiyby/default.aspx">http://apps.environment-agency.gov.uk/wiyby/default.aspx</a></li><li>• Catchment Flood Risk management plans may exist locally</li></ul>
<b>Pollination</b>	<ul style="list-style-type: none"><li>• NBN Gateway <a href="https://data.nbn.org.uk/Datasets">https://data.nbn.org.uk/Datasets</a></li></ul>
<b>Pest regulation</b>	<ul style="list-style-type: none"><li>• Non-Native Species Secretariat <a href="http://www.nonnativespecies.org/home/index.cfm">www.nonnativespecies.org/home/index.cfm</a></li></ul>
<b>Regulation of coastal flooding and erosion</b>	<ul style="list-style-type: none"><li>• Environment Agency National Coastal Erosion Risk Mapping <a href="http://apps.environment-agency.gov.uk/wiyby/default.aspx">http://apps.environment-agency.gov.uk/wiyby/default.aspx</a></li><li>• Shoreline Management Plans may exist locally</li></ul>

Ecosystem Service	Potential Data Sets
→ Cultural	
Sense of place/ inspiration	<ul style="list-style-type: none"> <li>National Park and AONB Management Plans have good summaries of landscape character</li> <li>Landscape Character Assessments <a href="http://www.naturalengland.org.uk/ourwork/landscape/englands/character/lcn/nationaldatabase/default.aspx">www.naturalengland.org.uk/ourwork/landscape/englands/character/lcn/nationaldatabase/default.aspx</a></li> <li>National Character Area <a href="http://www.naturalengland.org.uk/publications/nca/default.aspx">www.naturalengland.org.uk/publications/nca/default.aspx</a></li> <li>Monitor of Engagement with the Natural Environment (MENE) <a href="http://www.naturalengland.org.uk/ourwork/evidence/mene.aspx">www.naturalengland.org.uk/ourwork/evidence/mene.aspx</a></li> <li>Information may be held locally e.g. local history groups/civic societies</li> </ul>
Sense of History	<ul style="list-style-type: none"> <li>Nationally designated sites e.g. Registered Parks and Gardens and Conservation Areas <a href="http://www.magic.gov.uk">www.magic.gov.uk</a></li> <li>Historic Environment Records (HERs) held by local authorities</li> <li>Historic Environment regional research frameworks, where available, from local authority archaeological officers</li> <li>English Heritage Heritage at Risk information <a href="http://www.english-heritage.org.uk/caring/heritage-at-risk">www.english-heritage.org.uk/caring/heritage-at-risk</a></li> <li>Historic Landscape Characterisations may be available locally</li> <li>English Heritage datasets <a href="http://services.english-heritage.org.uk/NMRDataDownload">http://services.english-heritage.org.uk/NMRDataDownload</a></li> <li>Information e.g. County Archives and that held by local history and community groups</li> </ul>







<b>Ecosystem Service</b>	<b>Potential Data Sets</b>
Tranquillity	<ul style="list-style-type: none"><li>• CPRE <a href="http://www.cpre.org.uk/what-we-do/countryside/tranquil-places">www.cpre.org.uk/what-we-do/countryside/tranquil-places</a></li></ul>
Recreational opportunities	<ul style="list-style-type: none"><li>• Sustrans <a href="http://www.sustrans.org.uk">www.sustrans.org.uk</a></li><li>• Rights of Way information will be available locally</li><li>• Monitor of Engagement with the Natural Environment (MENE) <a href="http://www.naturalengland.org.uk/ourwork/evidence/mene.aspx">www.naturalengland.org.uk/ourwork/evidence/mene.aspx</a></li><li>• Evidence on health benefits <a href="http://www.naturalengland.org.uk/ourwork/enjoying/health/default.aspx">www.naturalengland.org.uk/ourwork/enjoying/health/default.aspx</a></li></ul>



## Fact sheet 9: Funding advice



**Core funding for the partnership may provide sufficient resources to deliver actions. In many circumstances additional funding will be required. When this is the case the first step is to consider how the partnership's or partners' existing funding can be better utilised or allocated.**

### ..... Making the most of what you've got



A major benefit of working in partnership is being able to pool funds and use money more efficiently. Existing objectives between different partners will sometimes align, making it possible to combine funding to deliver shared objectives. Sharing costs in this way helps to save money, for example, by making more efficient use of contractor's time or materials or through more efficient project management.



You may consider identifying existing funding streams and considering how these can provide funding for new actions. In some cases funding may already be allocated for some of the partnership's actions. In other cases it may be possible to extend or reallocate funding to deliver new actions. For example, there may be opportunity to help more farms be included in agri-environment schemes, or it may be possible to reallocate under-spend from a grant to a relevant new project or action.





## ..... Finding additional funding

- Many partnerships will be aware of funding grants such as National Lottery funding. There are currently 12 Lottery funders, each with different grants and criteria who independently decide which projects are successful. This includes the Heritage Lottery Fund, Big Lottery Fund and Arts Council England. It is worth noting that the Heritage Lottery Fund's Landscape Partnership scheme actively encourages partnerships to deliver the ecosystem approach. The National Lottery's funding finder can help partnerships identify the best grant for them.
- Identifying potential sources of funding outside traditional environmental funding streams can make partnerships more innovative. For example, actions to improve the health of local people could consider grants with a health focus. Where under-represented groups, such as black minority ethnic groups or young people, are engaged through partnership projects there may be specific funding aimed at encouraging the greater participation of these groups. Projects that involve art to engage people could source funding through art based funders. Grant finding databases/websites may help partnerships to identify new sources of funding.
- Being creative when looking for funds and not focussing solely on traditional grants can help to make partnerships more financially sustainable. Consider how the partnership can generate funds through innovative schemes, such as 'donate a tree', 'adopt a species', 'sponsor an acre of restoration' or wedding/Christmas gift lists. You could also organise fund raising events for local businesses or the local community.

- Visitor payback schemes are an increasingly popular way of generating funds. This involves asking visitors to make a small contribution to management. This contribution can be made through local businesses which people visit such as hotels, caravan parks, guest houses, or other tourism businesses. The case study on [page 70](#) provides an example of this in practice.
- Engaging with local businesses will possibly be part of your audience development plan. As part of this engagement, local businesses may be willing to provide funding or make donations for projects. For example, as part of their corporate social responsibility, by involving them in business payback volunteering projects. You may explore opportunities to establish business partnerships or fee paying membership groups, with the purpose of marketing their businesses through joint working.
- Consider how payment can be made for the provision of ecosystem services. See below for further information about Payments for Ecosystem Services.





## ..... Payments for Ecosystem Services

Payments for Ecosystem Services (PES) involves beneficiaries of ecosystem services making payments to land managers for the provision of a service or services over and above what the land managers would otherwise have provided without payment. A PES scheme recognises that a land manager is providing a service that can be 'sold' to its beneficiaries. Beneficiaries can include businesses, communities, visitors or government, and may include more than one beneficiary.

### Benefits of a PES scheme<sup>22</sup>:

- **For businesses:** an opportunity to meet environmental obligations, demonstrate corporate social responsibility, reduce costs and market products.
- **For conservation organisations:** new revenue streams to pay for conservation projects.
- **For landowners/land managers:** diversification of income, opportunities to restore or improve degraded land.
- **For policy community:** a supplement to public funding to achieve policy goals.
- **For wider society:** a means to secure ecosystem services for future generations and opportunity to learn about and invest in the natural environment.

<sup>22</sup> Reed, M. (2013) *Payment for Ecosystem Services: what does it mean for the future of our environment?*, Living With Environmental Change Policy and Practice Note 01.

## Key steps for a PES scheme:

'Payments for Ecosystem Services: A Best Practice Guide' published by Defra in 2013,<sup>23</sup> suggests five broad steps for developing a PES scheme:

1. Identify a saleable ecosystem service and prospective buyers and sellers
2. Establish PES scheme principles and resolve technical issues
3. Negotiate and implement agreements
4. Monitor, evaluate and review implementation
5. Consider opportunities for multiple-benefit PES

<sup>23</sup> Smith, S., Rowcroft, P., Everard, M., Couldrick, L., Reed, M., Rogers, H., Quick, T., Eves, C. and White, C. (2013). *Payments for Ecosystem Services: A Best Practice Guide*, Defra, London.







## Key principles of a PES scheme:

The best practice guide identifies seven key principles, which should underpin any PES scheme, although it is recognised that aiming for all seven principles to be met may create unrealistic expectations:

1. **Voluntary:** stakeholders enter into PES agreements on a voluntary basis;
2. **Beneficiary pays:** payments are made by the beneficiaries of ecosystem services (individuals, communities and businesses or governments acting on behalf of various parties);
3. **Direct payment:** payments are made directly to ecosystem service providers (in practice, often via an intermediary or broker);
4. **Additionality:** payments are made for actions over-and-above those which land or resource managers would generally be expected to undertake (note that precisely what constitutes additionality will vary from case-to-case but the actions paid for must at the very least go beyond regulatory compliance);
5. **Conditionality:** payments are dependent on the delivery of ecosystem service benefits. In practice, payments are more often based on the implementation of management practices which the contracting parties agree are likely to give rise to these benefits;
6. **Ensuring permanence:** management interventions paid for by beneficiaries should not be readily reversible, thus providing continued service provision; and
7. **Avoiding leakage:** PES schemes should be set up to avoid leakage, whereby securing an ecosystem service in one location leads to the loss or degradation of ecosystem services elsewhere.

## Other important aspects of a PES scheme include:

- **Working across boundaries:** the landscape-scale is essential for the success of PES schemes, as ecosystems cross administrative and ownership boundaries.
- **Stakeholder engagement:** to identify ecosystem services; determine who may be interested in a PES scheme; establish how people will be affected; and negotiate trade-offs.
- **Developing a marketing strategy:** establishing the 'sales pitch' for the ecosystem services, the target market, the audiences (buyers and sellers) and the relevant messages for each audience.
- **Recognising multiple benefits:**
  - Bundling – a single buyer, or consortium of buyers, pays for a package of ecosystem services that arise from the same area of land or body of water.
  - Layering – often referred to as 'stacking', different buyers pay separately for each of the ecosystem services that arise from the same area of land or body of water.
  - Piggy-backing – not all of the ecosystem services generated from a single parcel of land or body of water are sold to buyers. Instead, a single service is sold, whilst the other services provided by the land management are offered to users free of charge.
- **Coordination:** by an independent, trusted broker such as a conservation organisation, social enterprise or farm advisor will benefit PES schemes.
- **Establishing the baseline:** the baseline established in section 2 will help to accurately monitor the PES scheme and indicate the level of additionality being delivered, providing reassurances to buyers.





## Further resources:

- **Defra:** Developing the potential for Payments for Ecosystem Services: an Action Plan.  
[www.gov.uk/government/publications/payments-for-ecosystem-services-pes-action-plan](http://www.gov.uk/government/publications/payments-for-ecosystem-services-pes-action-plan)
- **Defra:** Payments for Ecosystem Services: A Best Practice Guide.  
[www.gov.uk/government/publications/payments-for-ecosystem-services-pes-best-practice-guide](http://www.gov.uk/government/publications/payments-for-ecosystem-services-pes-best-practice-guide)
- **Ecosystems Knowledge Network:** A resource for anyone wanting to share knowledge or learn about the practical benefits of the ecosystem approach.  
[ecosystemsknowledge.net/resources/tools-guidelines/pes](http://ecosystemsknowledge.net/resources/tools-guidelines/pes) and [ecosystemsknowledge.net/2013/07/19/payments-for-ecosystem-services-workshop-video-recordings-available-on-line](http://ecosystemsknowledge.net/2013/07/19/payments-for-ecosystem-services-workshop-video-recordings-available-on-line)
- **National Lottery Funding:** National Lottery money is given out by 12 independent organisations, each with specialist knowledge of their sectors.  
[www.hlf.org.uk/Pages/Home.aspx](http://www.hlf.org.uk/Pages/Home.aspx)  
[www.lotterygoodcauses.org.uk/funding-finder](http://www.lotterygoodcauses.org.uk/funding-finder)
- **Defra/Natural England:** Quick, T., Reed, M., Smyth, M., Birnie, R., Bain, C., Rowcroft, P and White, A (2013) *Developing place-based approaches for Payments for Ecosystem Services*, URS London.



## Fact sheet 10: Valuation



**Many of the benefits that people receive from the natural environment have a market value and are traded, such as food and timber. Others, which can be just as important to human wellbeing do not have a current market value and it can be considered that these are used for 'free'. These other benefits are therefore often ignored in decision making.**

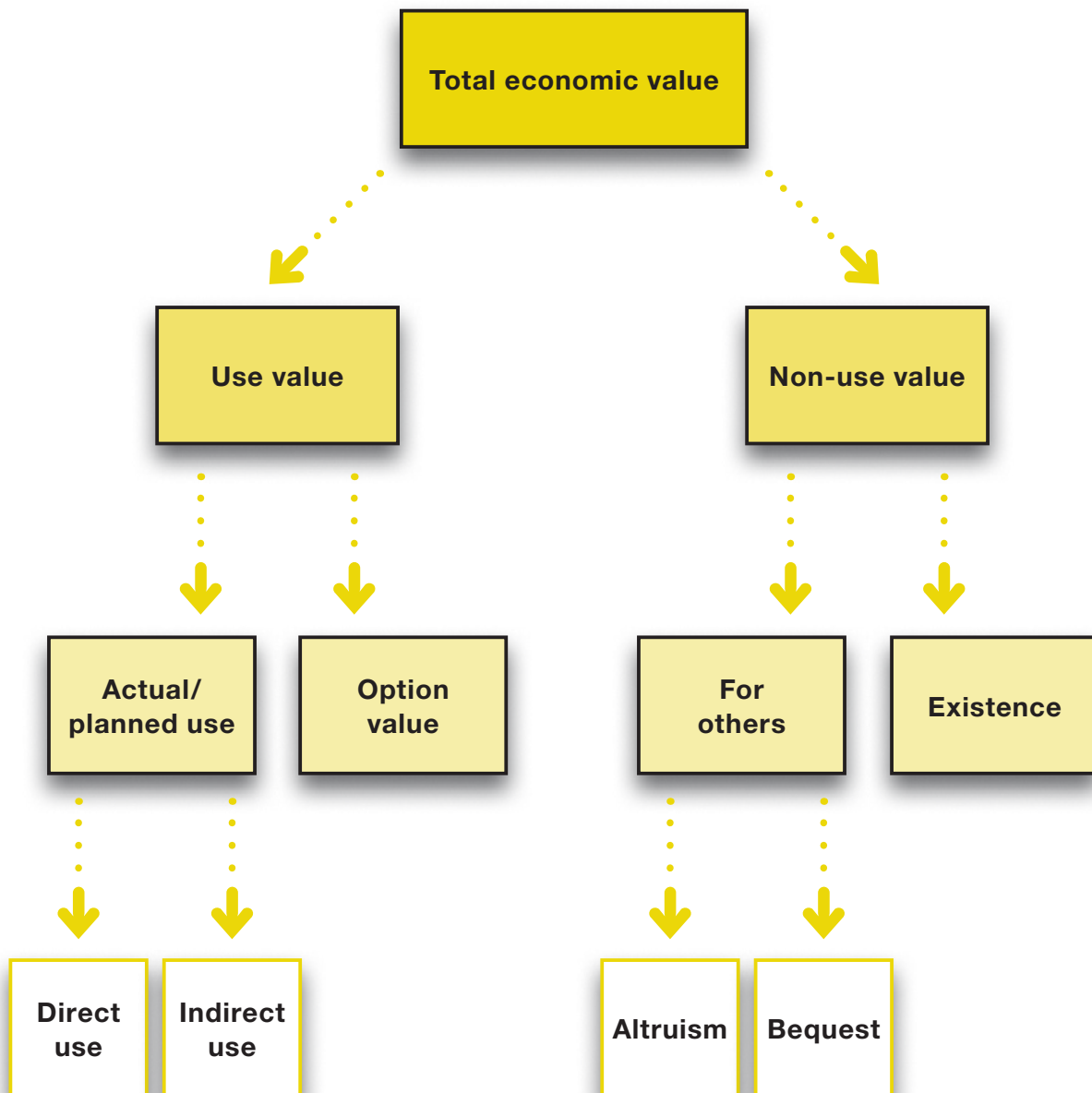
The value aspect of the ecosystem approach seeks to address this imbalance and take account of all benefits in decision making, not just those with a market value. It is also important to remember that values are not just about money. The non-monetary values that people place on ecosystem services can be just as important for decision making.





# ..... Total Economic Value (TEV) Framework

The Total Economic Value (TEV) Framework, developed by The Economics of Ecosystems and Biodiversity (TEEB), helps decision makers to value the changes in ecosystem services. It adds together values we derive from using ecosystem services (use values) and intangible human benefits (non-use values). These are shown in the diagram below:



## Use value

- **Direct use value**
  - Wood for timber, pulp and fuel (extractive use).
  - Place to visit, have a picnic (non-extractive use).
- **Indirect use value**
  - Ecological processes that give rise to ecosystem services and benefits. For example, prevent loss of soil, nutrients, reduce flooding and improve water quality.
- **Option value**
  - The tree is preserved for some form of unforeseen use in the future.

## Non-use value

- **Altruistic value**
  - Knowing others can enjoy the tree.
- **Bequest value**
  - Knowing that the tree will be there for future generations.
- **Existence value**
  - Knowing the tree and the services continue to exist.





# ..... The Economics of Ecosystems and Biodiversity (TEEB)

The Economics of Ecosystems and Biodiversity report (TEEB) identifies 3 tiers for valuing the natural environment and informing decision making. All three tiers are useful but demonstrating and capturing value may be beyond the scope of a partnership. Recognising value, however, is essential to the ecosystem approach and can give a valuable baseline for understanding the work of the partnership. Recognising the non-monetary values people ascribe to ecosystem services can be sufficiently useful for informing the decision making process.

## 1. Recognising value

Recognising value involves understanding that the natural environment provides benefits that are valued by people. This means people are able to express their values of a place without putting a monetary value on it. Recognising the things people value in a place is sometimes sufficient for identifying the ecosystem services that are valued. These can then be factored into the decision making process as part of the ecosystem approach.

An initial step in determining value involves community engagement that enables people to understand that different courses of action have implications for themselves and others. This enables them to make an informed judgement about the future and to value changes to ecosystem service provision over time. It is important to consider values spatially: ecosystems can provide multiple benefits to several beneficiaries in different geographic locations, these should be recognised.

Understanding the geographic scale at which the benefits occur is important in recognising their value. Depending on the ecosystem service being provided, benefits exist at different geographic scales: global, national and/or local. For example, carbon storage in a peatland area has global benefit, whilst the provision of places that encourage physical exercise has mainly local benefit.

## 2. Demonstrating value

This uses economic tools such as the Total Economic Value Framework or Cost Benefit Analysis to understand the value of ecosystem services changes. Values are either demonstrated in monetary terms or as ratios over time (e.g. £1 investment in management yields £5 worth of benefit over 20 years), but money does not change hands.

Demonstrating value is useful when done collectively across an ecosystem rather than considering individual services in isolation.<sup>24</sup> It is important to recognise that an area of land or sea provides multiple services which together offer a unique set of benefits. Focusing attention on single ecosystem services can potentially lead to important losses in terms of benefits and opportunities to demonstrate value.

The value of an ecosystem service is site specific and depends on the nature of the land, its use, proximity to beneficiaries and the wealth of these beneficiaries. The actual values of the service therefore vary from one place to another.

If a partnership decides to demonstrate value then it may be worth considering the involvement of environmental economists who are able to employ best practice methods.

## 3. Capturing value

Capturing the value of ecosystem services incorporates the values of ecosystems into decision making through incentives and price signals – market based solutions. It is about changes to the management approach in order to protect or enhance the value of a service.

This is achieved through a number of means e.g. partnership agreements, where those who influence ecosystem service provision form a programme of work that will benefit everybody or; the marketing of products or services based on the premise that they originate from a place that is managed for the benefit of all. Value can be captured by determining who benefits from the service and their willingness to pay for the management of that service.

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<sup>24</sup> JFish, R., Burgess, J., Chilvers, J., Footitt, A., Turner, K. (2011) *Participatory and Deliberative Techniques to support the monetary and non-monetary valuation of ecosystem services: an introductory Guide*. (Defra Project Code: NR0124)





Payments for Ecosystem Services (PES) schemes may result from this, although these depend on a clear understanding that a particular course of action by ecosystem service providers will lead to sustained and positive outcomes for beneficiaries who are paying.

In capturing value, it is important to recognise the future benefits of securing an ecosystem service. Decision making should take full account of the wider social benefits both for current and future generations. Management decisions will often involve trade-offs as any decision or action will affect the services produced, and will create winners and losers. Partnerships should consider where trade-offs may be necessary and make decisions based on their wider objectives and the wider benefits to society.

### Further resources:

- **The Economics of Ecosystems and Biodiversity:** A global initiative focused on drawing attention to the economic benefits of biodiversity including the growing cost of biodiversity loss and ecosystem degradation.  
[www.teebweb.org](http://www.teebweb.org)
- **Ecosystems Knowledge Network:** A resource for anyone wanting to share knowledge or learn about the practical benefits of the ecosystem approach. Valuing ecosystem services is one of the Ecosystem Knowledge Network's learning themes.  
[ecosystemsknowledge.net](http://ecosystemsknowledge.net)
- **Valuing Nature Network:** An interdisciplinary network for valuing biodiversity, ecosystem services and natural resource use.  
[www.valuing-nature.net](http://www.valuing-nature.net)



## Glossary:

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### **Adaptive management**

Regular evaluation of outcomes of a planned course of action, with appropriate response to the findings.

### **Beneficiary**

An individual, community, or business that gains from the benefits provided by ecosystem services.

### **Biodiversity**

Traditionally, this word has been used by nature conservationists to refer to diversity within species, between species, and between ecosystems. However, often it is used in reference to the whole of nature, or for individual species.

### **Ecosystem**

A dynamic complex of plant, animal, and microorganism communities and their non-living environment interacting as a functional unit.<sup>25</sup>

### **Ecosystem services**

The benefits people obtain from ecosystems. These include provisioning services such as the production of food and clean water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on earth. The concept of 'ecosystem goods and services' is synonymous with ecosystem services. Some scientists refer to ecosystem services as the components of nature that are directly enjoyed, consumed, or used in order to maintain or enhance human well-being.<sup>26</sup>

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<sup>25</sup> Chopra, K., Leemans, R., Kumar, P., Simons, H. (eds.) (2005) *Ecosystems and Human Well-being: Policy Responses*, Findings of the Responses Working Group of the Millennium Ecosystem Assessment, Volume 3. Appendix D Glossary. Island Press, Washington, 621 pp.

<sup>26</sup> See the UK National Ecosystem Assessment <http://uknea.unep-wcmc.org/EcosystemAssessmentConcepts/tabid/98/Default.aspx>

## **Ecosystem process**

The product of the interactions between the different plant, animal and micro-organism communities.<sup>27</sup>

## **Geodiversity**

The variety of rocks, minerals, fossils, soils, landforms and natural processes. The diversity of rocks and minerals, which have formed over millions of years, and natural processes have helped to create landform and soil types.<sup>28</sup>

## **Historic environment**

The historic environment is made up of the buildings, monuments, sites and landscapes that reflect our history.<sup>29</sup>

## **Natural assets**

See natural capital.<sup>30</sup>

## **Natural capital**

The elements of nature that produce value (directly and indirectly) to people, such as the stock of forests, rivers, land, minerals and oceans. It includes the living aspects of nature (such as fish stocks) as well as the non-living aspects (such as minerals and energy resources). Natural capital underpins all other types of capital... and is the foundation on which our economy, society and prosperity is built.<sup>31</sup>

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<sup>27</sup> UK NEA (n.d.) *Ecosystems* [online] Available at:  
<http://uknea.unep-wcmc.org/EcosystemAssessmentConcepts/tabid/98/Default.aspx>

<sup>28</sup> Natural England, *Geodiversity* [online] Available at:  
<http://www.naturalengland.org.uk/ourwork/conservation/geodiversity/default.aspx>

<sup>29</sup> Department for Culture, Media & Sport (2013) *Protecting, conserving and providing access to the historic environment in England* [online] Available at:  
<https://www.gov.uk/government/policies/protecting-conserving-and-providing-access-to-the-historic-environment-in-england>

<sup>30</sup> OECD (n.d.) *Glossary of statistical terms* [online] Available at:  
<http://stats.oecd.org/glossary/index.htm>

<sup>31</sup> Natural Capital Committee (2013) *The State of Natural Capital: Towards a framework for measurement and valuation*, First report of the Natural Capital Committee. Available at:  
<http://www.environmentbank.com/files/state-of-natural-capital-report-2013-1.pdf>







### **Proxy data**

Where information does not exist for a variable of interest, proxy data may be used to infer the value. The proxy data must have a close correlation with the variable of interest.

### **Qualitative information**

Information describing the attributes or properties that an object possesses. The properties may be categorised into classes that may be assigned numeric values. However, there is no significance to the values themselves; they simply represent attributes of the object concerned.<sup>32</sup>

### **Quantitative information**

Information expressing a certain quantity, amount or range, usually associated with measurement units e.g. hectares, in the case of land cover.<sup>33</sup>

### **Stakeholder**

A person, group or organisation with an interest in a project or partnership, or who affects or can be affected by the partnership's actions.

### **Terms of Reference**

Describe the purpose and structure of a project, committee, meeting, negotiation, or any similar collection of people who have agreed to work together to accomplish a shared goal.

### **Vulnerability**

A measure of the extent to which an system is likely to be damaged or disrupted, on account of its nature or location, by the impact of a particular disturbance.<sup>34</sup>

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<sup>32</sup> OECD (n.d.) *Glossary of statistical terms* [online] Available at: <http://stats.oecd.org/glossary/index.htm>

<sup>33</sup> OECD (n.d.) *Glossary of statistical terms* [online] Available at: <http://stats.oecd.org/glossary/index.htm>

<sup>34</sup> OECD (n.d.) *Glossary of statistical terms* [online] Available at: <http://stats.oecd.org/glossary/index.htm>



# Notes:

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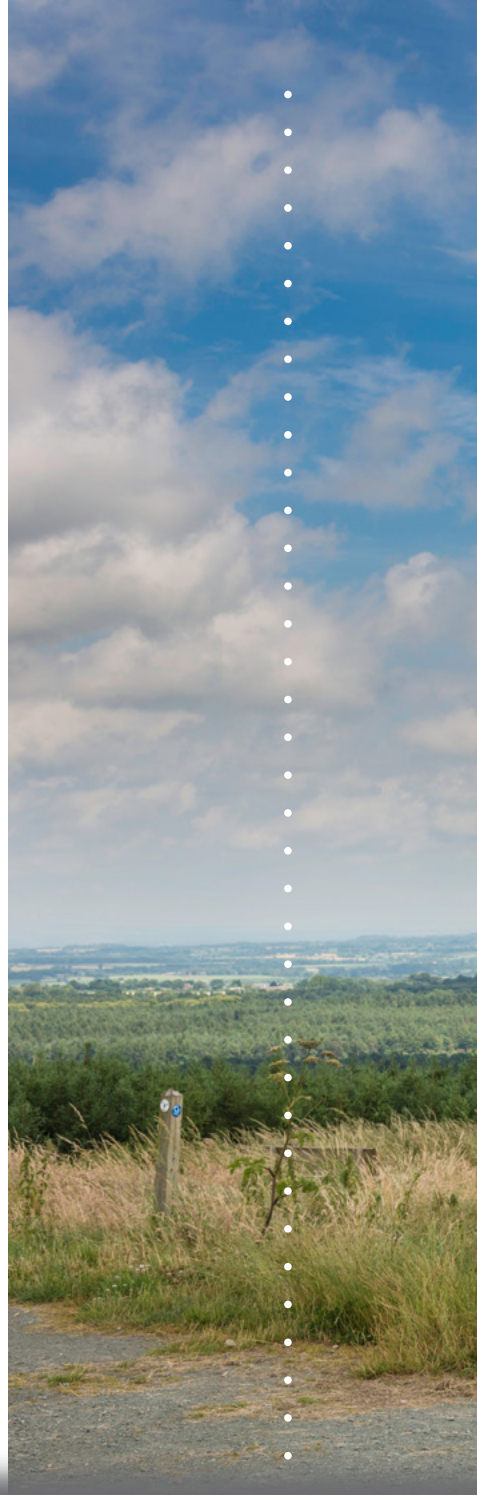




Handwriting practice area with 20 horizontal dotted lines.

Handwriting practice area consisting of 20 horizontal dotted lines.





This handbook was produced for Natural England by Countryside

