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## LOCAL VISIONS GUIDANCE – A REPORT FOR THE WETLAND VISION FOR ENGLAND

### SUMMARY

The 50-year Wetland Vision for England project has set out a vision for the future for freshwater wetlands and maps areas that could potentially be restored and created to protect and enhance wildlife, preserve our wetland heritage and deliver valuable services to society. This is a national view shared and promoted by the Vision partnership. Delivery of this shared vision will heavily rely on projects and action at the local and regional level.

This guidance is aimed at local practitioners who are developing their own wetland visions. We hope that by signposting information and highlighting the key issues we have faced, we may help those seeking to create a new local vision or involved with existing projects. We have drawn on collective experiences and lessons learned from using data and maps, to pass on knowledge about where to access information, learn about further mapping tools and approaches and how to use the Wetland Vision toolkit.

The guidance also describes how the Wetland Vision can help at the local level through providing support and national backing to partnerships on the ground and by recognising the value of local wetland visions. We have also worked to raise awareness about the importance of a holistic view, the wider benefits of wetlands and the need to protect and enhance them for the future.

This is part of the suite of material within the Wetland Vision toolkit available on the [project website](#) and through a CD-ROM.

### WHY IS A HOLISTIC VIEW OF WETLANDS AND WETLAND LANDSCAPES IMPORTANT?

#### Working with others on common objectives

Wetlands can offer a multitude of benefits to society. The potential for the delivery of a wide range of benefits should be considered at the outset, as there may be opportunities for working on common objectives with others.

For example, wetland landscapes are generally rich in archaeology and history, containing a greater range of materials than is often found on 'drier' sites, preserved due to waterlogged conditions. Early consultation with historic environment colleagues provides an opportunity to secure a sustainable long-term future for these fragile resources, and avoid or mitigate any potential damage that wetland restoration or creation or land management practices might otherwise incur. Additionally, the inclusion of heritage elements within wetland projects could generate additional funding, educational or tourism interest in these sites for example, increasing the perceived cultural value.

#### The wider benefits

Wetlands can generate income and offer socio-economic value through providing sustainable sources of building materials such as thatching reed, livestock grazing and improved fish stocks. They can have great amenity value for tourism and recreation, providing accessible greenspace to promote healthy exercise amongst local communities, and an important educational resource. Other benefits range from water purification, carbon storage, nutrient cycling and preservation of soil structure and fertility, to those relating to cultural and spiritual value.

It is important to raise awareness of these wider benefits to people, as wetlands are more likely to be sustained into the future if they are perceived as offering value to society. Learn more about the benefits from wetlands in the [Millennium Ecosystem Assessment report](#) and refer to the [Case Study of Ecosystem Services](#) and how they have been expressed by local visions.

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## WETLAND VISIONING - WHAT IS THE NATIONAL VISION?

The 50-year Wetland Vision sets out joint aspirations between English Heritage, the Environment Agency, Natural England, RSPB and The Wildlife Trusts for a future where wetlands are a significant feature of the landscape in which wildlife can flourish, heritage is safeguarded and people can enjoy quiet recreation.

The Wetland Vision is captured in a toolkit that includes:

- A **Wetland Vision Advocacy Report** outlining the Vision and the next steps to take
- A series of national **Wetland Vision Maps** describing potential wetlands and the issues surrounding their creation and restoration
- A **Technical Document** describing the philosophy and thinking behind our approach, which includes in the Annex reports:
  - A **GIS Report**
  - An Ecosystems Services Report
- A dedicated **Wetland Vision Website** and CD-ROM housing the full toolkit

## HOW CAN THE WETLAND VISION HELP AT THE LOCAL LEVEL?

### An Advocacy Tool

The **Wetland Vision Advocacy Report** states the joint ambition of the partnership for our future wetlands. Our approach is designed to guide decision-making and target resources nationally, and offers an advocacy framework for those operating at the local level. Each organisation of the Wetland Vision Partnership has made a long-term commitment to delivering the Vision and making a real difference on the ground. We also recognise the need to work with others to develop and realise our aspirations.

The Wetland Vision partnership therefore offers support and national backing to local visions and invites others to become part of the wider Vision. The Wetland Vision has also worked to raise awareness of the importance of wetlands amongst the wider community, engaging and inspiring a range of stakeholders.

Through a series of agreed actions, the Partnership will:

- Target effort and resources to areas with most wetland potential
- Help secure funding for large-scale habitat creation
- Deliver BAP targets for landscape scale wetland ecosystems
- Raise awareness of the multiple benefits wetlands can offer to society
- Actively promote the importance of wetlands, by providing information and supporting new partnerships locally and nationally.

### Methodology

The Wetland Vision has published a report on the GIS approach taken and the datasets used to create the maps. This was designed to be simple and repeatable for anyone wishing to replicate the methodology at the regional or sub-regional level. Learn more in the **GIS Report**.

### Maps and data

The project has produced **Wetland Vision Maps** to show where freshwater wetlands could potentially be restored and created to protect and enhance wildlife, preserve our wetland heritage and deliver valuable services to society. The maps are one part of a toolkit that shows areas where a range of different wetland habitat types could be restored, and those areas where the most significant wetland archaeology resources are found. They describe a national picture and should be used with further detailed information to identify opportunities at local and regional levels.

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## Best practice and a network of local vision practitioners

Local visions are inspirational and are key to completing the national picture. Across the country, partnerships have already come together to create visions for restoring their local wetlands for the benefit of people, wildlife and the historic environment. Collectively these projects and the vision they embody are incredibly important for turning our national Wetland Vision into reality. Without them, actions to create and restore wetland would be very limited.

The Wetland Vision wants to celebrate and highlight the value of local projects, visions and partnerships, and advocate best practice and local vision networking. Our website holds a [Local visions map](#) and a contacts [database](#) of those visions that are particularly inspirational. Inspiring examples are captured in Case Studies on [The Great Fen Project](#) and the [Lincolnshire Coastal Grazing Marshes Project](#).

### AN OVERVIEW OF BEST PRACTICE IN LOCAL VISIONING

From a review of a suite of local visions across the country, best practice on successful visioning has emerged:-

#### Why are local visions important?

Local visions are important and make a difference because they are:

- Inspirational** by having a visionary aim and achievable objectives
- Have strong partnership working** through a coordinated approach from the start
- Take a long term view** through a commitment to planning and implementation, considering how future issues may change
- Consider how wetlands fit within the wider landscape** and promote natural processes and hydrological systems within the catchment
- Ecologically robust** and biodiversity focussed in light of climate change
- Offer multiple benefits** to society by considering opportunities for: landscape, access, recreation, the historic environment, socio-economics, flood risk management, water availability and quality, sustainable farming, health, education
- Deliver on the ground** by actively engendering change through partnerships actions which have direct results for wetlands
- Use local expertise**, local knowledge and local skills
- Engage stakeholders** through a transparent and inclusive process
- Capture and share lessons learned** on how to overcome barriers and obstacles

#### Checklist for local practitioners

Do consider...

- Defining your vision clearly and simply
- How to use the Wetland Vision toolkit (reports, maps and data)
- Gaining an overview of other activities across the catchment, and how your vision fits within natural hydrological cycles and processes that operate across it
- The wider benefits wetlands can provide e.g. biodiversity, flood management, recreation, health benefits, education, historic environment and so on
- Engaging local stakeholders, community groups and landowners early on to gain their views
- Developing strong working partnerships with stakeholders at a range of levels
- Talking to historic environment specialists early on to gain guidance on the archaeology and ecology of past landscapes to help define the vision. A desk-based assessment will usually be needed, and field evaluation might also be necessary. Ensure sufficient time and funding is available for these.
- Using the Wetland Vision advocacy material and outputs to inform your strategy
- Contacting other vision projects across the country to seek and share lessons learned
- Using other maps and data available at the local and regional level
- Using models, tools and new ways of working with data
- Setting up links to the scientific community and academic groups
- Seeking advice on funding sources to develop or implement your vision e.g. rural development funds and Heritage Lottery Fund
- Setting up a media and communications plan
- Establishing success criteria and agree on milestones
- Sufficient time for early dialogue and to obtain relevant permissions and consents. Depending on the size and complexity of the scheme these may include: Strategic Flood Risk Assessment/FRA, planning permission, Environmental or ecological Impact Assessment, consultation with airport operators, flood defence consent, licences to impound or abstract water

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## HOW TO USE THE WETLAND VISION TOOLKIT

Learn more about the GIS and data approach taken in the [GIS Report](#).

### **What do the maps and data describe?**

The areas identified within the Wetland Vision 'future potential' map are those considered the highest priority areas for freshwater wetland creation and restoration in England. These primarily indicate where large wetland landscapes could be restored or created, but do not preclude smaller mosaics of wetland habitats in the wider countryside, or wetlands in urban areas as part of sustainable urban drainage schemes. These are difficult to display on a map at this scale.

### **How were the maps and data put together?**

A simple GIS model was developed to generate the maps and data layers for the 'future potential' map. It used topography (Digital Elevation Model/Digital Terrain Model), soil suitability (National Soils Map), relationships to the floodplain (FloodMap) and sub catchments, and was refined through an ecological weightings process based on expert opinion. This enabled us to focus on areas where existing freshwater wetland habitats are today, and where restoration and creation could be of most benefit to important habitats and species in the future.

Priority areas for the historic environment also identify where wetland restoration would help to preserve wetland archaeological and palaeoenvironmental resources; many of these areas match those with ecological priorities. Existing wetland extent was also included in the final data layer, generated from SSSI wetland boundaries and priority BAP habitat inventories.

### **How can the maps and data be used?**

The maps and the underlying GIS data layers can be used in a variety of ways to help inform decisions at the local and regional level. They can be used alongside other information by overlaying GIS layers together for simple analysis e.g. with a feasibility study. They can be incorporated into spatial models and mapping exercises to influence the strategic targeting of resources for wetlands e.g. for agri-environment Higher Level Scheme (HLS) Phase 2 Targeting. Or more simply, the maps could be used in a direct visual comparison against other maps to add value to existing strategies e.g. comparison with regional biodiversity or 'nature' maps contained within Regional Spatial Strategies.

### **How do these maps relate to 'nature' maps developed in some regions across the country?**

The Wetland Vision maps are not intended to replace regional nature maps. The regions have used differing approaches to highlight key areas for biodiversity, green spaces or terrestrial habitat networks.

The Wetland Vision offers a consistent approach for the consideration of wetland habitats and landscapes for the long term, and the incorporation of historic environment interests. These areas may not normally be considered a priority from solely a biodiversity perspective and so could identify areas where new opportunities to deliver multiple gains from wetland restoration could be achieved.

In some cases, the Vision maps can add a level of detail by focusing on freshwater habitats and suggesting areas that meet their specific ecological requirements. The detailed habitat and issue maps can suggest where issues may arise at the local level, for example the location of airport safeguarding zones.

The Wetland Vision maps do not use buffers to identify areas of potential, which some nature maps do. Our maps show sites in the context of their floodplain, or the extent of the sub catchment within which they sit. This could add value to regional maps developed using different methodologies, as an alternative way to express the same priorities, or as a way of checking that key areas and priorities are picked up at the regional level.

The Vision maps as a minimum could be used to facilitate discussions with partners, and others, over wetland specific aspirations across the region.

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### **How specific are the maps and data – can I zoom in to field scale?**

No - Due to the way the data have been developed by comparing many national datasets of varying accuracy and resolution, these data should only be viewed down to the sub catchment level i.e. not field scale. As a guide, you should not express the data at a scale below Ordnance Survey 1:250,000. For the PDF maps, the hardcopy maps should not be presented at greater than A3 size.

### **How do the local datasets and maps fit in?**

The Vision identifies the main areas we should be looking for significant opportunities for wetland creation and restoration. Local data and maps can help by identifying opportunities that may exist outside these areas and by filling in other detail to help set priorities within a wider land-use context.

## **ACCESSING DATA**

### **How to access the maps and data through Wetland Vision Partners**

The Wetland Vision maps are available for download on the website as PDF copies and on CD-ROM. Each Partner organisation has a copy of the final GIS data layers. These are held securely and **are not for public access due to copyright restrictions**. You may wish to contact the Partner organisations to discuss your needs.

### **Consider Intellectual Property Rights and Copyright at the outset**

Data is often owned by private bodies that rely on charging for access to raise revenues. Advice should be sought from organisations supplying the data, and from the original data creators (as these may be different) to agree terms of use and distribution.

Understanding these issues at the outset may affect how you manage the project, the budget allocation (as data provision services can be expensive), who you work with (e.g. partners may have access to data which is otherwise unavailable) and how you work with partners.

### **Make the most of existing data agreements**

Additional benefits of entering local partnerships may be the ability to negotiate access to data and share resources. For example, statutory organisations may have Service Level Agreements with local Biological Records Centres and licences to use Ordnance Survey data.

## **SOURCES OF USEFUL INFORMATION AND DATASETS**

A list of the datasets that contributed towards the Wetland Vision maps and where to access them are listed at the end of this document in [Table 1](#), with further discussion detailed in the [GIS Report](#).

Further resources may be useful in identifying more opportunities to consolidate and fill in the detail of the national Wetland Vision maps. These are outlined below.

### **Local datasets and information sources:**

#### **Digital site boundaries**

- County/Local Wildlife Sites – often held by the County and District Councils or [local Wildlife Trust](#)
- Drainage boards boundary data – held locally by the drainage authority
- [MAGIC](#) – Interactive maps on environmental schemes and designation datasets hosted by statutory organisations. Includes urban settlement areas, agricultural land classification and national park boundaries. Publicly available data and maps.
- [Natural England GIS register](#) holds information on national priority BAP habitat inventories, SSSI, local nature reserves and other designated site boundaries. Publicly available data.

#### **Historic environment and characterisation datasets**

- [Historic Environment Records](#) - details of all known historic environment sites held by the local authority, formerly known as the Sites and Monuments Record
- [Historic Landscape Characterisation](#) by county – provides ‘time depth’ (a series of information through time) on past land use at the field scale

- Local [landscape character data](#), usually held by County Council and within an online database to capture information on Landscape Character Assessments by Local Authority areas
- [English Heritage National Monuments Record](#) holds data on scheduled monuments, listed buildings, historic parks and gardens and World Heritage Sites, as well as other non-designated historic environment assets. Publicly available data

### Land use and typology

- Dudley Stamp 1936 Land Utilisation Survey of England - may be held by County Councils, however not available as digital versions in all areas yet.
- Aerial photography – modern digital georeferenced images may be held locally by County Councils and are now available through [Google Earth](#) and [Google Maps](#). Some county councils may hold earlier aerial photographs from the 1940s.
- [Historical Ordnance Survey](#) maps – from mid 19<sup>th</sup> century are available for purchase from a national series. County Councils may hold subsets electronically.
- Light Detection and Ranging (LIDAR) technique used to accurately map terrain using lasers. [LIDAR](#) coverage for the country is held by the Environment Agency for use in flood risk assessment.
- Ordnance Survey [MasterMap](#) – detailed digital information on geographic OS features. Can be purchased through Ordnance Survey and usually held by most County Councils and statutory organisations.
- [Countryside Information Service \(CIS\)](#) – detailed information at 1km resolution or greater on designated site boundaries, species and vegetation information including soils summary data. Some datasets are publicly available.
- [Countryside Quality Counts](#) – information on the assessment of change in the countryside by Joint Character Area. Useful contextual information to inform sustainable development strategies

### Biodiversity records

- [Local Record Centre](#) - hold records on species and habitats and include: BAP lists, NVC Phase I and II surveys, detailed and updated habitat inventories and SSSI boundaries
- County pond surveys - often held by local pond groups, [Pond Conservation](#) or the Wildlife Trusts
- [Biological Records Centre](#) – holds a series of databases on freshwater and terrestrial species with extensive [data holdings](#).
- [Biodiversity Action Reporting System](#) – UK BAP Database recording all biodiversity action plans across the country.
- [NBN Gateway](#) – Species and habitat survey data. Publicly available data.
- [Nature on the Map](#) – semi-interactive maps describing areas being targeted under agri-environment schemes, and agri-environment delivery on SSSIs. Managed by Natural England.
- [RSPB Data Zone](#) – site boundaries and updated bird records. Publicly available data.

### Statistics

- [UK Statistics Authority](#)
- [Communities and Local Government Planning Statistics](#)
- [Office of National Statistics](#) – holds information on urban settlement boundaries from 1991

### Metrological and Physical Data

- [Centre for Ecology and Hydrology Data](#)
- [British Atmospheric Data Centre](#)
- [Met Office UK Climate and Weather Statistics](#)
- [British Geological Survey Data Services](#)
- [Land Information System \(LandIS\)](#) – the definitive resource for soil datasets by the Cranfield University National Soil Resources Institute which provide a variety of ways of accessing the data and versions of the National Soils Map (NatMap)
- [UK Lakes Database](#)

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## Management Plans and Guidance

- Shoreline Management Plans (SMPs) and Coastal Habitat Management Plans (CHaMPs)– coastal defence planning available from the Environment Agency locally
- [HiFlows UK](#) – advanced hydrological modelling data hosted by the Environment Agency for use with the [Flood Estimation Handbook](#) in modelling for flood defence.
- [Catchment Abstraction Management Strategies](#) (CAMS) – strategies outlining management of abstraction licences and water resources on a 6 year cycle. Held by the Environment Agency.
- [Heritage Management Plans](#) – guidance from Natural England on ‘Conserving Our Heritage’
- [After Minerals](#) – mapping tool, case studies and habitat management advice for habitat restoration and creation following mineral extraction

## Case Studies and Knowledge Sharing Resources

- [River Restoration Centre](#) - provides a [database](#) of case studies on best practice and a [manual](#) of river restoration techniques. Publicly available information.
- [Base for Research, Adaptation, Impacts and News \(the BRAIN\)](#) - Knowledge sharing database on adaptation actions and climate change research. Part of the UK Climate Change Impacts Programme.
- [Water Framework Directive Information Centre](#) – Resource list of useful websites and organisations

## Tools and models

Tools and mapping models express new ways of working with data, examples of which are outlined below. Contact the organisations to learn more about using the tools, adopting the methodologies or accessing the outputs.

**Feasibility Studies** examine potential for wetland creation and restoration using a GIS multi criteria analysis assessing opportunities and constraints and can help inform local visions. The use and application of data vary. A good example is the [NE England Wetland Feasibility Study](#); a partnership project between the Environment Agency and RSPB to identify areas in North East that have the potential for wetlands.

**HLS Phase 2 and JCA Tactical Plans** are [Natural England](#)'s national spatial targeting programmes. The agri-environment Higher Level Scheme Phase 2 Review has used data from the Wetland Vision to inform their core biodiversity targeting maps. Local visions whose areas fall within the targeted HLS areas may qualify for funding opportunities under Environmental Stewardship.

**Habitat Potential Toolkit** has been designed by Roger Catchpole, Senior Specialist Spatial Ecology and Monitoring Team, [Natural England](#). A stakeholder-led, decision support tool that takes into account physical, cultural, socio-economic and ecological factors in the determination of habitat potential. In use by Natural England to assess opportunities at a variety of resolutions right down to the field scale, and allows users to add their own weightings depending on local priorities.

**Wetland hydrogeomorphic classification for Scotland** is a GIS based classification of water bodies based on the probable dependency on surface or groundwater sources. This work for the Scottish and Northern Ireland Forum for Environmental Research ([SNIFFER](#)) offers a methodology to identify specific pressures on wetlands such as abstraction or pollution, and helps to predict how wetland sites may respond to these factors. The approach could be useful for rapid assessments of hydrological, biogeochemical and ecological factors influencing wetlands.

**Strategic Map of Best and Most Versatile Agricultural Land Grades** is a method that forecasts the likely incidence of Grades 1,2 & 3a agricultural land quality. These data are derived from the national Agricultural Land Classification data, Soil Association, Ordnance Survey, climate data and site specific ALC surveys and is held by [Natural England](#).

**Regional Habitat Creation Toolkit** developed to help the [Environment Agency](#) plan and manage habitat creation as part of flood risk management to create compensatory habitat where required. Atkins developed a GIS tool to identify areas either pro-actively at the local or regional scale to

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strategically search for potential locations, or for reactive searches to help assess opportunities that arise on the ground. Search criteria include soils, water availability, urban areas and topography, and generate a list of ranked sites based on these criteria. Most suitable for rapid assessment of large areas, and in active use by the Environment Agency's [Regional Habitat Creation Programme for Southern](#) and Anglian regions.

**Water Demand and Availability for Habitat Creation Project** involved the Environment Agency, English Nature, Forestry Commission, National Trust, RSPB and the Wildlife Trusts in developing a tool for calculating water demand for wetland habitats (coastal and floodplain grazing marsh, fen, reedbed and wet woodland) and potential demand from future initiatives in the Anglian Region.

**Visualisation** is a tool that can help stakeholders understand and generate interest in how future wetland landscapes could look. Landscape visualisations are generated in 3D from GIS databases and have been piloted by the [Broads Authority](#) Research Panel to support decision making. Learn more about visualisation research through the [University of East Anglia](#).

### Useful publications

- Botanical Society of the British Isles (BSBI) use of 'Axiophyte' plant indicators to identify conservation priorities [website] <http://www.bsbi.org.uk/html/axiophytes.html>
- Catchpole, R.D.J. (2006). Planning for biodiversity - opportunity mapping and habitat networks in practice: a technical guide. English Nature Research Report 687
- Halcrow (2003) Futurecoast (3 CD set comprising reports and interactive map browser and two CDs with oblique aerial photography of the shoreline of England and Wales). Produced for Department of Environment, Food and Rural Affairs; CD-ROM
- Lovett, A., Appleton, K. and Jones, A. P. (2008) Landscape visualization: the state of the art, to appear in N. Mount, G. Priestnall, P. Aplin and G. Harvey (eds) Representing, Modelling and Visualizing the Natural Environment: Innovations in GIS 13, CRC Press, Boca Raton, Florida.
- McInnes, R.J. (2007). Integrating ecosystem services within a 50-year vision for wetlands. WWT Report to the England Wetland Vision Partnership.
- Monuments at Risk in England's Wetlands (MAREW) Project. Commissioned by English Heritage from Exeter University [website] [www.ex.ac.uk/marew](http://www.ex.ac.uk/marew)
- RSPB (2001) Futurescapes – Large-scale habitat restoration for wildlife and people. An RSPB Report. <http://www.rspb.org/ourwork/library/reports.asp?view=print&c=&t=Report&r=&start=140&end=145>
- SNIFFER (2007). Wetland hydrogeomorphic classification for Scotland. Final Report to Scottish and Northern Ireland Forum for Environmental Research, Edinburgh, UK. Project Code WFD66.
- Stokes, K. (2008) A Feasibility Study For The Reintroduction Of Water Voles In Cornwall. Cornwall Wildlife Trust, Truro.
- The Wetland Vision partnership (2008) A 50-year Vision for wetlands. Securing a future for nature, people and the historic environment. Annex report: Taking Account Of Aviation Hazards In The Development Of A Wetland Vision For England; CD-ROM
- The Wildlife Trusts (2007) Living Landscapes. A call to restore the UK's battered ecosystems, for wildlife and people. A Report by The Wildlife Trusts. [http://www.wildlifetrusts.org/files/uploaded/download.php?filename=A\\_Living\\_Landscape\(full\).pdf](http://www.wildlifetrusts.org/files/uploaded/download.php?filename=A_Living_Landscape(full).pdf)

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## FREQUENTLY ASKED QUESTIONS

Learn more about background on the reasoning and further information on any of these subjects in the [Technical Report](#).

### **Is there a correlation between ‘future potential areas’ and those where wetlands already exist?**

Yes, future potential areas do include existing freshwater wetlands. The GIS model weights areas more heavily if they already have some wetlands present. The existing wetlands in this context are defined by the national inventories of priority BAP habitat and statutory SSSI network for wetlands. [Find out more about these data on Nature on the Map](#)

### **What if our maps do not match the Wetland Vision ‘future potential’ map?**

It may be that you have defined priority areas at the regional or local level that do not appear on the national overview of future potential. It is worth looking at the detailed habitat maps in the Technical Report as your areas may coincide with one or more of these wider areas.

### **What if our local vision doesn’t feature on the map at all?**

The assumptions used in the GIS model cannot cover all opportunities that may arise on the ground for partnership working, for example, opportunities for wetland creation following mineral extraction at sand and gravel quarries. There may be other opportunities, such as the creation of wetlands as part of sustainable urban drainage schemes, that should be pursued where wetlands can offer benefits to people and be sustainable in the long term. [Nature After Minerals project website](#)

### **What about freshwater wetlands on the coast?**

Although these maps describe potential for freshwater wetlands along the coast, freshwater habitats may not be sustainable in the future due to sea level rise, but there will be opportunities for more naturally functioning mosaics of freshwater and brackish wetlands. The full effects could not be accounted for within the project at a national level. More detail should be available from the outputs from Shoreline Management Plans (SMPs) and Coastal Habitat Management Plans (CHaMPs).

### **How have ‘historic environment priority areas’ been defined?**

These are areas which are most likely to contain well preserved deeply buried archaeological remains, with soil rich in palaeoenvironmental materials (pollen, beetles and diatoms for example). Information was drawn from the English Heritage funded ‘Wetlands GIS Archaeology Project’ CD-ROM, for the [Monuments At Risk In England’s Wetlands \(MAREW\) Report](#). Further information will be available on our [website](#).

### **Why have river channels not been shown on the map?**

River channels have not been included on the maps as they have been considered together with their floodplains as a single unit. Floodplains, both tidal and fluvial, have been integrated into the analysis as a fundamental element to the methodology.

### **Where can I learn more about the Wetland Vision?**

The Wetland Vision is a shared aspiration between the Partners who have individual and joint commitments towards delivering the vision. You may wish to contact the Wetland Vision Partners directly, contact details are available on our [website](#).

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## **CASE STUDY: ECOSYSTEMS SERVICES OF WETLANDS**

Key findings of the Ecosystem Services Report by Rob McInnes, WWT for the Wetland Vision

### **What are Ecosystem Services?**

'Ecosystem services' are defined as the benefits people obtain from ecosystems. These benefits are indispensable for both the natural environment and human well being. These include:

- provisioning services such as food and water;
- regulating services such as regulation of floods, drought, land degradation, and disease;
- supporting services such as soil formation and nutrient cycling; and
- cultural services such as recreational, spiritual, religious, and other non-material benefits

### **Have other local visions expressed Ecosystem Services?**

A review was conducted of six local visions: Great Fen project, Rainham Marshes, River Quaggy, Little Ouse Headwaters Project, Lincolnshire's Coastal Grazing Marsh Project and Peatlands for People.

In all cases, the total number of ecosystem services delivered was greater than the planned or articulated number. Based on the review a conceptual framework has been proposed to maximise opportunities for biodiversity whilst optimising the delivery of ecosystem services for the benefit of society.

### **What are the benefits?**

The alignment of biodiversity and historic environment objectives with wider societal benefits may generate a range of advantages including increased potential for funding, greater public appreciation of the multifunctional role of wetlands and the need for their protection, and enhanced awareness of the need to protect and manage wetlands appropriately.

### **Can existing projects consider Ecosystem Services?**

There should be potential to 'retrofit' ecosystem services objectives to existing visions without compromising biodiversity delivery. In many cases several ecosystem services may already be being delivered but without explicit comprehension or publicity.

### **Adopting the right language**

In a recent report to Defra, research demonstrated that the term 'ecosystem services' was completely unfamiliar, even for relatively 'warm' audiences. The term which possessed the highest level of understanding and comprehension was '*benefits we get from nature*'.

The choice of language will depend on the audience. Even for audiences with an understanding of the environment, the use of some of the terms requires careful consideration. Whilst this might provide a common language within wetland 'academic' circles, it may ostracise a variety of audiences and complicate the implementation of a more multifunctional approach to a wetland vision.

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## **LESSONS LEARNED - CASE STUDY: THE GREAT FEN PROJECT**

Notes contributed by Alan Bowley & Chris Gerrard

The story of Woodwalton and Holme Fen National Nature Reserves is a classic illustration of the fate of a once pristine wetland. An area of 4000ha, which once boasted marsh moth, fen orchid, Savis warbler and bittern, was drained in the mid 19<sup>th</sup> century. Over subsequent decades, the land was drained for farming with remnant examples of wetland retained in two small nature reserves, one of which was so modified that almost nothing survives of the original fen.

Although the idea of linking the reserves has been considered for decades, acquiring arable land for nature conservation remained unfeasible in terms of nature conservation policy at the time. Throughout the 1990s, the concept of creating a huge wetland was discussed, but attempts to make this a reality were rejected by local farmers.

The Government's PSA targets for achieving favourable SSSI condition, together with the CRoW Act, were the catalysts that enabled the [Great Fen Project](#) to come into being, and challenged the premise that land not of intrinsic nature conservation value could be acquired to solve the problems of favourable condition within a SSSI.

The original concept then changed rapidly from one of linking the reserves to create an additional area of 700-1000 acres, to one of expanded biodiversity objectives to include local community involvement, economic aspirations and tourism. This multi-benefit approach supported the extraordinary progress of the project, driven by a strong alliance between partners with differing aims and objectives.

### **How could the Wetland Vision have informed the Great Fen Project?**

The Project started before the Wetland Vision was initiated, but there are areas in which it could have been a benefit:

- Early identification of the Project as a key piece in the strategic picture (integration of English Heritage and RSPB projects)
- Better targeting of agri-environment schemes and flood management compensation schemes. This is where the maps could have helped
- More resources in early phases – time and expertise to support some of the building blocks of the project such as mapping, hydrology and engineering
- Clearer policy statements at the outset from the partner organisations involved

### **How can Wetland Vision and the Great Fen Project work closely together in the future?**

- Use of information compiled by the Wetland Vision to inform future direction of the Great Fen Project
- Use of Project as 'testing ground' for Wetland Vision initiatives
- Demonstration of best practice which could be applied to other Projects (which may benefit from earlier involvement of the Wetland Vision)

## LESSONS LEARNED - CASE STUDY: LINCOLNSHIRE COASTAL GRAZING MARSHES PROJECT

Notes contributed by Anita Quigley

The Outmarsh of the [Lincolnshire Coastal Grazing Marshes](#) had a clear landscape character until the 1950's; it was an area of mixed farming and small grassland fields separated by narrow dykes. The pastures contained many archaeological features, including ridges and furrows, and diverse wildlife. The land was kept dry enough for livestock grazing, with wet ditches providing ideal habitat for water voles, otters and dragonflies, and a high water table for wading birds such as golden plover, lapwing and snipe.

However, the food crisis after World War II led to changes in Government policy that encouraged ever more intensive farming, and the 1953 east coast floods resulted in increased investment in flood defence and land drainage.

This historic landscape had a rich and varied cultural heritage that was inextricably linked with the sea. In recent years, the area has declined and now suffers from social and economic deprivation. While pastoral farming is still important, its influence has declined under the progressive conversion to arable. Unlike other grazing marsh areas, the Marshes did not benefit from targeted agri-environmental schemes (such as the ESA schemes) and lost over 25% of wet grassland in the 1990's alone.

### Multiple sector objectives

The Lincolnshire Coastal Grazing Marshes Project was formed to find ways to protect and enhance the natural and historic environment, and developed from a number of multiple sector objectives:

- enhancement of biodiversity;
- preservation and protection of archaeological and historical features;
- improved access and recreational facilities for local people and visitors;
- increased economic activity through the marketing of local products and services.

The project partners reflect this wide range of interests and include Lincolnshire Wildlife Trust, English Heritage, the Environment Agency, Natural England, Lincolnshire County Council, FWAG and East Lindsey District Council.

The success of the project draws upon Environmental Stewardship, particularly the Higher Level Schemes. However, additional funding will be needed to augment payments. Further funding under the Heritage Lottery Fund Landscape Partnership Scheme has financed the project planning phase; and the Esmee Fairbairn Foundation has funded a farm advisor to assist land-owners in completing HLS applications.

### How could the Wetland Vision have informed the project?

The Wetland Vision was still in its infancy while the LCGM Project was being developed so advantage could not be taken of the opportunities it now offers. The major challenges were that much of the traditional landscape had been lost in the last 50 yrs so only older members of the community could remember it. In an area that has spent its history defending itself from the sea, and in light of the 1953 & 2007 floods, with dire predictions about rising sea levels, people were naturally suspicious of changes to water levels. Also, although the partnership had a common shared vision, and with local resources, knowledge and experience pooled in a well coordinated and focused effort, there was a lack of a strong national resource to draw on.

The Wetland Vision could have helped by informing or providing information on:

- Communicating what a wetland would look like and how it would work
- Visualisation tools could help stakeholders and local residents understand how the proposed landscape would look
- Signposting to tools that could calculate water demand for future initiatives would have been extremely helpful in supporting this consultative process
- Accessing a wealth of experience on delivery on the ground and community engagement, to share and learn from the experiences of other, similar projects

**TABLE 1 – LIST OF DATASETS USED WITHIN THE WETLAND VISION PROJECT**

<b>Dataset Title</b>	<b>Details</b>	<b>Application in the Wetland Vision project</b>	<b>Available at / Provided through a partnership agreement</b>
Agricultural land classification (ALC)	Agricultural productivity classes	Weighted factor to assist priority setting	MAGIC; Natural England
Airport locations	Point location of civic and military airports, dated 2007.	Contextual information to assist priority setting	Central Science Laboratory (CSL)
BAP priority habitat inventory data	Habitats incl. blanket bog, coastal and floodplain grazing marsh, fens, purple moor grass rush pastures, reedbed and wet woodlands	Weighted factor to assist priority setting. Some indication of the significance of areas for certain wetland habitats.	Natural England GIS Register
DEM / DTM	Digital Elevation Model/ Digital Terrain Model 50m resolution - various resolutions available as grid or polygons	Contextual information as indication of potential suitability i.e. generation of slopes and contours. Used to generate baseline of potential for habitat maps	Environment Agency
FloodMap	Including Flood Risk Zones for tidal and fluvial flooding	Used to generate baseline of potential for habitat maps	Environment Agency
Geology	Solid and drift geology maps	Contextual information	Environment Agency
Grazing marsh GIS	1999 report data outlining ranking of natural areas for biodiversity	Weighted factor to assist priority setting	Natural England; Centre for Ecology and Hydrology (CEH)
HAP Annexe Maps & FenBase Clusters	English Nature HAP Annexe maps.	Lowland raised bog maps adopted directly into Vision, Fen maps to inform analysis	Natural England; Wetland Habitat Action Plan (wHAP)
Land Cover Map 2000	Polygonised land use interpreted through satellite differentiation detection and auto-polygonisation. Some limitations and interpretation reliability issues	To generate a semi-natural layer based on broad land use category. 1km dominance summary version is free from CEH	Government Agencies; Centre for Ecology and Hydrology (CEH); RSPB
MIRO priority habitat sites	Minerals restoration project GIS results to identify potential of minerals sites for BAP habitat	Contextual information to assist priority setting	After Minerals Project; RSPB
NapMap	National Soils Map datasets: 1:250k showing dominant soils at 1km & soil association polygons	Used to generate baseline of potential for habitat maps	Environment Agency; Natural England
National monuments record	Point locations of scheduled ancient monuments, battlefields and gardens	Contextual information	English Heritage; Historic Environment Record
Newt distribution	Point location of newt records to determine best locations for ponds	Contextual information and potential area priority setting for ponds.	Ponds Conservation
NPRI	National Peat Resource Inventory	Identifies pockets of peat across country at greater resolution than NatMap	Natural England
Rivers network	1:10 and 1:50k river networks	Contextual information and potential site priority setting	Environment Agency
RSPB Reserves	RSPB Reserve boundaries as polygons	Weighted factor to assist priority setting. Part of the NGO nature reserves weighting	RSPB Data Zone
SSSI units and condition	Location and details of SSSI units, their primary habitats and condition	Weighted factor to assist priority setting.	Natural England GIS Register
UK Lakes Database	Database describing detailed inventory of GB lakes	Directly used to create Lakes map	Environment Agency UK Lakes Database
Urban settlements	1991 urban settlement boundaries	Contextual information and potential area priority setting. Areas of potential outside urban areas weighted highly.	Office for National Statistics
Wetlands GIS for Archaeology CD-ROM	Soil associations categorised by potential to support various historic environment evidence	Contextual information and potential area priority setting for historic environment interests.	Exeter University; English Heritage
WFD	Water Framework Directive database including aquifer and sub catchment boundary polygons	Sub catchment spatial framework adopted to use the WFD water body ID	Environment Agency
Wildlife Trust wetland sites (indicative)	Central grid references of county wildlife trust wetland sites. Indicative only.	Weighted factor to assist priority setting. Part of the NGO nature reserves weighting.	The Wildlife Trusts
WWT Reserve grid references (indicative)	Central grid references of WWT centres. Indicative only.	Weighted factor to assist priority setting. Part of the NGO nature reserves weighting	Digitised by project; WWT