



BIODIVERSIFY

The Water Resources East Natural Capital Plan

First Iteration (27/4/2021)



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INTRODUCTION

This natural capital plan has been developed for Water Resources East through a stakeholder led process as part of the regional water resources planning process. This has been generously supported by The Coca-Cola Foundation and WWF – UK.

This is the first version of the plan. Stakeholder feedback will be used to iteratively refine and improve the plan until it represents a shared vision for natural capital in the region.



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THE STAKEHOLDER LED PROCESS



October – May

Your projects

We begun by learning about historic and ongoing projects and resources across the WRE region.

November – December

Objectives and actions

Stakeholders submitted over 945 objectives and actions which collectively describe their ambition for natural capital in Eastern England. Objectives describe what stakeholders want from or for nature, whilst the actions list the range of steps that should be taken to achieve this vision. We processed these broad inputs and sourced robust ecological data, details of which are available on the WRE website.

January – February

Targets

We sought direction from the community on how to set targets. We used this this guidance to interpret the goals of the 25 Year Environment plan to set initial targets that are rooted in both policy and stakeholder feedback. These targets are however just drafts and they will be altered according to the views of stakeholders for the next iteration.

April – June

Review the prioritisation

This document shares the first version of the natural capital plan. We will be repeatedly iterating the plan over the coming months based on your feedback and guidance.

USING OBJECTIVES TO CREATE A SHARED VISION



We received a fantastic level of input from a broad range of organisations across Eastern England including 945 discrete objectives and actions from 37 stakeholder organisations. These submissions collectively cover a wide scope of natural capital and ecosystem services. These inputs were processed in order to effectively represent stakeholder views in the spatial prioritisation analysis. As part of this they were grouped into natural capital categories defined by Natural England and reputable data was sourced to represent them. As SCP is an inherently transparent process, all details of the stakeholder submissions and their categorisation are available on the WRE website.

If you have not yet submitted actions and objectives then please do so via the WRE website. We will be revisiting the list as part of this iteration so there is still an opportunity to have your voice heard. Please share your views with us even if your views are duplications of other submissions as it helps us gauge the relative importance of different aspects of natural capital.

Natural Capital Category	Count of objectives	Count of stakeholder organisations
Biodiversity (Habitat)	93	14
Water quality	23	12
Climate regulation	21	11
Ecological processes (Connectivity)	18	11
Biodiversity (General)	24	10
Flood control	11	8
General Nat Cap	12	8
Ecological processes (Flow)	12	7
Ecological processes (Resilience)	8	7

This table provides an overview of the number of discrete objectives in each natural capital category



ACTIONS



Whilst objectives summarise what we want to achieve, the list of actions tell us what should be done to make this happen. We grouped actions into four zones as detailed in the table below. A full list of the actions is available on the WRE website. Due to the overlap with other parts of the WRE planning process, we have decided to address the manage zone at a later date.

Zone	Meaning
Conserve	The areas of good quality habitat which should be Conserved
Restore	Areas of degraded habitat which should be Restored
Establish	Areas where new habitat should be Established
Manage	Areas of farmland which should be Managed in a biodiversity friendly manner

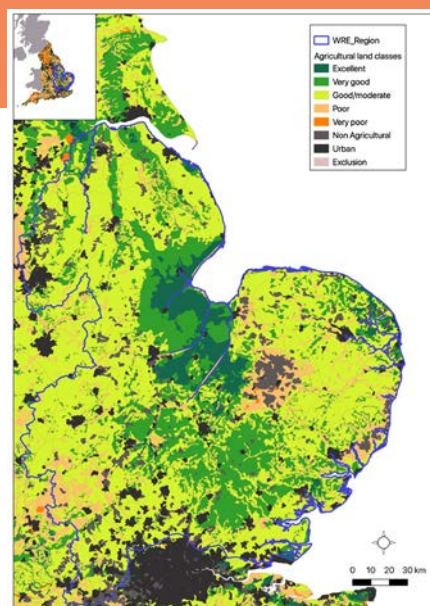
Actions were grouped into natural capital categories						
	Biodiversity	Climate	Flood control	Water Quality	Water Supply	Total
Conserve	11	4	3	3	1	22
Establish	76	12	17	17	13	135
Restore	41	3	6	9	5	64
Manage	11	7	1	19	4	42

Table 2. The number of actions within each zone and natural capital category.

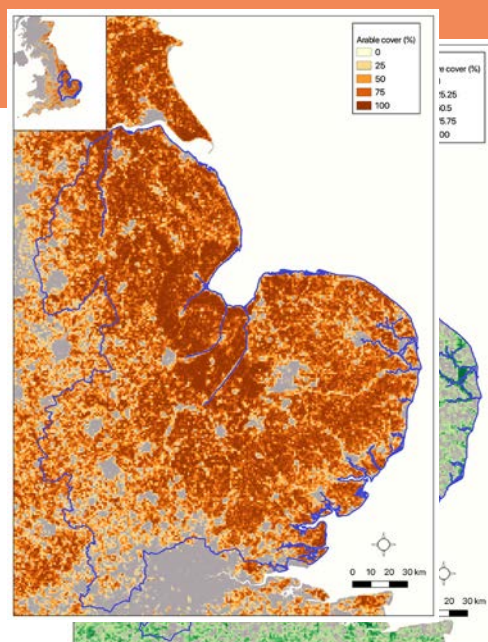
The zones are created to reflect stakeholder submissions. For example, we suggest using a zone for establish because of how frequently the submissions highlighted this action as a priority.

REPRESENTING COST

One of the key strengths of the SCP process is that the analysis identifies the most cost effective solutions. To achieve this we combined multiple sets of data to effectively represent the relative costs of different actions.



We began with Natural England data which identifies the relative agricultural potential of farmland.

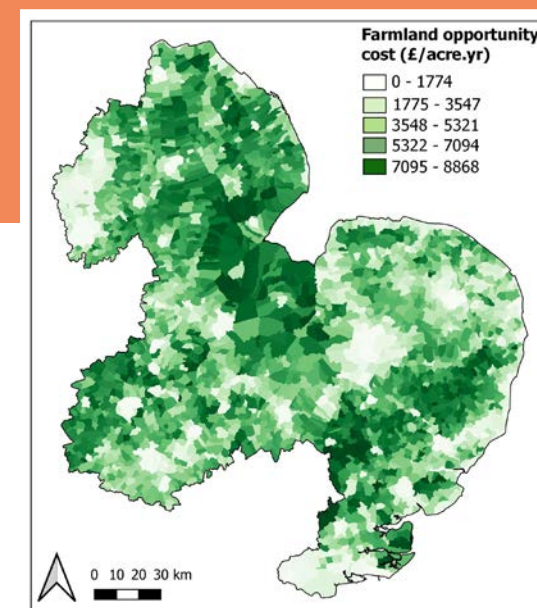


We combined this with data from the Centre for Ecology and Hydrology which identifies pastoral and arable land.

Data from Knight Frank and Farmers Weekly allowed us to identify the relative cost of different grades of agricultural land across the region.

We also considered the set up costs of natural capital action. We used the following resource to estimate the average costs of establishing, restoring and conserving habitat:

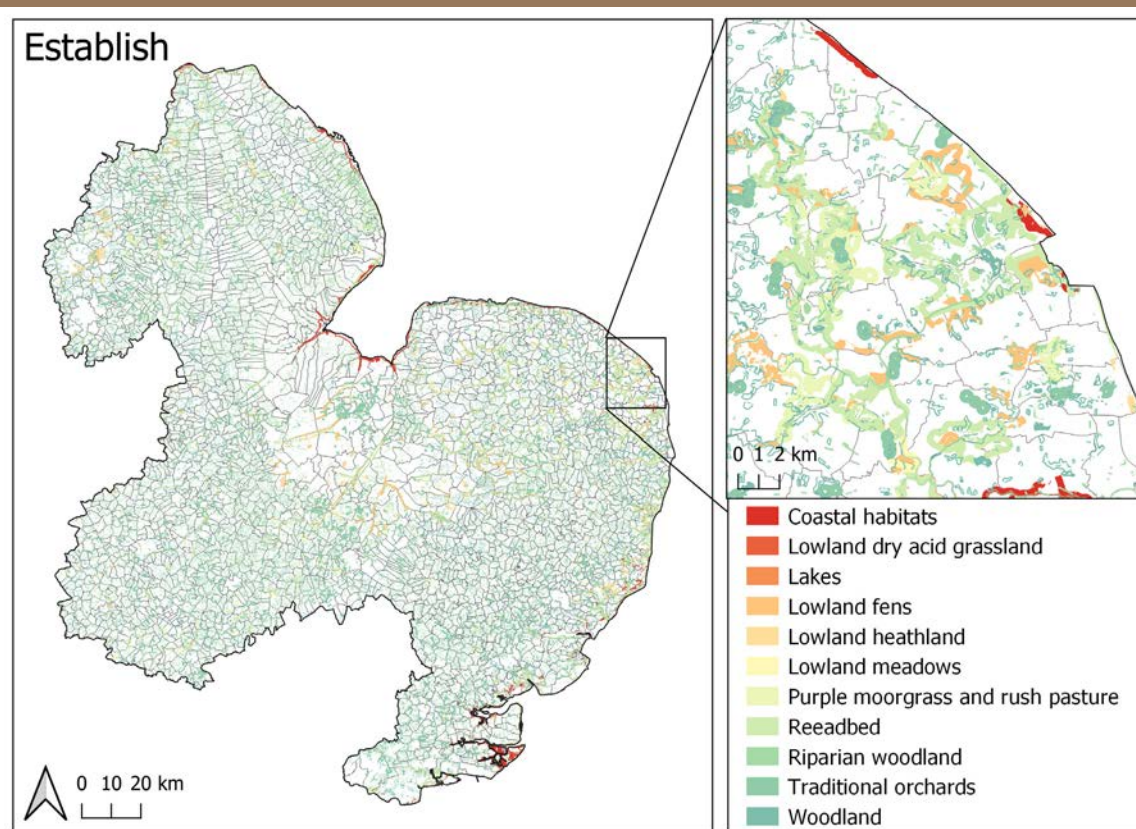
Assessing the costs of Environmental Land Management in the UK A report for the RSPB, the National Trust and The Wildlife Trusts Matt Rayment (2017)



Combined, these data sets give us a map of the relative cost for compensating a farmer to take their land out of production and use it for natural capital purposes.

USING DATA TO REPRESENT YOUR VISION

Once we had processed your objectives and actions to create a shared vision, we used a broad array of ecological data to represent these ambitions in the analysis. These datasets were collated to create maps of opportunity areas for the **Conserve, Restore and Establish Zones**. These maps also considered where to deliver important ecosystem services such as flood prevention, water purification and carbon storage.



A map of all the potential areas for habitat establishment in the WRE region.



ESTABLISHING AN EVIDENCE BASE



Mapping the potential for the three zones allowed us to calculate the potential for action across Eastern England. This table indicates how many hectares of each habitat can potentially be conserved, restored or established. This gives us a strong evidence base and allows us to collectively make informed decisions about our ambitions for the region.



	Potential (hectares)		
Conservation Feature	Conserve	Restore	Establish
Ancient woodland	24230	4902	1132
Coastal Sand dunes	1383	-	-
Coastal salt marsh	11881	-	-
Coastal vegetated shingle	792	-	-
Combined coastal	-	7148	14023
Lowland dry acid grassland	5953	886	11639
Lakes	277	4843	91
Lowland calcareous grassland	5193	1363	23307
Lowland fens	8508	20261	31201
Lowland heathland	6887	882	10916
Lowland meadows	3381	2968	28529
Maritime cliff and slope	219	-	-
Purple moor grass and rush pasture	837	98	5338
Reedbeds	2546	8493	16539
Rivers	3424	2130	43
Traditional orchards	2099	-	61444
Wood-pasture & parkland	7606	5509	12265
Carbon storage in vegetation	713707 (tonnes)	-	-
Riparian woodland potential	-	-	230460
Floodplain reconnection potential	-	-	23216
Water Quality	-	-	1111826

SETTING TARGETS FOR CONSERVE AND RESTORE



The guidance from stakeholders has been very clear that there is a strong desire to conserve, restore and establish new areas of habitat in Eastern England. It is critically important that stakeholders are empowered to collaboratively define what this means. To support this, we have developed initial targets by drawing from the 25 Year Environment Plan, which we will refine with your feedback to reflect a shared vision. This should be seen as the start of a conversation about a communal ambition rather than a recommendation.

CONSERVE

RESTORE

Why are targets not 100% for Conserve and Restore?

Whilst it's tempting to try to protect every piece of nature, identifying priorities is important if we are to make the best use of our resources. This means focusing on areas of habitat which are in a good position to make the most meaningful and cost effective contributions to the habitat network.

The target for Conserve represents the aim to protect existing areas of nature which form an important part of the network of habitats across the region. We suggest a high target of conserving 80% of good quality priority habitat.

The target for Restore indicates the proportion of currently degraded habitat we wish to rehabilitate to good quality. We drew directly from the 25 Year Environment Plan to select a target of restoring 75% of degraded habitats.

Setting targets for the Establish zone requires answering two questions:

Question 1) How much new habitat should be created in the region?

The 25 Year Environment Plan includes an ambition to create 500,000 ha of new habitat. As the WRE region is 22.3% of England, proportionally by area this suggests 115,000ha should be created. This is a conservative estimate, as Eastern England is likely to have more opportunities for establishing new habitat than other regions.

Question 2) How much of each habitat type should be created?

We allocated the 115,000ha across the habitat types proportionally according to their potential for establishment. We are very keen to receive your feedback on how these should be adjusted to suit your shared vision for the region.



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SETTING TARGETS FOR ESTABLISH

We applied the simple target setting rules on the previous page to the evidence base we created using your objectives and actions, as detailed in the table.

We also set targets for ecosystem services:

Carbon - We set a target of retaining 90% of the carbon currently stored in good quality natural capital. We have been unable to find good data for carbon sequestration through habitat creation.

Flood prevention and flood plain reconnection – The 25YEP sets a target of 12% woodland, which means an increase of 225,270ha in the WRE area. We split this between planting trees in riparian areas and reconnecting flood plains. This was a mistake however, in the next iteration we will set an independent target for reconnecting flood plains and potentially use data for woodland habitat creation.

Water Quality – We planned for restoring water quality by setting a 90% target for establishing habitat around sensitive rivers and lakes as guided by integrated hydrological units.

Conservation Feature	Potential (hectares)			Targets (hectares)		
	Conserve	Restore	Establish	Conserve	Restore	Establish
Ancient woodland	24230	4902	1132	19384	3677	912
Coastal Sand dunes	1383	-	-	1107	-	-
Coastal salt marsh	11881	-	-	9505	-	-
Coastal vegetated shingle	792	-	-	634	-	-
Combined coastal	-	7148	14023	-	5361	11296
Lowland dry acid grassland	5953	886	11639	4762	664	9376
Lakes	277	4843	91	222	3632	73
Lowland calcareous grassland	5193	1363	23307	4155	1022	18775
Lowland fens	8508	20261	31201	6807	15196	25134
Lowland heathland	6887	882	10916	5509	662	8794
Lowland meadows	3381	2968	28529	2705	2226	22982
Maritime cliff and slope	219	-	-	175	-	-
Purple moor grass and rush pasture	837	98	5338	670	73	4300
Reedbeds	2546	8493	16539	2037	6369	13323
Rivers	3424	2130	43	2739	1598	34
Traditional orchards	2099	-	61444	1679	-	0
Wood-pasture & parkland	7606	5509	12265	6085	4132	0
Carbon storage in vegetation	713707 (tonnes)	-	-	642336 (tonnes)	-	-
Riparian woodland potential	-	-	230460	-	-	204636
Floodplain reconnection potential	-	-	23216	-	-	20612
Water Quality	-	-	1111826	-	-	1000643

RUNNING THE SPATIAL PRIORITISATION



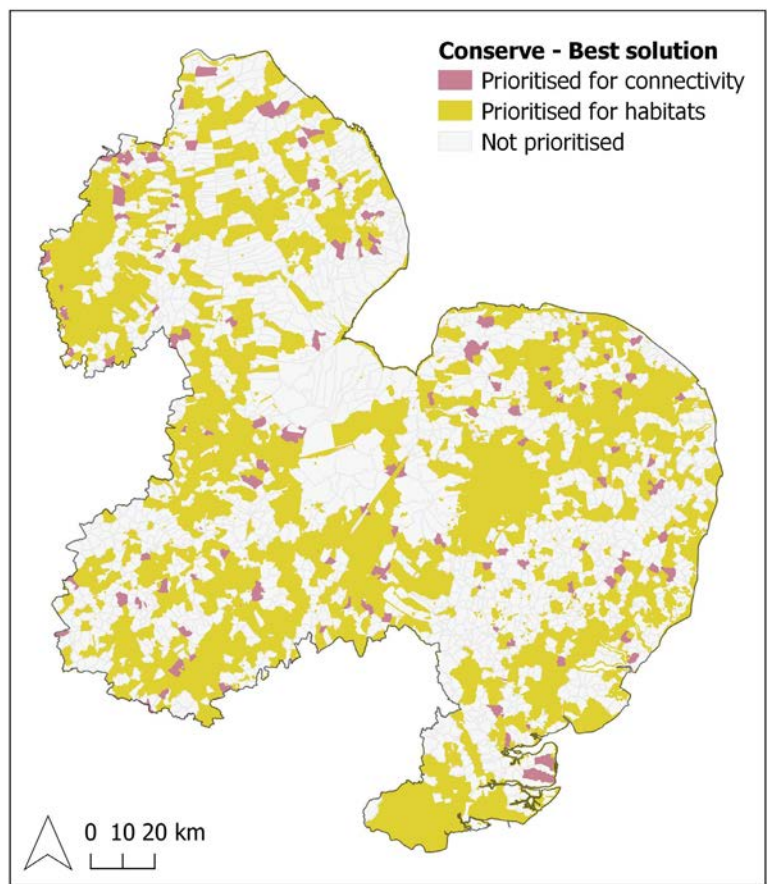
We have used the objectives, actions and targets represented by the ecological and cost data to run a spatial prioritisation. This analysis identifies where to act in order to most cost effectively achieve the shared vision for the landscape. It is important to note that this is not an “answer” but rather it reflects the implications of the decisions made by stakeholders when they submitted objectives and actions.

Selection Frequency – The spatial prioritisation analysis runs one hundred times and records how often each planning unit (parish) is selected included or excluded as part of the solution, giving us the selection frequency. If a planning unit is included and has a selection frequency of 100 this tells us that planning unit is essential for achieving the targets, whilst a selection frequency of 50 indicates that it can provide a benefit, but there are other options available. This output is helpful for decision making as it illustrates how important each parish is to achieving the targets.

Best Solution – The analysis identifies the single best solution to cost effectively achieve the targets. This is just a recommendation, obviously there are other factors to consider in deciding where to act. The strength of the best solution is that it provides a clear recommendation. Discussion can be used to adjust and negotiate this outcome in order to identify a best solution which combines the spatial prioritisation outputs with the pragmatic, contextual knowledge of stakeholders.

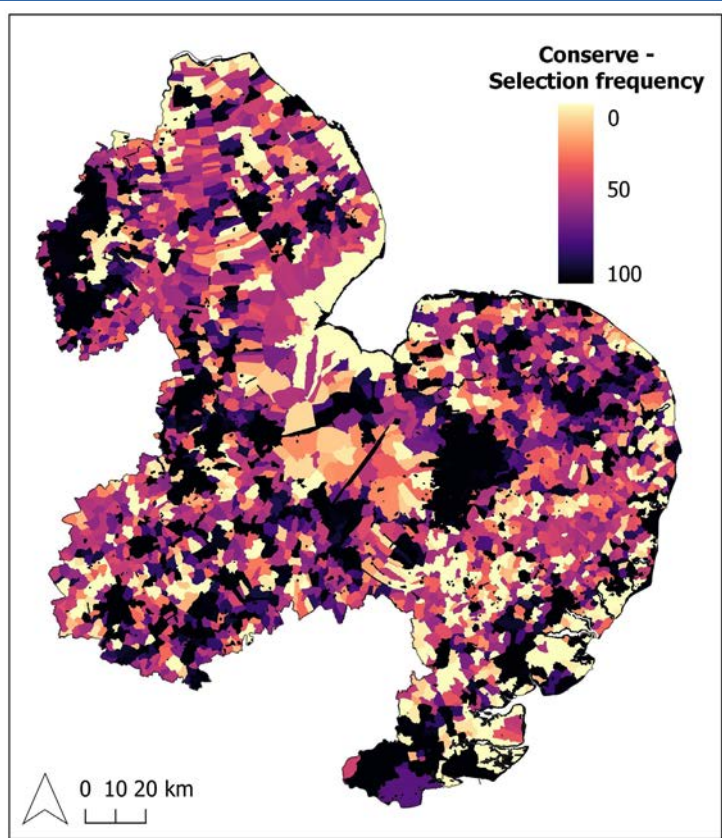


CONSERVE

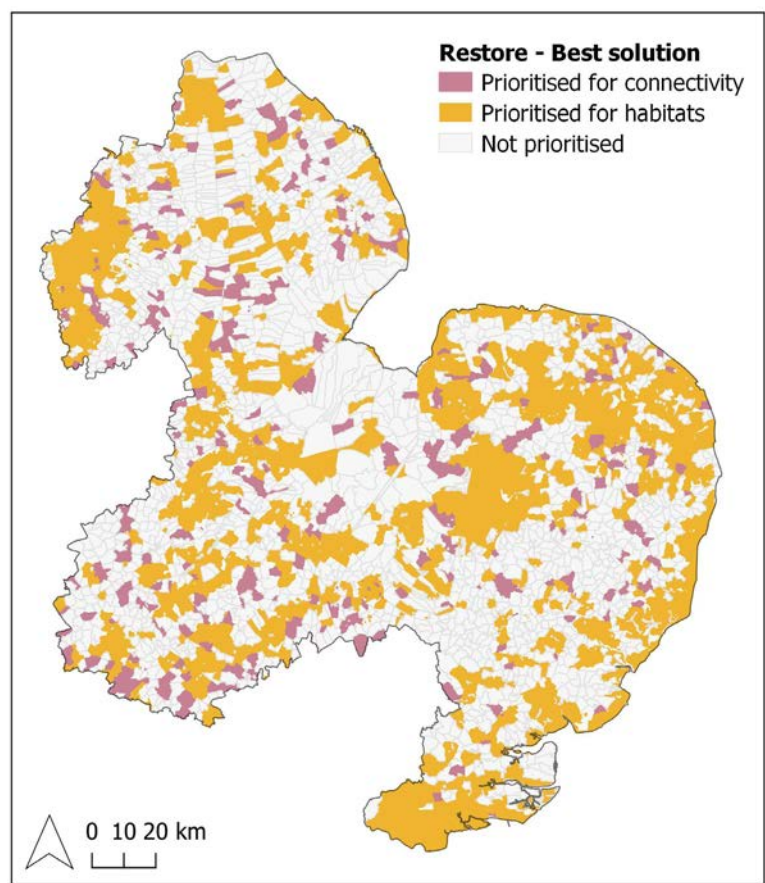


These maps represent the results for the Conserve Zone. They indicate that there are a few key areas which are critical, such as Thetford Forest, and then a range of other areas which are optimal but where there is flexibility.

Number of parishes selected	2271 out of 4395
Number of parishes selected for connectivity	173 out of 4385
Area of habitat prioritised	69,919 ha
Proportion of WRE region prioritised	2.4%

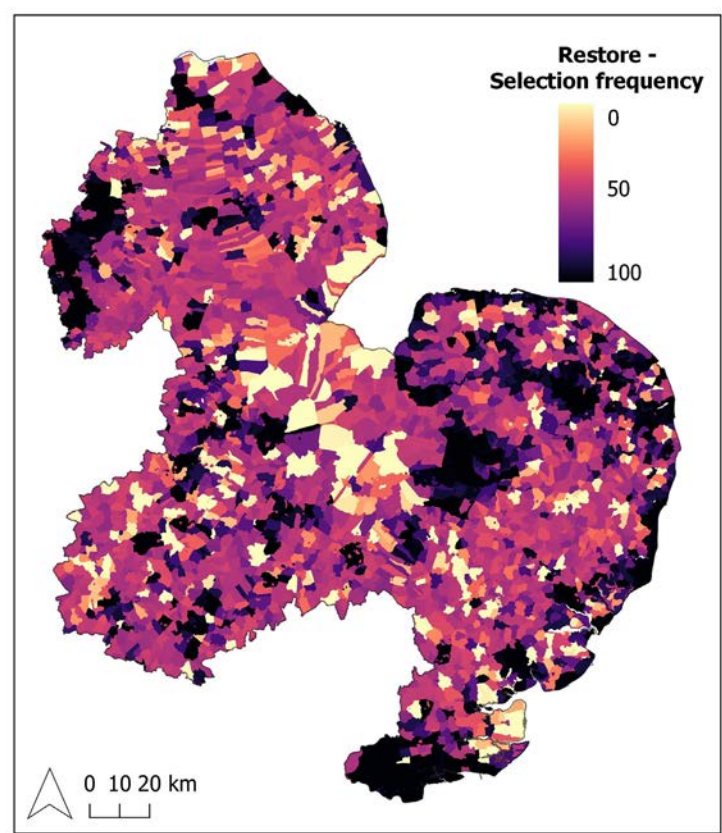


RESTORE

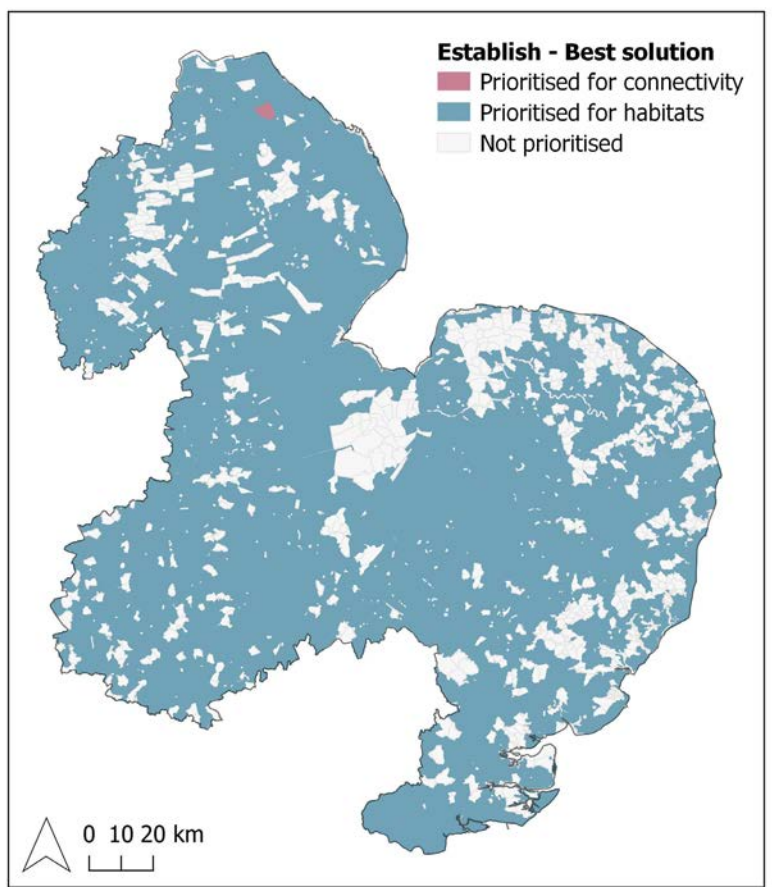


These maps represent the results for the Restore Zone. The best solution map indicates that this zone is particularly important for restoring connectivity across the landscape. In contrast to the Conserve Zone however, there is much more flexibility in how the restoration targets are achieved. Whilst there are some critical areas, the majority of parishes are capable of making important contributions.

Number of parishes selected	1330 out of 4395
Number of parishes selected for connectivity	325 out of 4395
Area of habitat prioritised	44,573 ha
Proportion of WRE region prioritised	1.5%



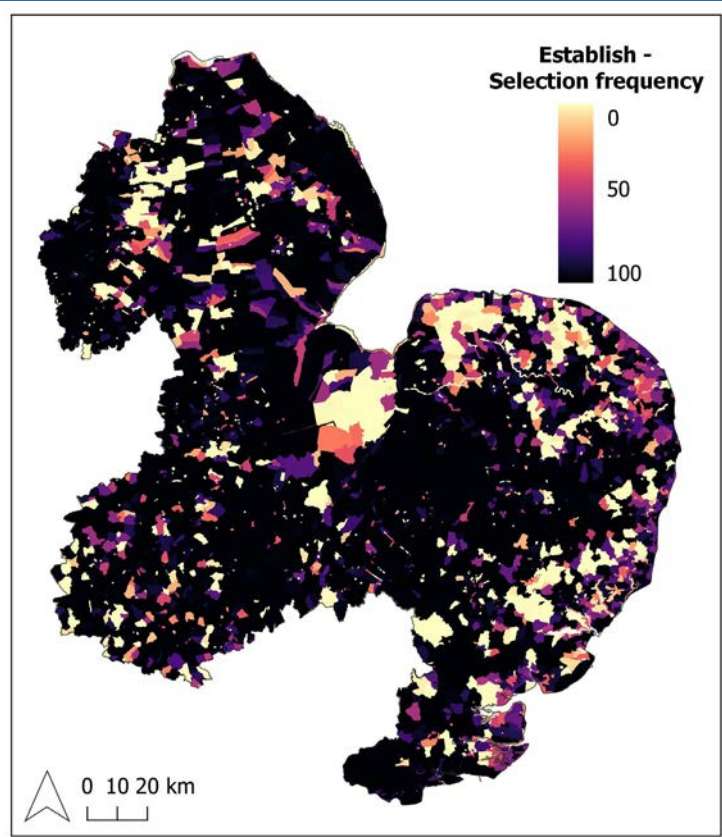
ESTABLISH



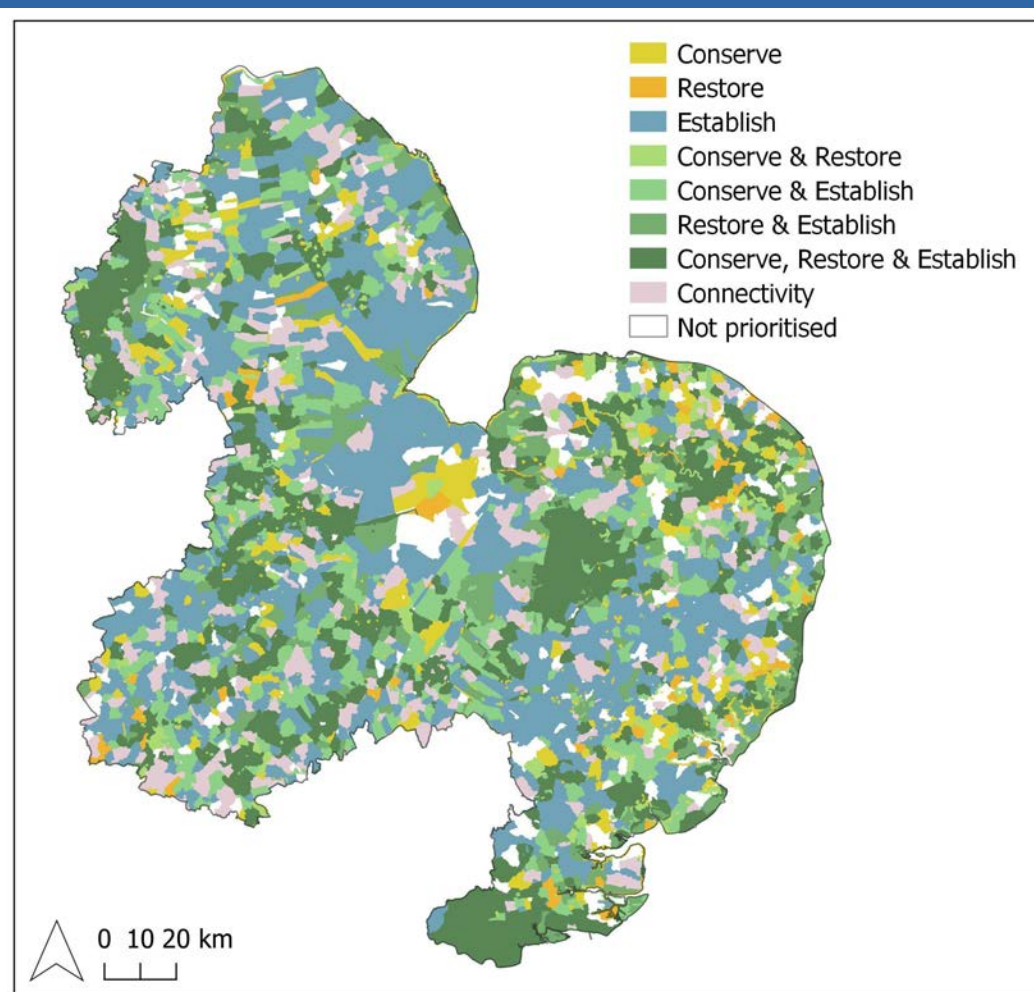
The results for the Establish Zone indicate that in order to achieve the goals of the 25YEP, action will be required in the majority of parishes across Eastern England.

Because the targets are set so high, this allows very little flexibility in where action must take place. Whilst this is a fantastic ambition, it might be more useful in the short term to focus on a reduced set of initial priorities.

Number of parishes selected	2768 out of 4395
Number of parishes selected for connectivity	1 out of 4395
Area of habitat prioritised	338,164 ha
Proportion of WRE region prioritised	11.6%



THE CONSOLIDATED RESULTS



This map combines the results for the conserve, restore and establish zones to identify where action should take place over the next 30 years to achieve the shared vision for Eastern England. Whilst the majority of the parishes have been selected for one or more categories, in most cases natural capital action is only recommended in a small area of each parish.

The total area of action recommended for establish, restore and conserve is **20% of the WRE region**. On average English counties currently have 16% of their land managed for nature so 20% represents a very realistic goal. This will have to be a team effort achieved by contributions from all sectors of society.

Obviously funding will be critical to achieving this vision. Much of the highlighted land is currently agricultural so fair compensation for farmers will be essential. Fortunately, increasing amounts of funds are becoming available for nature restoration, for example through ELM, biodiversity offsets and natural capital investment. A key purpose of this plan is to help coordinate this broad range of funds, actors and projects so that the best possible outcome can be achieved through cost-effective collaboration.

GUIDING LOCAL ACTION



Where parishes are identified by the zones, it is possible to access the underlying data to understand where actions can provide important contributions. It is important to note that developing projects to translate these proposed actions into practice will require careful planning and discussion, the data is not perfect and there are many other factors to consider when undertaking natural capital action.

We are still exploring the options for making this tool as useful as possible so we would be very interested to hear how you might use this information.

Parish: Beaumont-cum-Moze

County: Essex

Prioritised: For Establish

Selection Frequency: 12

Area of conservation features:

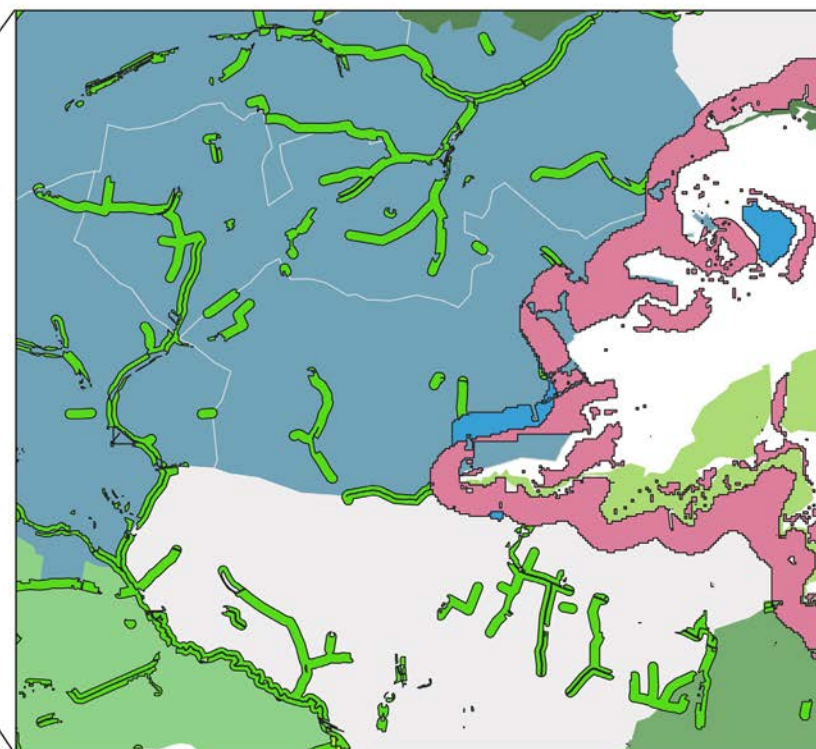
Coastal: 26h

Reedbeds: 160h

Riparian Woodland Potential: 37h



■ Coastal ■ Reedbed ■ Riparian woodland



USES AND ROLES

The WRE natural capital plan is specifically designed to act as a catalyst for wide spread systemic change. To achieve this, we see it playing multiple roles simultaneously, although we expect that stakeholders will find innumerable innovative uses for the tool.



Role 1 – Establishing a shared vision

A central purpose is to help stakeholders across Eastern England identify and articulate a shared vision for the future of natural capital in the region. This will help stakeholders understand how they can work together to achieve a resilient, sustainable and green future.



Role 2 – Delivering cost effective change

Systematic conservation planning optimises actions against cost to deliver the shared vision. This ensures that the actions proposed take advantage of synergies and identify efficiencies in order to achieve the desired outcomes as cost effectively as possible.



Role 3 – Informing water resources planning

The WRE natural capital plan is a component of a much broader water resources management planning process. These parallel linked workstreams will ensure that water and nature are managed in a holistic, interconnected manner.



Role 4 – Supporting Local Nature Recovery Strategies

The Environment Bill presents a clear role for Local Nature Recovery Strategies. The SCP work will offer a range of tools to help the counties of Eastern England develop locally led plans which collectively present a roadmap for achieving regionally coordinated improvements to nature.



Role 5 – Facilitating discussion

By presenting clear suggestions for where local action can deliver regional benefits, the plan provides an easily understandable basis for a broad range of discussions including project development, action coordination, financial negotiations and ecosystem service delivery.



Role 6 – Guiding biodiversity net gain

The Establish and Restore zones identify ideal sites for biodiversity offsets, whilst the conserve zone indicates where impacts should be avoided. This allows developers to rapidly identify how to achieve net gain in a socially supported manner.



Role 7 – Strengthening agri-environment applications

As farmers and land managers increasingly incorporate natural capital action into their business models, there is a need to clearly justify financial proposals. Land managers will be able to use the regional plan to identify effective actions and make an informed case for support, investment or payment.



Role 8 – Supporting local natural capital plans

People across the country have identified the need for nature restoration, and in many cases proactive individuals are coming together to coordinate action across their catchments, parishes or communities. This plan will provide such groups with a clear starting point by helping them understand what they can do to meaningfully contribute to this important shared goal.



Role 9 – Ensuring effective delivery of ecosystem services

Careful coordination is required to develop natural capital networks that effectively deliver ecosystem services. The SCP analysis uses ecological evidence to identify where action will deliver services identified by stakeholders as important, including flood prevention, water purification and ecological resilience.



Role 10 – Empowering individuals

There is a strong public desire for a greener, more natural England. A strength of this plan is that it can be used to help individuals understand how they can contribute to this ambitious shared vision.



HOW DO FARMERS AND LAND MANAGERS USE THE PLAN?



Making the financial case for natural capital action

The farming sector is currently undergoing a significant shift towards environmentally conscious practices and nature restoration. There is an increasing range of alternative income streams becoming available such as ELM, biodiversity offsets and private sector natural capital investment. A core purpose of this plan is to help farmers and land managers make an effective business case for action on their land, allowing them to take advantage of these potentially competitive opportunities.

Providing guidance

When working at the field level, it can be challenging to know what actions would make the most significant contributions. This plan can provide guidance as well as helping coordination between land managers in an area.

On the ground knowledge beats regional planning

It is important to note that whilst the regional plan is useful, nothing beats the local knowledge of someone who is intimately acquainted with the land. Whenever projects are being developed, a pragmatic approach should be taken in interpreting the plan. Further to this local plans should be developed and used wherever possible.



HOW CAN THE PRIVATE SECTOR USE THE PLAN?



Identifying opportunities for natural capital investment

Many private sector organisations are currently exploring the potential for natural capital investment. This plan can be used to identify where actions might take place in order to deliver the maximum return on investment in a socially acceptable manner. In addition, the suggested actions can be used as the basis for discussions with land managers or other collaborators and partners.

Increasing ecological resilience and climate adaptation

Climate change is likely to bring an increase in extreme weather events. Droughts, floods and warmer winters will become more common putting pressure on a wide range of economically important activities, interfering with agricultural production and damaging infrastructure. Ecological resilience is a critical tool in mitigating these impacts, lessening the effects of extreme weather and providing a range of other buffering services such as natural pest control, pollution reduction and flood prevention.

Purifying, retaining and managing water

Access to pure, plentiful water is an ongoing issue in Eastern England. Many of the key benefits of natural capital investment are focused on increasing the availability and purity of water resources. The coordinated creation and restoration of natural habitats can filter water and increase retention in the landscape, thus reducing the impacts of droughts.



HOW DO DISTRICT AND COUNTY COUNCILS USE THE PLAN?



Developing local nature recovery strategies

The upcoming Environment Bill includes provision for the development of local nature recovery strategies (LNRS). These county level plans indicate how nature will be managed and restored in order to achieve both biodiversity and ecosystem service goals. The regional plan will provide a strong foundation for LNRS in the WRE area by identifying important opportunity areas, providing the wider context and acting as an exemplar for natural capital planning.

Coordinating projects and opportunities

Achieving this vision for nature will require a broad range of varied projects operating in parallel but with a common shared goal. This plan can be used to help identify how to coordinate a broad range of activities so that they maximise synergies, increase effectiveness and avoid unintended consequences.

Connecting action across borders

One of the challenges in any planning exercise is managing cross boundary connections. The WRE plan will help counties identify how to coordinate with their neighbours and identify where local action can provide important connectivity benefits. This linked up approach is particularly important as many rivers in the region pass through multiple counties, meaning that climate resilience will require careful cross border collaboration.

Maximising the benefits of investments, agri-environment payments and biodiversity net gain

A range of new mechanisms for funding natural capital action are currently in development. The plan can play a key role in helping maximise the benefit of these evolving opportunities by identifying the most effective areas for intervention or investment. Contrastingly, it can also help decision makers ensure that impacts avoid important areas, for example in areas of habitat which play a connectivity role.



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HOW NGOS, LOCAL NATURE PARTNERSHIPS AND LOCAL ENTERPRISE PARTNERSHIPS USE THE PLAN?



Coordinating projects

Organisations which operate at a regional scale will find an immediate use for the plan as it can be used to identify priority areas for different types of actions. This can be used to organise a breadth of different projects, ensuring that they are well suited to collectively furthering an ambition for the region. Further to this, it provides a basis for coordinating and collaborating with other organisations.

Maximising impacts

The primary purpose of the plan is to identify priority areas where natural capital can most effectively contribute to the regional habitat network and provide important ecosystem services. By drawing on this resource, organisations seeking to achieve these benefits can increase the effectiveness of their actions and ensure meaningful impacts.

Making the case for funding

As the plan represents the optimal, cost effective delivery of the stakeholder vision for natural capital and ecosystem services in the region it can be used to make the case for project funding. Because stakeholders have collectively set the goals of the plan, this also indicates that the projects which align with these ambitions are contributing to a broadly supported vision for the region.





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