

The natural capital of North Lincolnshire underpins its economy and the health and wellbeing of its people.

The impact of the global climate and nature crises will be felt acutely within the place. Protecting and investing in nature is essential if we are to tackle these global challenges and local risks so that natural capital continues to support the place's businesses, people and wildlife for the long term.

This scorecard summarises the estimated benefits provided by natural capital within the North Lincolnshire natural capital register and account.

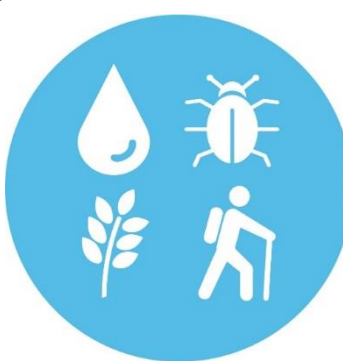
A natural capital approach is the understanding that nature underpins human wealth, health, wellbeing and culture. Recognising this supports better decisions to protect and enhance natural capital so that it can continue to deliver the services and benefits we need.

Natural capital accounting can help support this approach by setting out a register of natural assets for a place, quantifying the flows of services from the assets, and estimating an economic value for the benefits derived. This value will only partially represent the fuller benefits that natural capital provides and it provides an illustration of the longer term benefits for people from protecting and improving the environment.

This natural capital register and account follows the accounting framework set out by the Government's Natural Capital Committee.

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Ecosystem Services

This summary focuses on broad services and benefits from the natural assets in the place. A potential 13 ecosystem services can be estimated in terms of quantity and value using the Environment Agency Register and account (icons below). We have used data for the ecosystem services listed on the right hand side.



Agriculture – Production of wheat, dairy and livestock from farmland
Water supply - Water for domestic use, agriculture, industry and power generation (cooling)
Timber – Provision of timber-based products by woodland
Renewable energy – Energy available from hydropower generation
Climate regulation - Carbon sequestered by habitats
Air quality - Removal of air pollutants (PM2.5, SO₂, NO₂, O₃) by habitats
Hazard regulation - Flood storage provided by woodland
Water quality – Welfare benefit of good water quality
Recreation - Recreational visits to open green space
Physical health – Health benefits of active visits to green space

Valuing North Lincolnshire Natural Capital



Natural Assets

79,011 hectares
Total land area.

58,261 hectares of **enclosed farmland**.
The largest natural capital asset type at **73.7%** of total area.



Ecosystem Services

£100 million
Total annual value of services from natural capital.

£64 million per year
The annual value from **agriculture**.
The largest ecosystem service by value for the place.



Benefits

The ecosystem services and the benefits that flow from them

Food provision is essential for maintaining the health of society

Agriculture production from 58,261 hectares of **enclosed farmland**.



Value

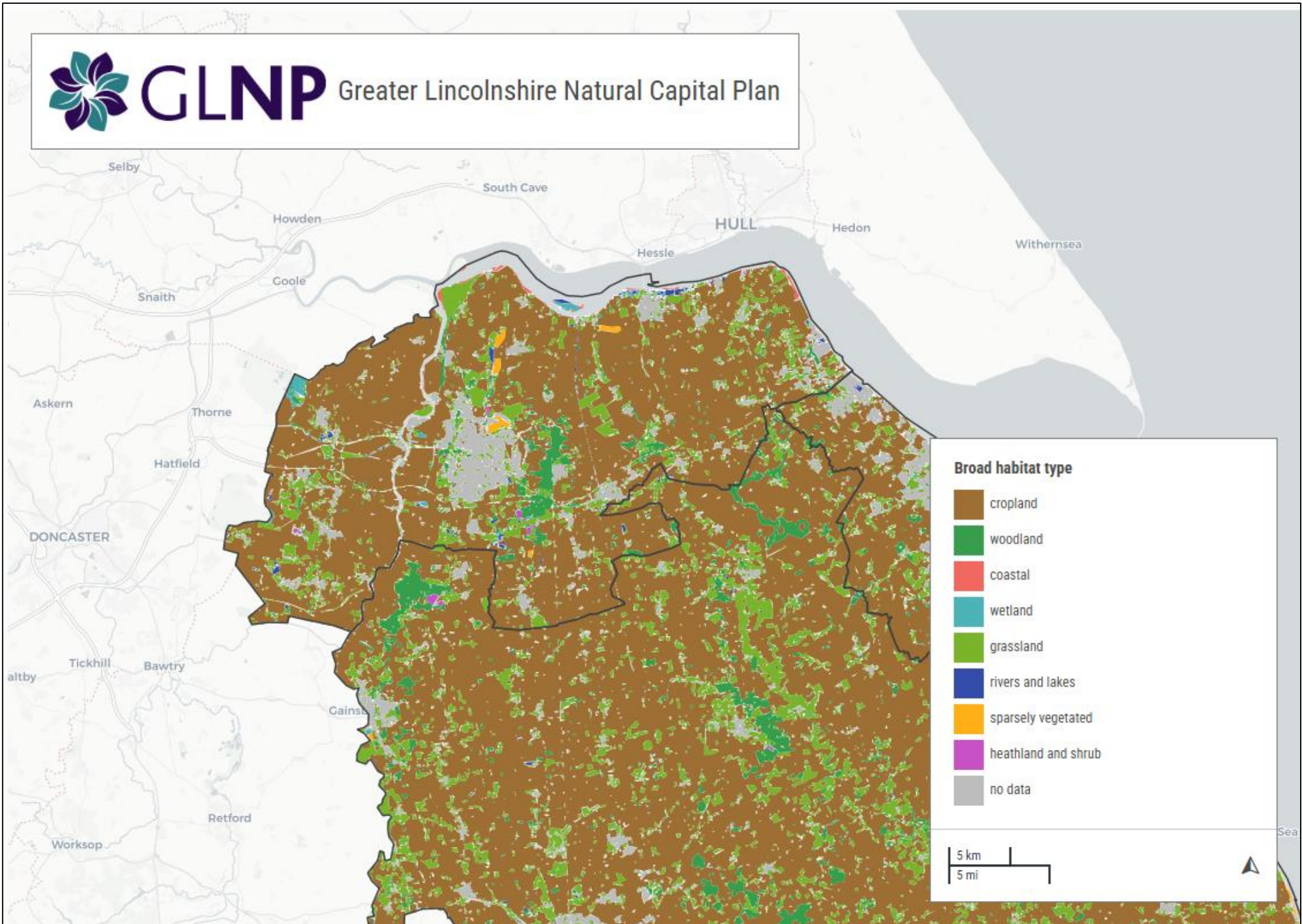
£3.1 billion
Total asset value of natural capital over the next 100 years.

£1.9 billion
Total asset value from **agriculture** over the next 100 years.
The largest asset value

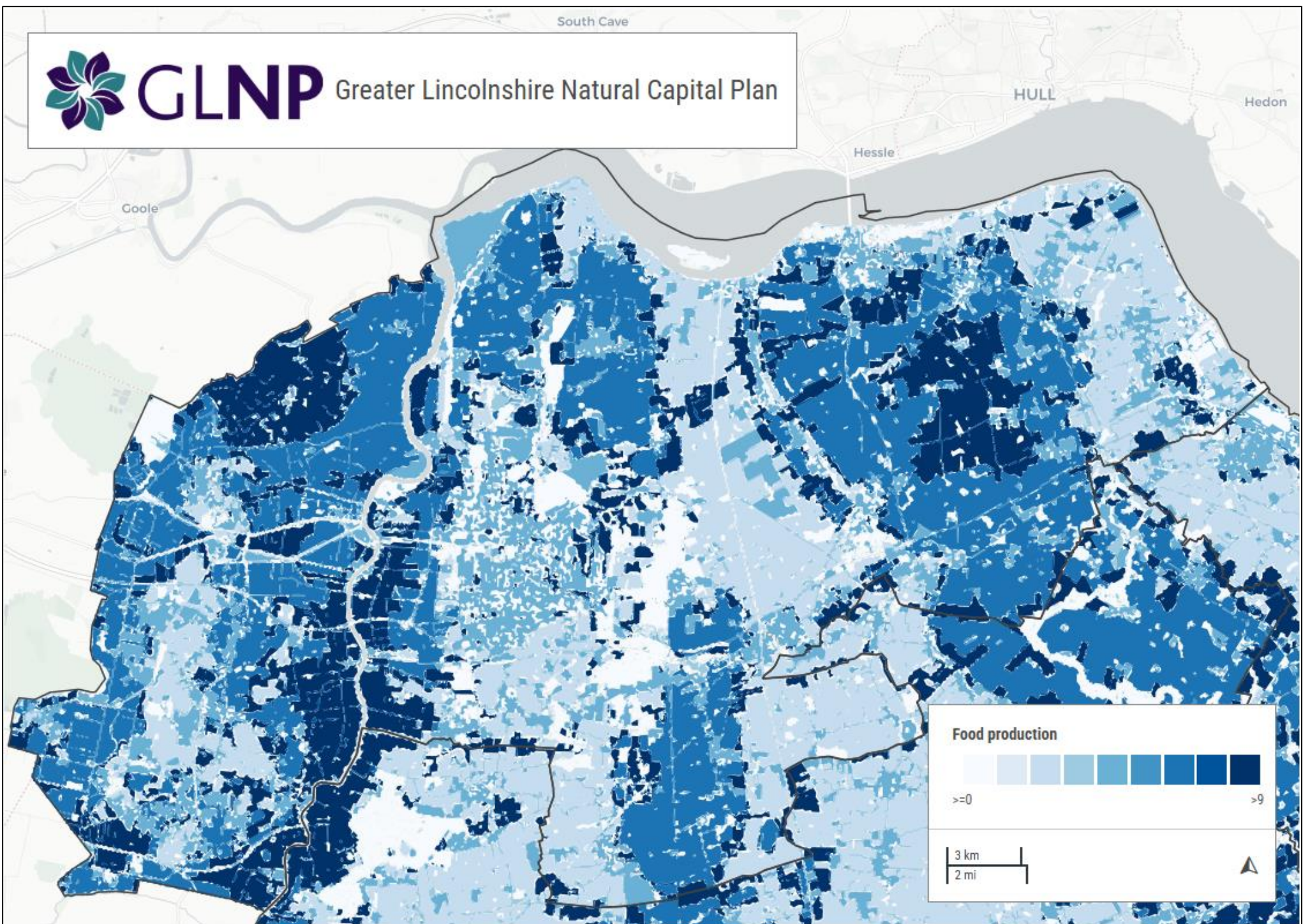


Natural Assets

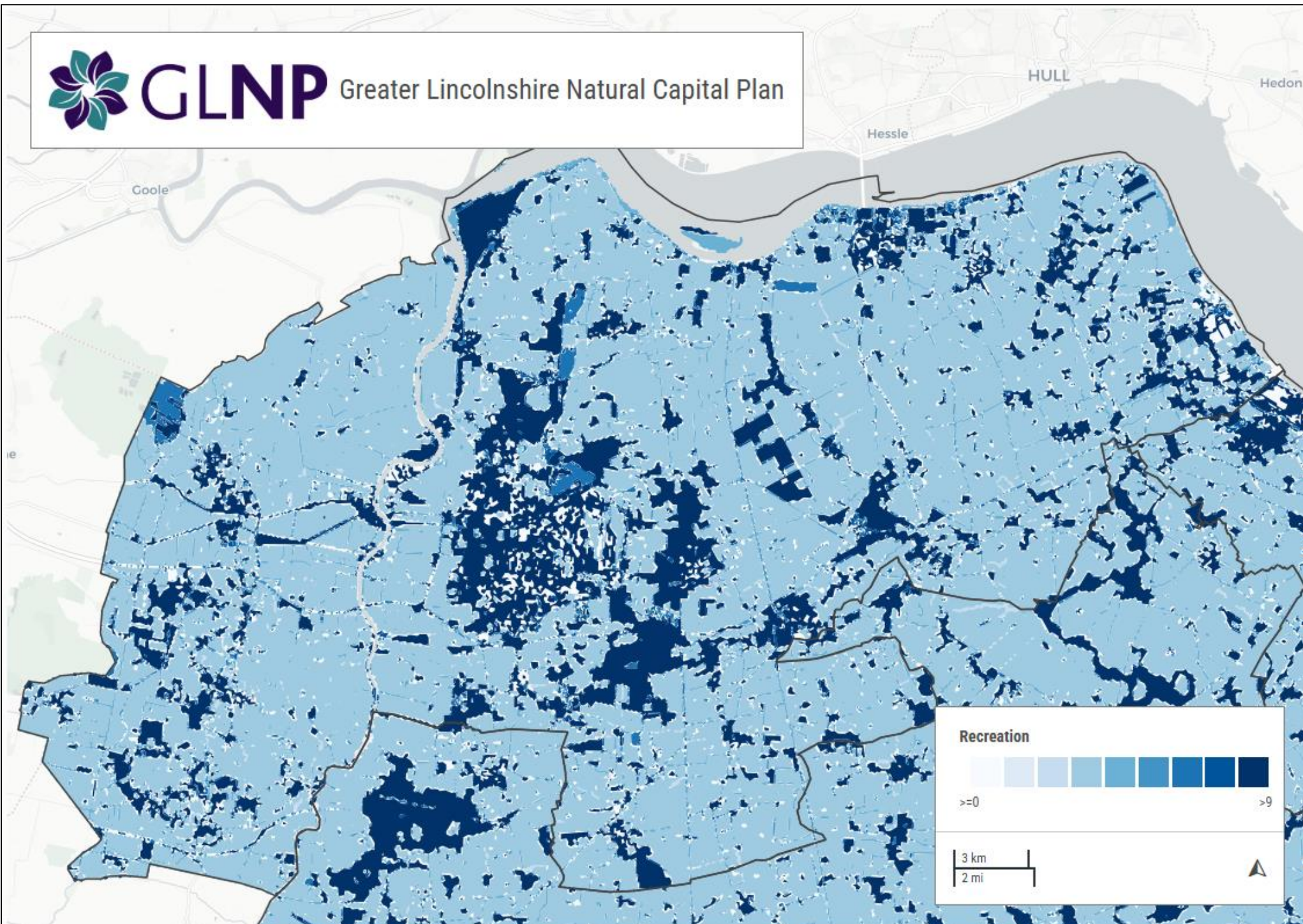
Agriculture and recreation were identified as the ecosystem services which provide the most value in the area covered by these accounts. The below maps show the area's overall natural capital stocks in the form of broad habitats as well as identifying areas of habitat with the greatest potential to provide these services. Please note that delivery of services may rely on accessibility of or proximity to beneficiaries.



Top Left: Broad habitat coverage of North Lincolnshire.



Bottom Left: Habitats with potential food production benefits.



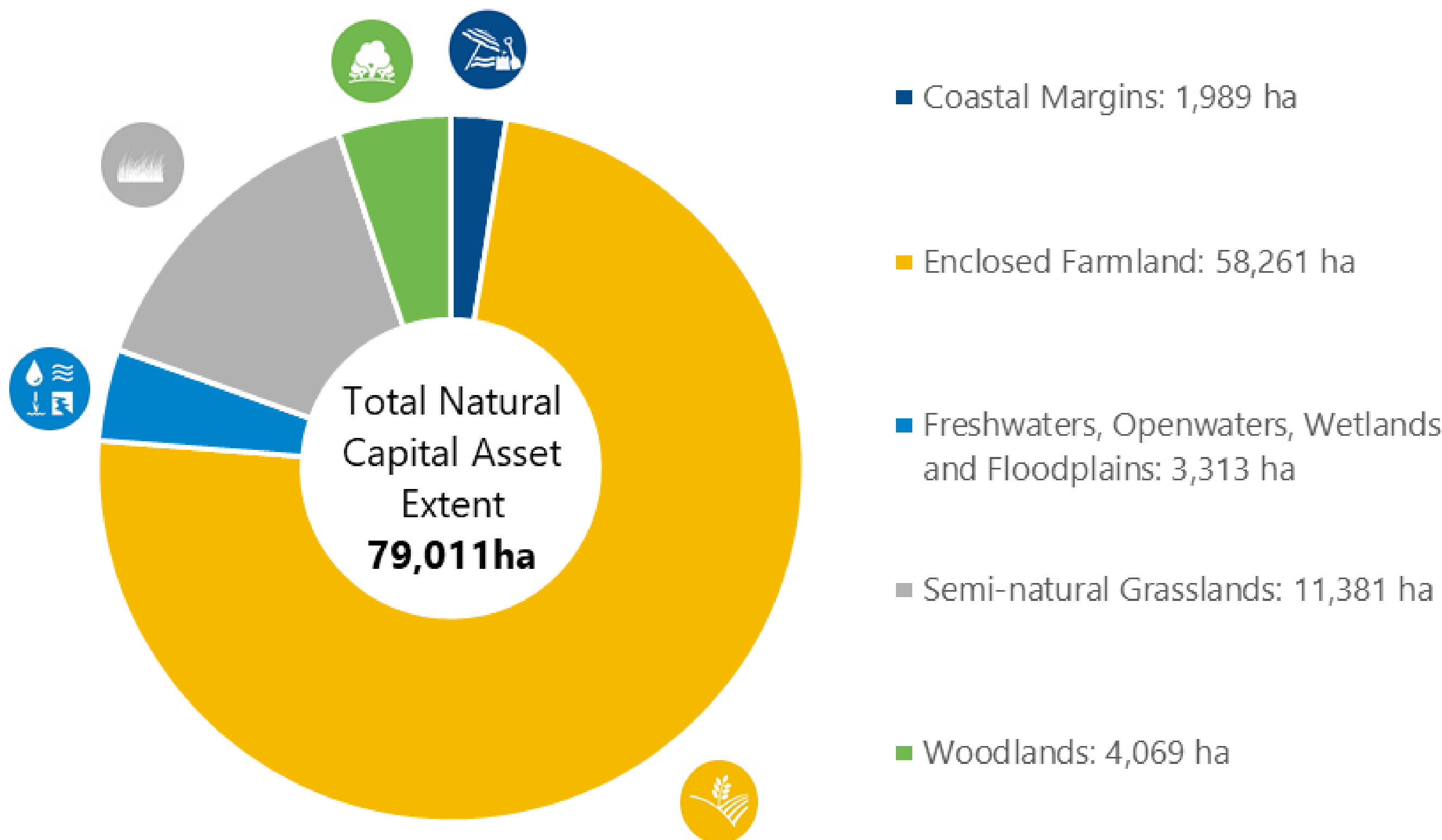
Bottom Right: Habitats with potential benefits for recreation.



Natural Assets

Enclosed Farmland makes up the majority of the area's natural assets, contributing to multiple ecosystem services including agriculture, recreation and health.

Natural Capital Extent



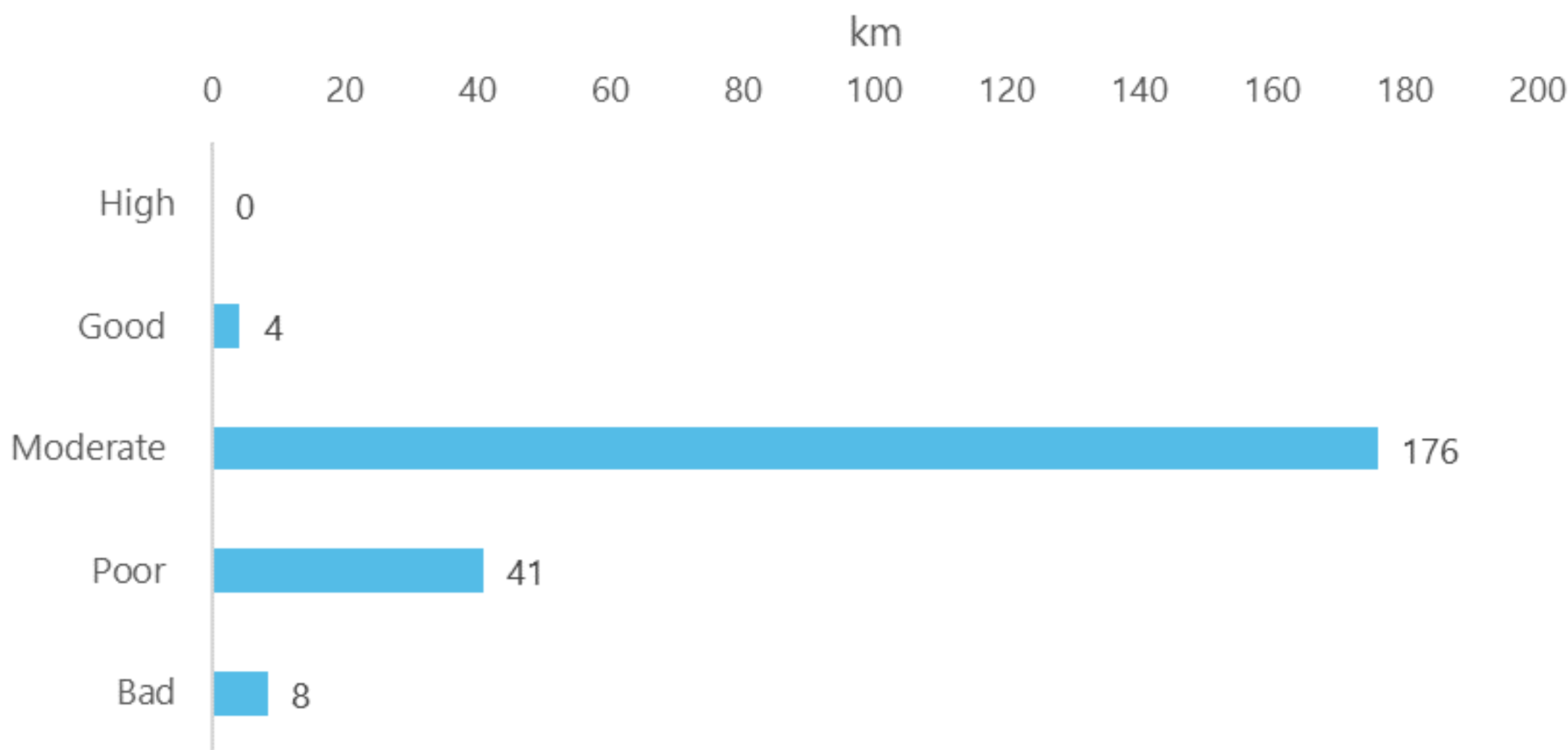
Risk Register

High: High likelihood the pressure will affect natural asset(s) relative to other pressures listed
Medium: Medium likelihood the pressure will affect natural asset(s) relative to other pressures listed
Low: Low likelihood the pressure will affect natural asset(s) relative to other pressures listed

Natural capital assets	Pressure on asset:	
	Quantity	Quality
Coastal Margins	High	High
Enclosed Farmland	Medium	High
Freshwaters, Openwaters, Wetlands and Floodplain	High	High
Marine	Medium	High
Mountains, Moorlands and Heaths	Medium	Medium
Semi-natural Grasslands	High	High
Urban	High	High
Woodlands	Medium	High

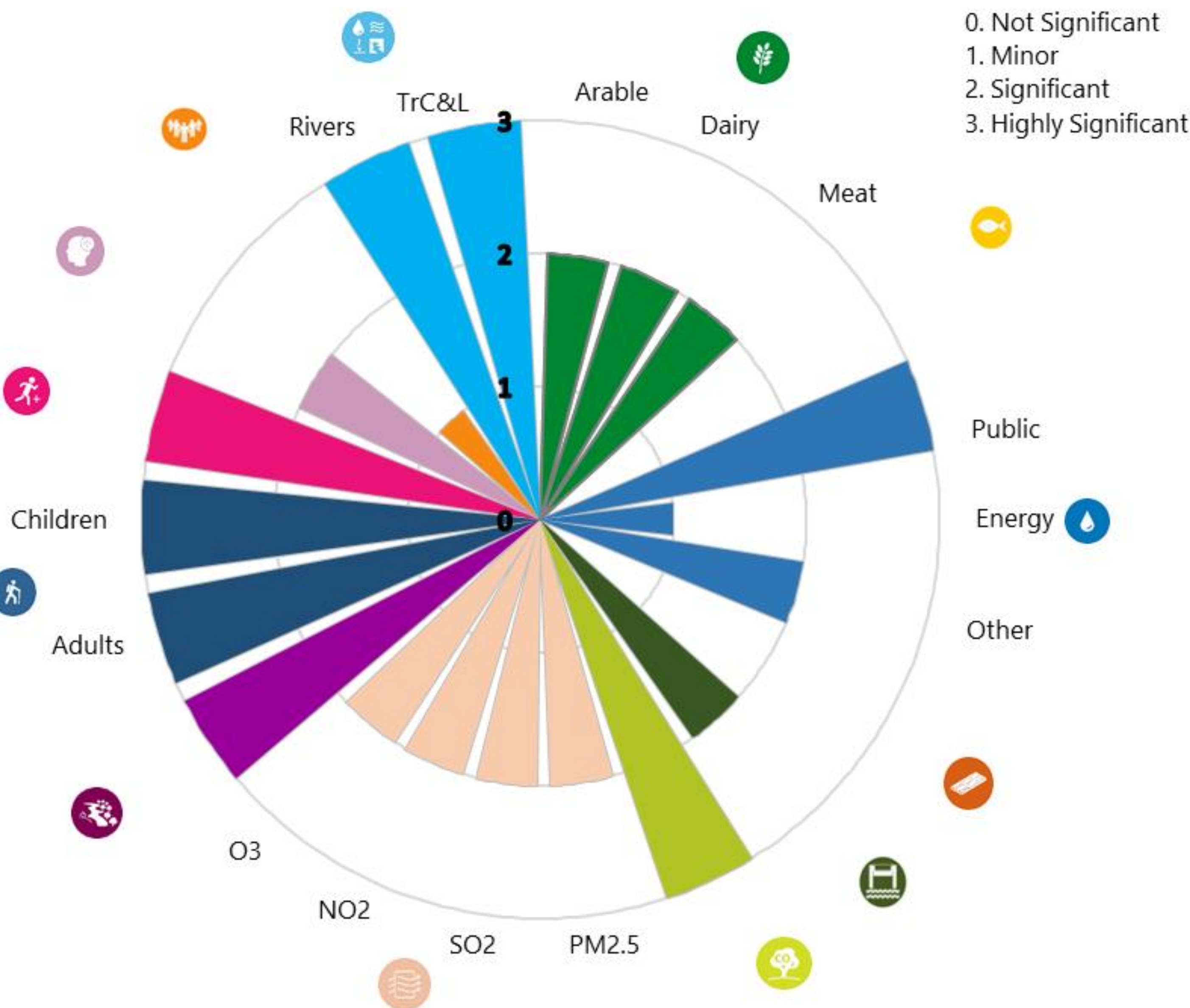
River Length by Ecological Status

Based on 2019 WFD Cycle 3 classification data



Ecosystem Services

Significance assessment for each of the ecosystem services in the place.
The sections of the wheel indicates the significance rating for each service provision from 3 highly significant, 2 significant, 1 minor and 0 not significant relative to the other services within the place and assuming the natural assets shown above are in good condition





Benefits

We have estimated the flows of ecosystem services that are derived from natural assets within this place, then estimated the value of the benefits those services provide . The analysis is not exhaustive and does not include all assets, services and benefits. We have indicated the confidence we have in the valuation as High (3 coloured squares), Medium (2 coloured squares), or Low (1 coloured square)



Natural Assets



Ecosystem Services

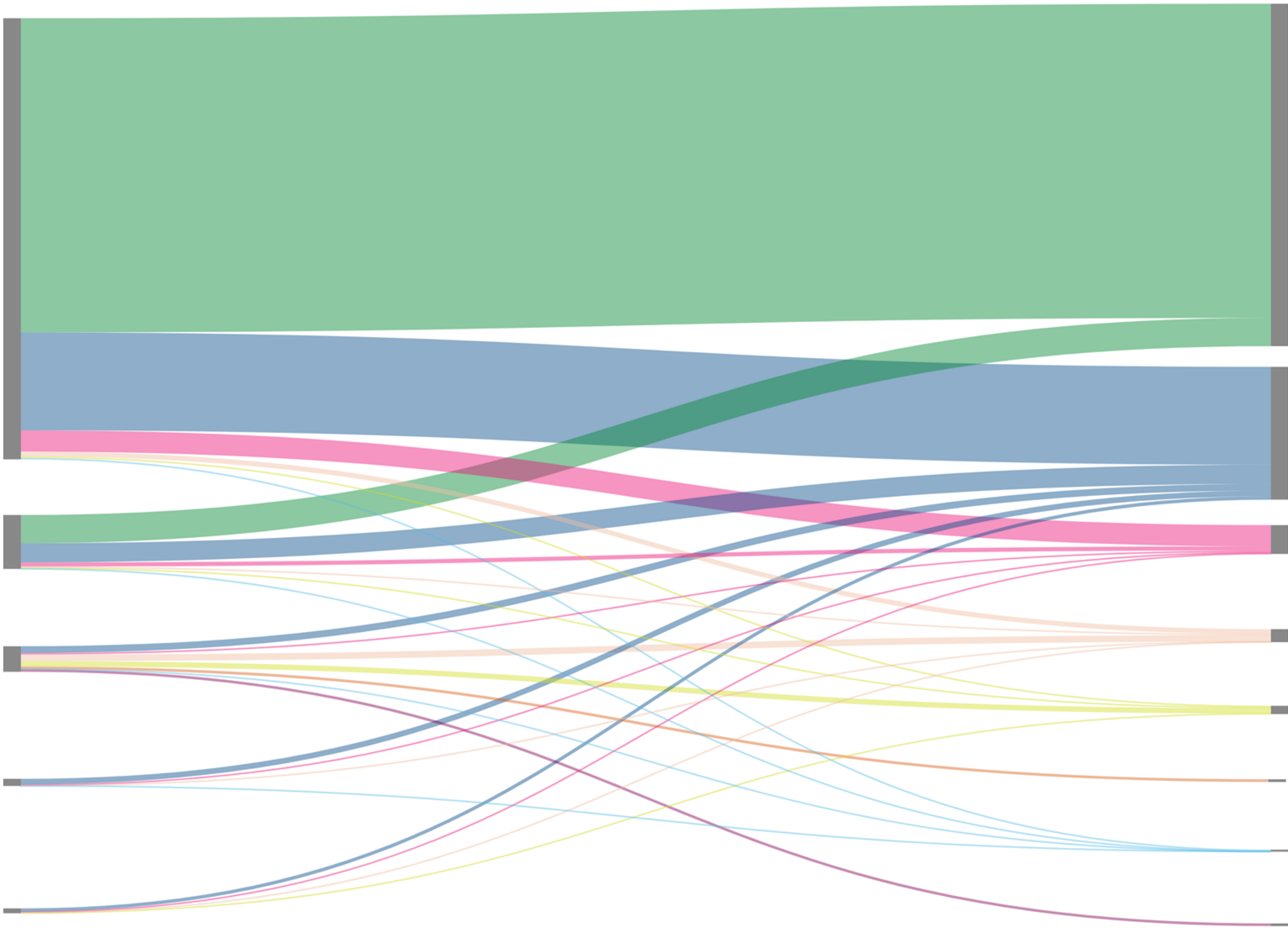


Benefits



Value

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Agriculture production from over 58,261 hectares of farmland



Welfare value from recreation of 7.7million visitors to open green space



Health benefits of active visits to green space



Avoided health damage costs due to the removal of over 4000 tonnes of air pollutants
The value of over 14,000 tonnes of carbon being sequestered from habitats, mostly by woodland. Climate change affects the social and environmental determinants of health



The net value of an estimated 18,200 m3 volume of timber removed per year



The welfare benefit of good water quality



The estimated value of more than 1.1m m3 of flood storage provided by woodlands

£3.1 billion
Total asset value for natural capital over the next 100 years.

£100 million
Total annual value of services From natural capital

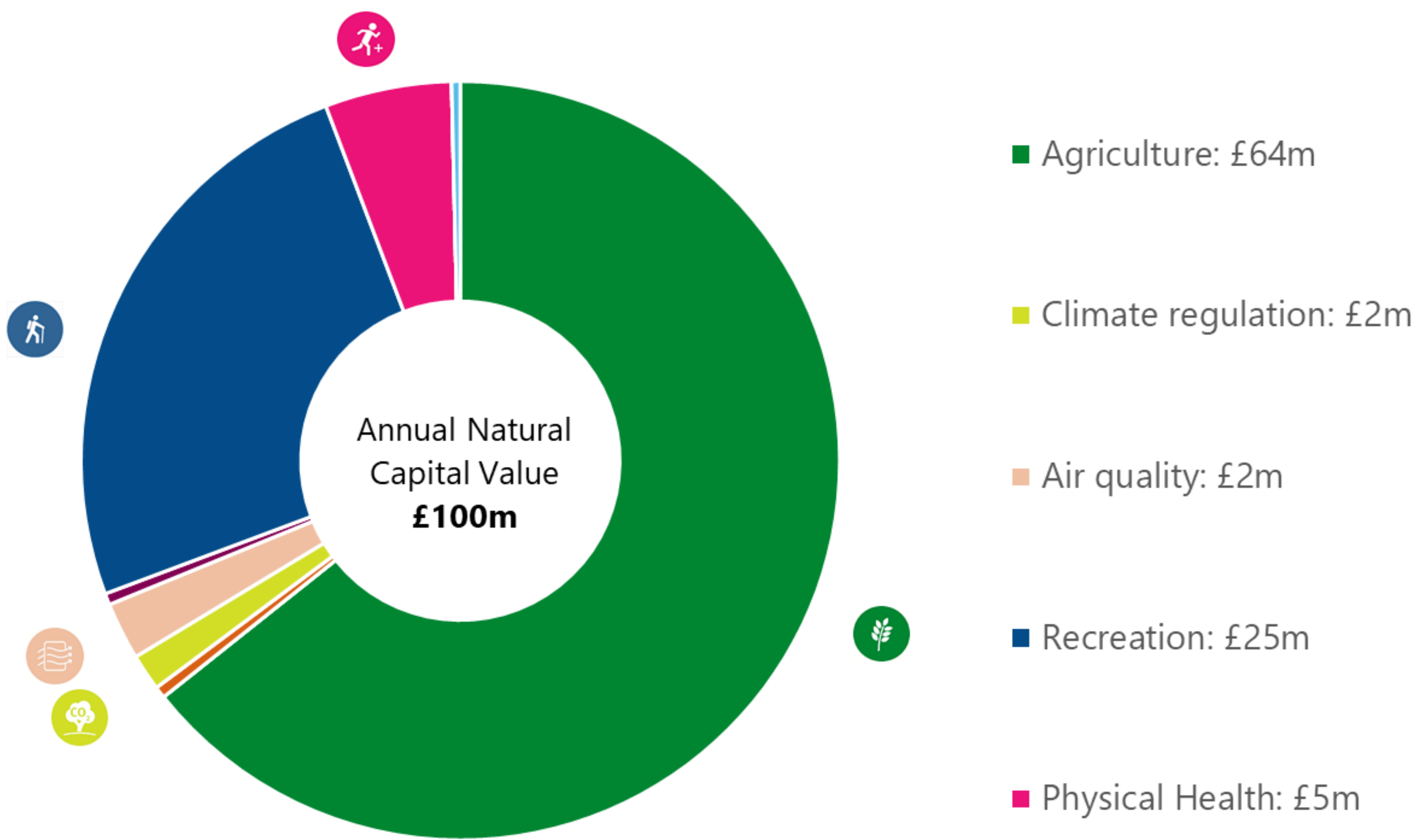
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This account does not calculate values from marine assets (unless fish landing data is included)



Value of natural capital benefits

The ecosystem services for this place have been quantified, with a conservative estimated benefit value of £ 100m annually.



Note: not all services and benefits can be quantified.
The total values of assets and services in a natural capital account will always be an underestimate. It is not possible to present the total value of all the services provided by a place only a partial estimate. However the assessment is sufficiently illustrative of the significant value that the natural capital provides to its communities and businesses.

Additional Values

The natural capital account for Greater Lincolnshire also identifies a small value provided to education and volunteering, however the data set was not considered great enough for the totals illustrated by the tool to be considered to be a true reflection of the value. Please see the complete accounts for Greater Lincolnshire for figures.

While not included within this account, due to lack of data it is recognized that there is a value of nature to water abstraction within Greater Lincolnshire.

For services valued at less that £1m per year please see full account available as a spreadsheet.

Input data sources

- Habitat quantity data for 8 broad habitat types – Lincolnshire Environmental Records Centre Data.
- Habitat quantity data for saltmarsh – Lincolnshire Environmental Records Centre Data
- Peatland extent - Lincolnshire Environmental Records Centre Data
- River; Transitional and coastal waters; lakes ecological status – EA WFD classifications 2019
- Operational catchments - <https://data.gov.uk/dataset/71581966-1935-411e-ab66-f32d960497e8/wfd-surface-water-operational-catchments-cycle-2>
- Water supply (all) – EA water resources GIS (2019)
- Installed hydrogeneration capacity - BEIS Renewable electricity generation by local authority 2018 (.gov.uk)
- Fish landings - MMO (2019) UK Sea Fisheries Annual Statistics Report 2018
- Recreation, visits by socio economic group – Outdoor Recreation Valuation Tool, University of Exeter
- Recreation, Welfare values by socio economic group - Outdoor Recreation Valuation Tool, University of Exeter
- Education – Local groups and organisations
- Volunteering – Local Groups and organisations
- Data used to estimate the benefit flows and valuation of ecosystem services is described in the Environment Agency Natural Capital Register and Account Version 1 - Technical Report (January 2021)

Caveats and limitations

- A natural capital register and account will only ever reveal a partial value of nature.
- There are many services and functions of nature that are not valued in this tool (e.g. noise regulation; pollination; flood regulation by saltmarsh and wetlands for example) and there are many ecosystem services that can not be effectively valued in any account e.g. the value of biodiversity.
- There are values for ecosystem services presented here. These are intended to show a partial view of what nature provides to the local economy for free, or little input; rather than a price, or a value for exchange. Previously natural resources have not been valued at all, leading to reduction in, or mismanagement of the asset.
- Please note that agricultural value has been calculated using an national average breakdown between the constituent parts of the sector. This is due to discrepancies in the CORINE Land Use data relating to the area.

Benefit description

Agriculture

Agriculture production from over xxx,xxx hectares of farmland. XX% arable land by area (xx% of the annual value). XX% pasture land by area (livestock accounting for XX% of the annual value)

Recreation

Welfare value from recreation of XXX million visitors to open green space across [template].

Physical health

Health benefits of active visits to green space.

Water supply

The value of water abstracted for domestic use, agriculture, industry and power generation (cooling). Access to clean water underpins our health and industry.

Water Quality

The welfare benefit of good water quality which includes safety of recreation, clarity, flow, and thriving invertebrate, plant, and fish populations.

Air quality

Avoided health damage costs due to the removal of X.X million tonnes of air pollutants.

Climate Regulation

The value of XXX,XXX tonnes of carbon being sequestered from habitats, mostly by XXXX. Climate change affects the social and environmental determinants of health.

Timber

The net value of an estimated XX,XXX m3 volume of timber removed per year across [template] Area

Hazard regulation (N)

The estimated value of X.X million m³ of flood storage provided by woodlands across the [template]

Fish

Estimated market value of marine fish landings from local boats

Volunteering

The estimated value of time spent on nature-based volunteering

Education

The additional benefit of nature-based school educational visits

Renewable energy

Value of installed capacity for hydropower generation

Habitat type icons

Farmland	
Urban	
Semi-natural grassland	
Water and wetlands	
Woodlands	
Coastal	
Marine	
Mountains, moorlands and heath	

Ecosystem services icons

Agriculture		Climate regulation	
Water Quality		Renewable energy	
Volunteering		Recreation	
Air quality		Water Supply	
Timber		Fish Landings	
Education		Physical Health	
Hazard Regulation			