Strategic Landscape Plan

Brit Valley & Marshwood Vale

DEFRA Environmental Land Management Scheme Test & Trials

This document is an output from the Dorset AONB Environmental Land Management Scheme Test and Trial, delivered by Westcountry Rivers Trust.

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Contents

Introduction

How this document works 4

Natural Capital, Ecosystem Services and Public Goods 5

Brit Valley & Marshwood Vale Overview 6

Landscape Character 7

Natural Assets Overview: Land Use & Habitats 8

Natural Assets Overview: Geodiversity & Soils 9

Thematic chapters

Clean and Plentiful Water 11

Thriving Plants and Wildlife 17

Flood Protection 27

Wildfire Risk 33

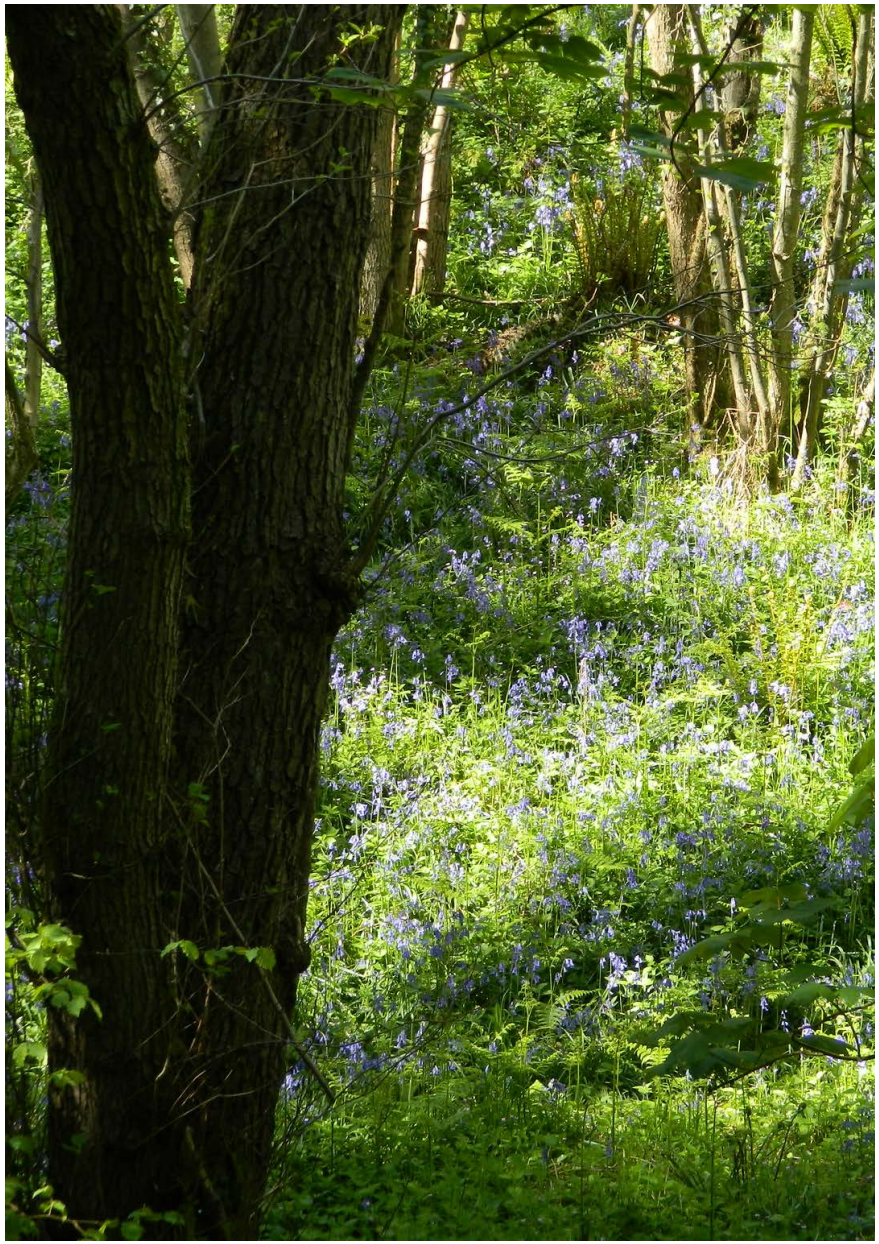
Clean Air 36

Access 41

Built Environment 46

Climate Regulation 49

Appendices, data sources and references 52



Between Netherbury and Salway Ash by Micheal Day (CC BY-NC 2.0)

How this document works

This document is a strategic landscape scale plan for environmental improvements in the Brit Valley & Marshwood Vale area of the Dorset AONB.

The plan is built on multiple layers of mapped environmental information. This information has been used to explore the current state of the environment and then map areas for further investigation and actions to make improvements.

This landscape scale assessment will be used to guide prioritisation for investment through the new Environmental Land Management Scheme (ELMS).

The plan has 8 key chapters, based on key public goods. Some of the public goods have been split into two chapters:

- Clean and Plentiful Water
- Thriving Plants and Wildlife
- Protection From and Mitigation of Hazards
  - Flood Protection
  - Wildfire Risk
- Clean Air
- Beauty, Heritage and Engagement
  - Access
  - Built Environment
- Climate Regulation

Each chapter begins with a logic chain, which lays out how the theme has been mapped. The chapters cover three key stages:

1. **Quantity and location** of natural assets related to the theme
2. **Quality** and condition of these assets
3. **Areas for investigation and action** to make improvements, which will be used to help target action through ELMS

As far as possible, stages 1 and 2 have been based on the indicators identified in the Natural England Natural England Indicators [1] and Natural Capital Atlas [2] projects.

It is not possible to map all aspects of the health of the natural environment with existing datasets, and the true state of the environment may not be fully reflected in the datasets for various reasons including the age of the data, the resolution, and the level of local knowledge taken into consideration when the data has been collected and mapped.

Assessing the quality and condition of natural assets in particular is challenging due to the level of detail required. Nonetheless, the available data has been reviewed and the best data currently available has been used. Each dataset is listed next to the map, identified as local (L) or national (N) and given a Red, Amber or Green rating for its resolution and age. There is more detail about the datasets on page 54.

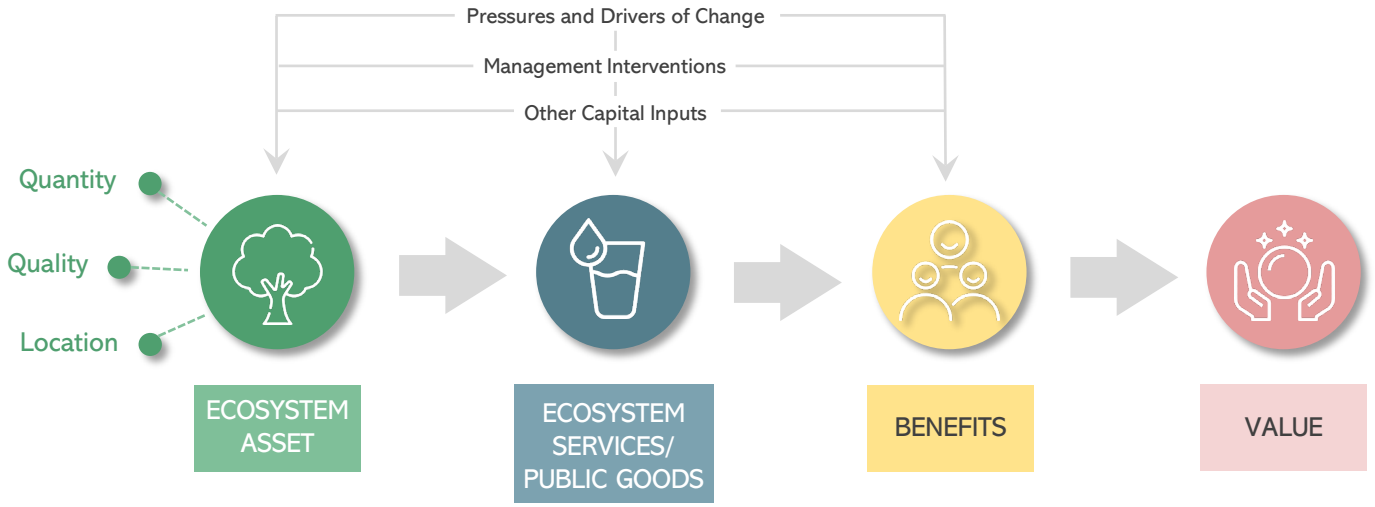
Natural Capital, Ecosystem Services and Public Goods

The Dorset AONB ELMS Test & Trial, and ELMS as a whole, is taking a '**natural capital approach**' to understanding the local environment, the benefits it provides, and how we can improve and enhance this in the future.

Natural capital is a term which covers all the parts of nature which are valuable to us as people. When we talk about natural capital, we talk in terms of 'assets'. **Natural assets** include land, soils, freshwater, air, oceans and species.

These assets can deliver value to people by providing '**ecosystem services**'. These 'services' include clean water, clean air, opportunities for recreation, and protection from hazards such as flooding. For example, a woodland is a natural asset and it provides services such as clean air and opportunities for recreation, which in turn brings benefits and value to people who live around the woodland. The diagram below show the links between assets, service and benefits.

'**Public goods**' are similar to ecosystem services, but they are a particular subset which are both '**non-excludable**' (if the good is available to one person, others cannot be excluded from the benefits it provides) and '**non-rival**' (if the good is consumed by one person it does not reduce the amount available to others) which are being focused on through Defra ELMS.



Adapted from © Natural England, 2019 [3]

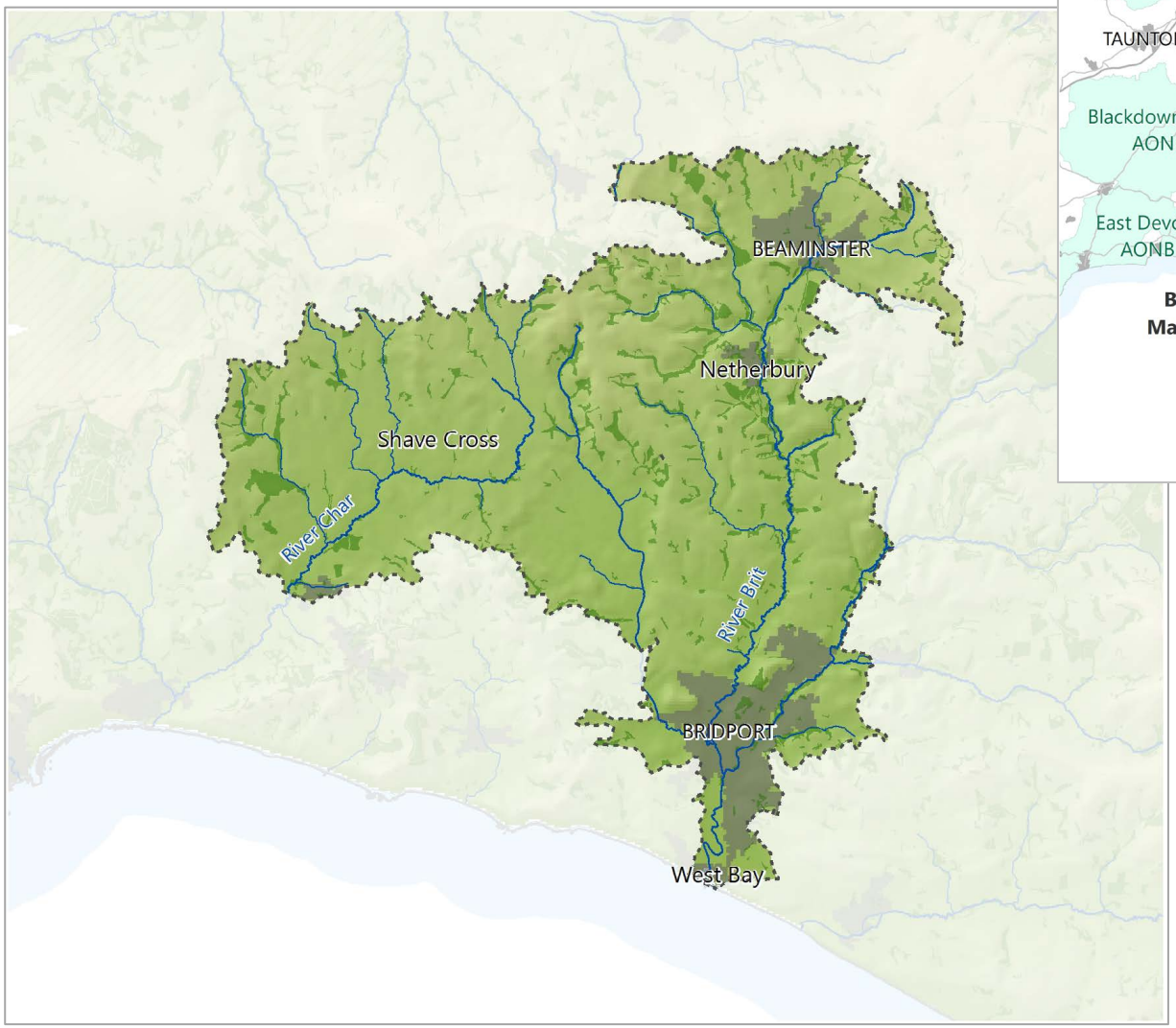
The ability for a natural asset to provide benefits is affected by where it is, how much of it there is and the quality or condition it is in. The assets and services can also be affected by negative pressures, or positive interventions and investment taken to improve them.

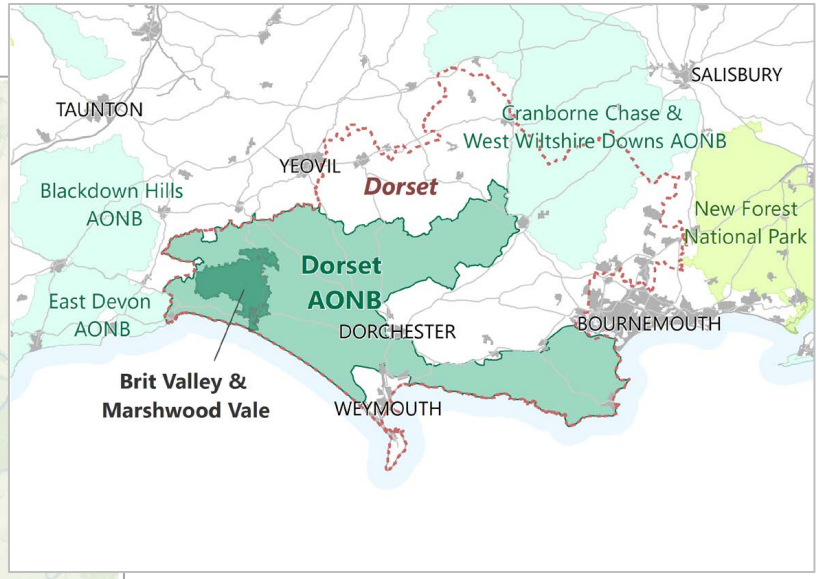
By thinking about natural assets, ecosystem services and the benefits they bring us, it is possible to make informed plans for looking after the natural environment. It gives a compelling case for reducing negative pressures and increasing positive interventions, because there is a clear link to the value it brings us.

Brit Valley & Marshwood Vale Overview

The **Dorset Area of Outstanding Natural Beauty** (AONB) is a landscape protected for its significant natural and cultural heritage. The landscape is shaped by the topography, geology, hydrology, wildlife, archaeology and culture.

Brit Valley & Marshwood Vale is an area within Dorset AONB. The area is home to two of the main towns in the AONB; Bridport and Beaminster.





Dorset AONB Fact File [4]

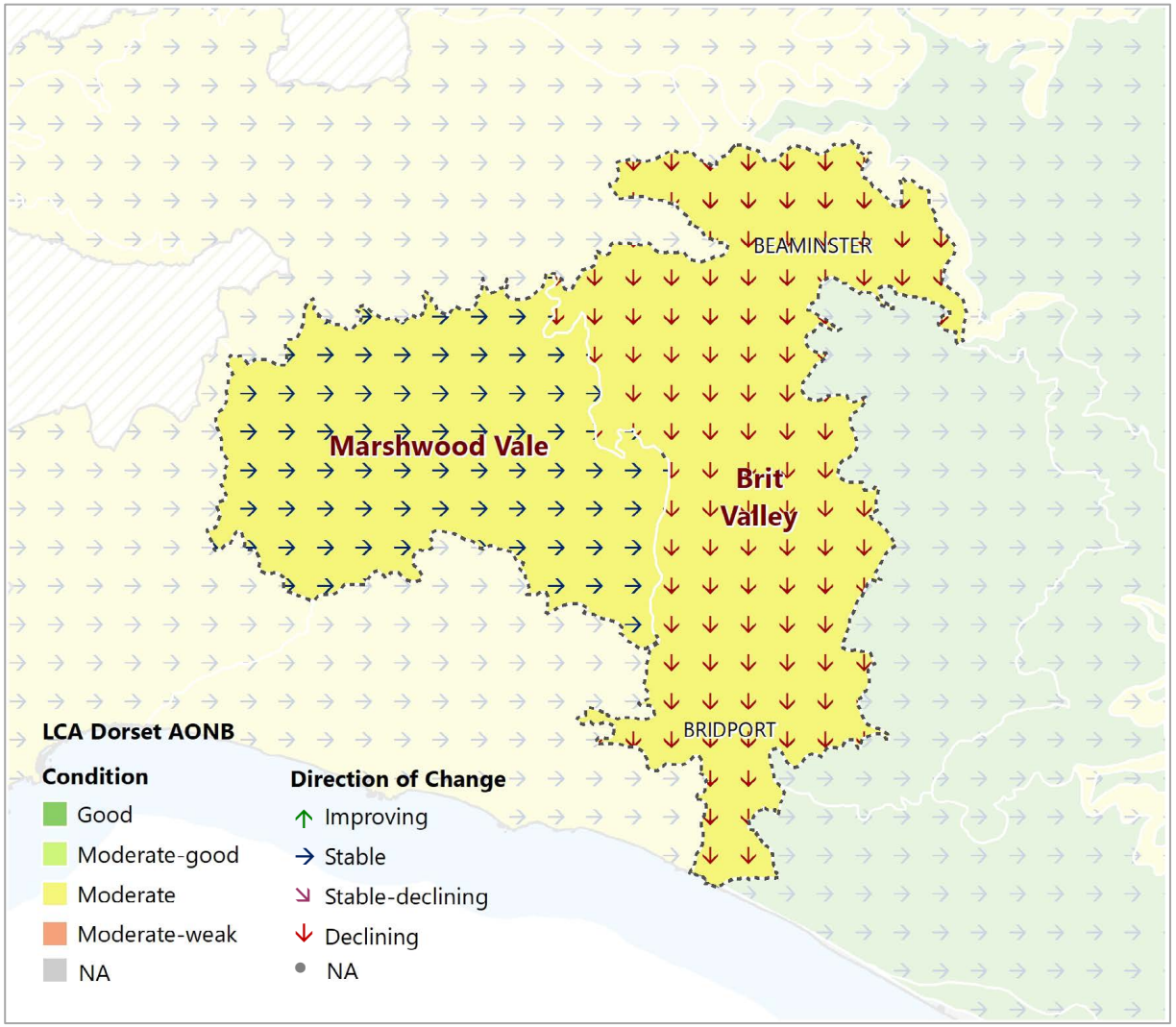
- Designated in 1959
- 5th largest AONB in the country
- 1,129km^2
- Covers 42% of the county of Dorset, and small areas of Devon and Somerset
- Home to a large section of the Jurassic Coast World Heritage Site
- Includes over half of Poole Harbour, including Brownsea Island and the smaller islands
- Home to 74,600 people
- 70% is privately owned and actively farmed

Find out more at www.dorsetaonb.org.uk

Datasets used in maps: OSV, AONB, OSBL, LCA, OSS, NP, WFDL, DHM, ONSBU, DTM50.
See page 54 for full references.

Landscape Character

Dorset AONB is more than just one special landscape – it is a collection of landscapes, each with its own characteristics and sense of place. Dorset AONB's Landscape Character Assessment describes the features and qualities of the landscape, by subdividing the area into character types and character areas, and assessing their condition. The Brit Valley & Marshwood Vale area is made up of two Landscape Character Areas.



Datasets used in map: OSV, AONB, OSBL, LCA. See page 54 for full references.

Brit Valley[5]

Landscape Character Type: Undulating River Valley

Strength of Character: Moderate

Condition: Moderate

Direction of Change: Declining

Description:

The diverse settled area of the Brit Valley runs from the bowl-shaped vale around Beaminster, southwards towards Bridport and finishes at West Bay along the coast.

Marshwood Vale[5]

Landscape Character Type: Clay Vale

Strength of Character: Strong

Condition: Moderate

Direction of Change: Stable

Description:

The Marshwood Vale, comprising much of the catchment for the rivers Char and Simene, is a traditional, largely undeveloped pastoral clay vale.

Data sources (more detail on page 54)

Dataset	Level	Res.	Date
Landscape Character Areas	L	●	●

Landscape Character

Each Landscape Character Area has its own 'Management Guidelines', to help protect distinctive characteristics of the area through land management.

Brit Valley[5]

The overall management objective for the area should be to conserve the open and undeveloped character of the floodplains, wet woodlands and damp meadows with enhancement and restoration of hedgerows and hedgerow trees. Protection of the area from the influence of further intrusive development is a key objective.

Management guidelines

- Conserve the ancient pattern of small irregular pastoral fields and narrow lanes interspersed with irregular patches of woodland.
- Replant hedgerow sections where historical loss has taken place and plant new hedgerow trees.
- Enhance woodland management, particularly coppice woodlands with small scale planting of broadleaves along valley sides.
- Promote conservation to low impact grassland management.
- Enhance the function of habitats in supporting the wider ecological network.
- Remove poplars in open locations.
- Promote restoration of orchards and parkland landscapes.
- Encourage maintenance of species rich hedgerows, particularly along the valley floors and replant any gaps where necessary.
- Protect watercourses and associated wildlife from soil erosion and the effects of diffuse pollution.
- Promote screening views to intrusive agricultural buildings/structures and settlement edges through planting new small-scale broadleaved woodlands.

Marshwood Vale[5]

The overall objective is to conserve the patterns and features that contribute to the rural, tranquil landscape of small-scale pastoral fields, winding lanes and small scattered settlements. Restore elements in decline such as the hedgerows and hedgerow trees, wet pasture and wet woodlands, particularly where these strengthen riparian corridors.

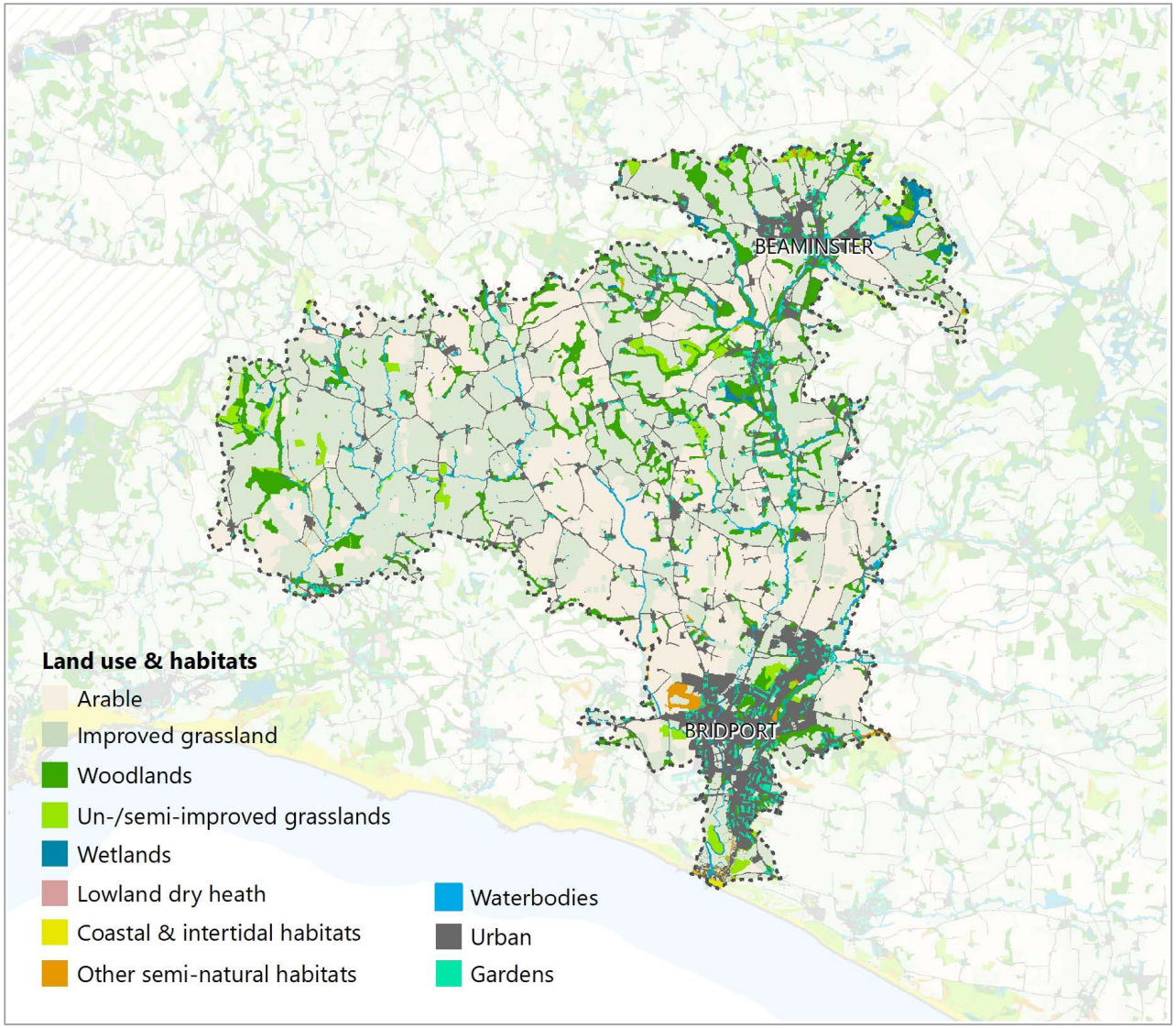
Management guidelines

- Encourage maintenance of boundaries, particularly along the valley floors and replant any gaps.
- Plant new hedgerow oaks.
- Restore stream side habitats and wet woodlands and consider extending wet woodland, particularly around existing settlements and farmsteads.
- Conserve and enhance management of neutral unimproved meadows and encourage restoration where appropriate.
- Protect watercourses and associated wildlife from soil erosion and the effects of diffuse pollution.
- Encourage restoration of traditional orchards.
- Restore and manage pollard trees.
- Protect the consistent pattern of enclosures and surviving strip and open fields.
- Restore remaining coppice woodlands around the vale edge.
- Enhance the function of habitats in supporting the wider ecological network.

Natural Assets Overview:

Land Use & Habitats

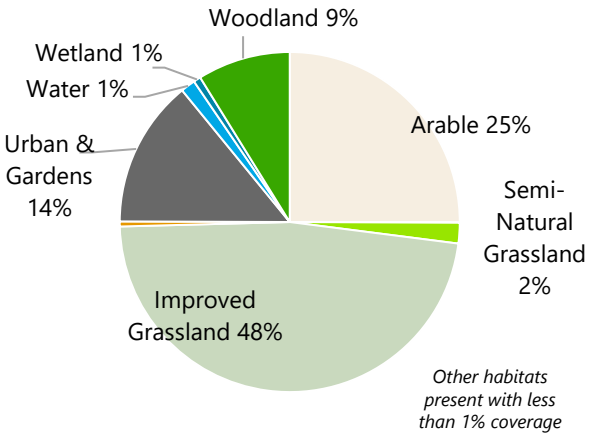
The way land is used is very important for understanding natural capital and its ability to provide benefits.



Datasets used in map: OSV, AONB, OSBL, LCA, DHM. See page 54 for full references.

Dorset AONB have created a detailed habitat map which shows various important habitats including woodlands, wetlands, heathlands and coastal habitats, as well as agricultural and urban land uses. This map gives an overview of the various land uses. Selected elements of this map are shown throughout the different thematic chapters to highlight land uses which help to provide each of the public goods.

The chart below shows the proportional coverage of the different land uses across the Brit Valley & Marshwood Vale area.



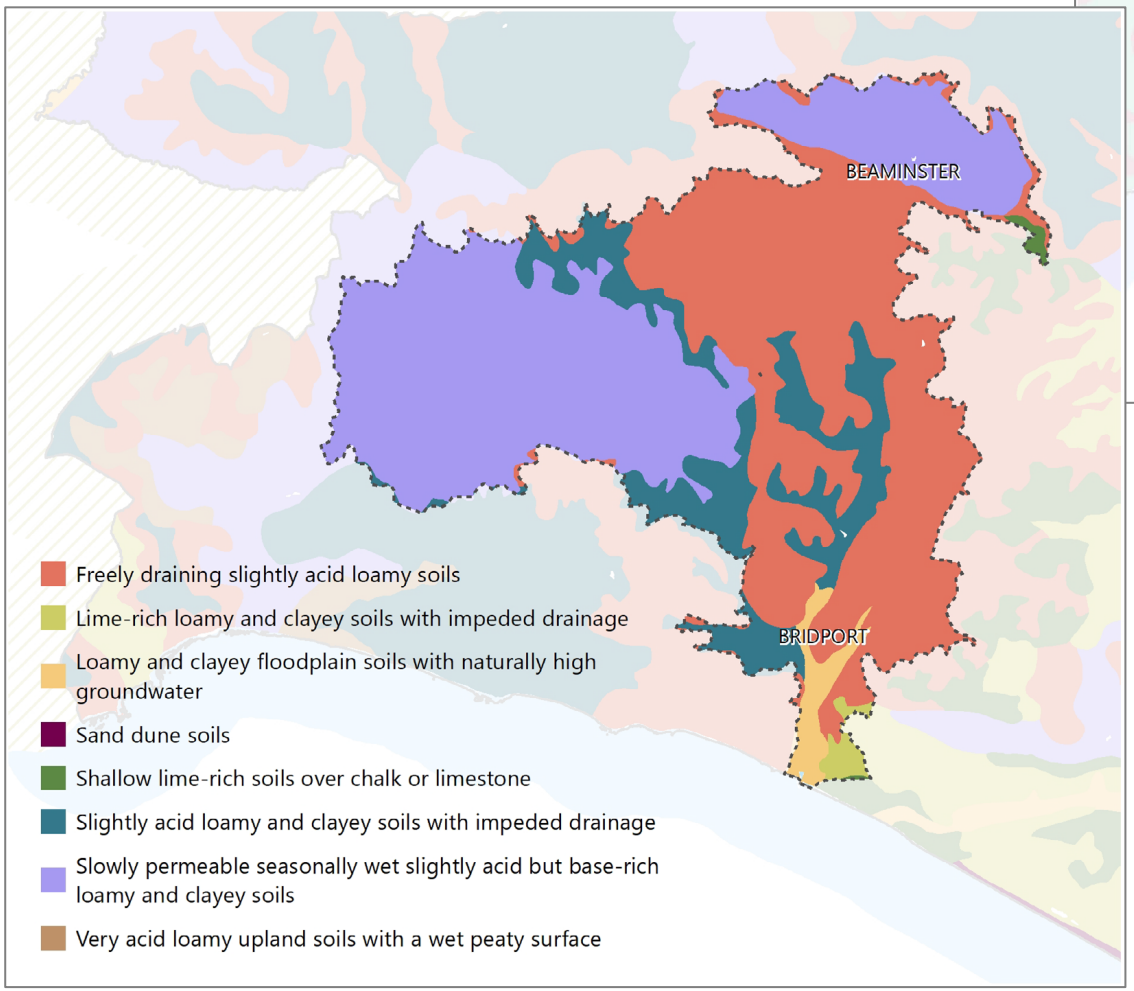
Data sources (more detail on page 54)

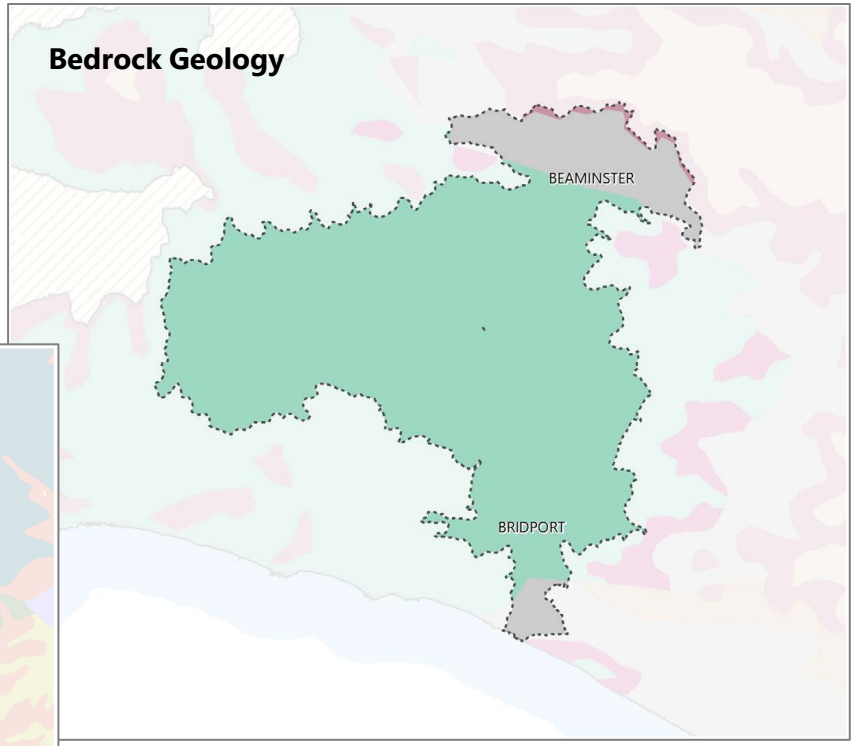
Dataset	Level	Res.	Date
Dorset Habitat Map	L	●	●

Natural Assets Overview:

Geodiversity & Soils

Geodiversity is the variety of rocks, minerals, landforms, geomorphological processes and soils which together form the basis of how our landscapes look and function. Geodiversity directly affects the species and habitats present and the natural processes which take place in a landscape.





▲ **Bedrock geology types and description, grouped by age:**

Cretaceous

Gault & Upper Greensand
Mudstone, sandstone and limestone

Jurassic

Great Oolite Group
Sandstone, limestone and argillaceous rocks

Inferior Oolite Group
Limestone, sandstone, siltstone and mudstone

Lias Group
Mudstone, siltstone, limestone and sandstone

Data sources (more detail on page 54)

Dataset	Level	Res.	Date
NATMAP Soils	N	●	●
BGS 625k Bedrock Geology	N	●	●

Datasets used in map: OSV, AONB, OSBL, LCA, NAT, BGS. See page 54 for full references.

Clean & Plentiful Water

Clean and plentiful water is vital for a huge variety of our activities, and for supporting healthy ecosystems. Good water quality supports an efficient water supply, healthy habitats and cultural services. A plentiful water supply is important for drinking water and household use, irrigation, industrial use and for maintaining habitats.

1. Map current state of natural capital in relation to clean and plentiful water

Based on Natural England Indicators and Natural Capital Atlas project

- Quantity and location
- Quality
- Service flow

Note: this section will combine two ecosystem services from the indicators project – water supply and water quality

2. Map areas for investigation and action for reducing risk to water quality

Score and combine factors according to risk to water quality:

- Areas close to rivers
- Areas of surface flow (SCIMAP modelling[6])
- Slope
- Soil type
- Land use

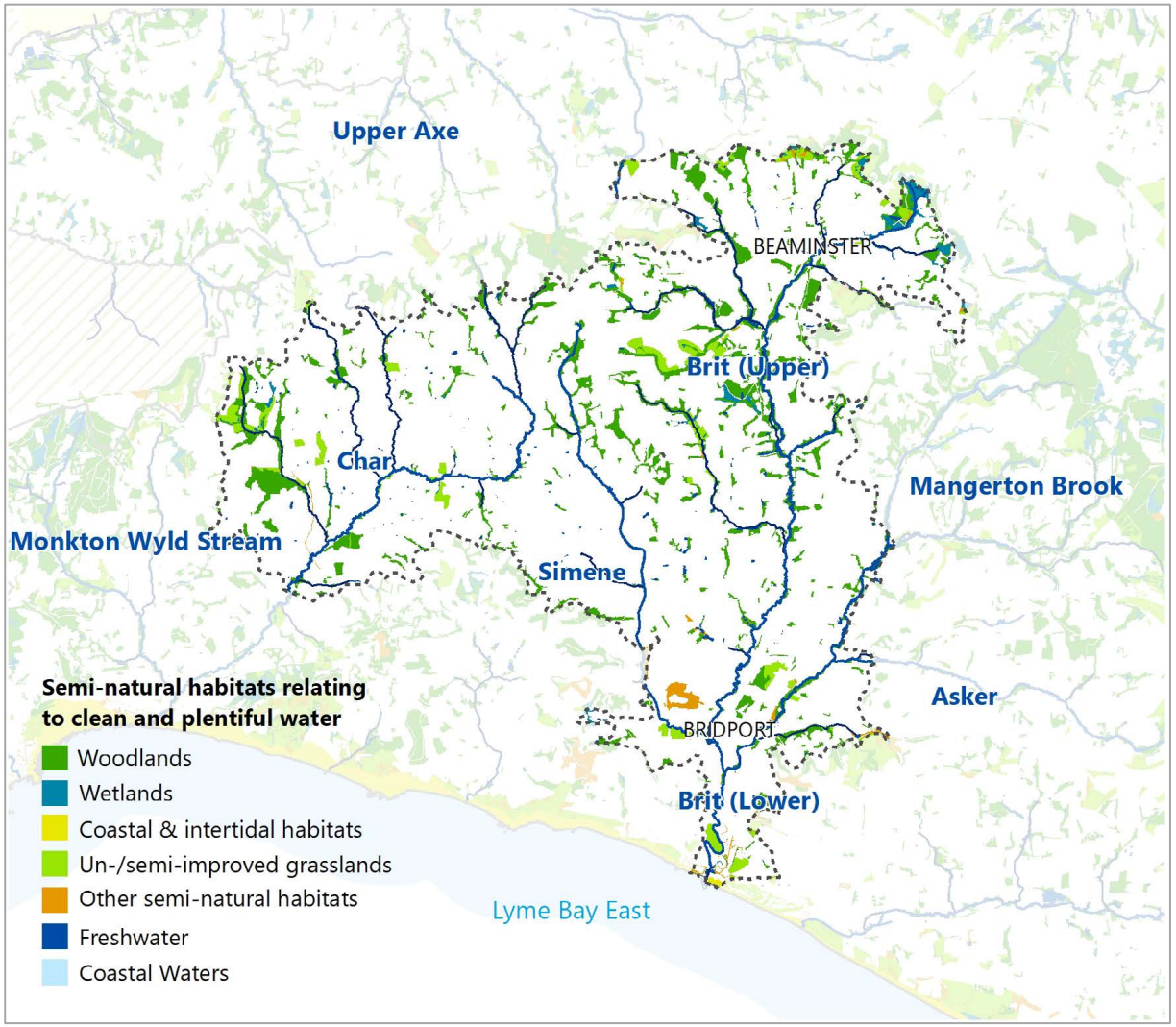
→ Areas which are likely to pose a risk to water quality – areas for investigation/action

Note: this section will focus on water quality, as land management can have a significant impact on this service

Clean & Plentiful Water

1. Indicators of Current Provision: Quantity & Location

The natural assets mapped on this page contribute to the ecosystem services of water quality and water supply. Where the assets are present the landscape is likely to be contributing to the provision of plentiful water and the protection of good water quality, and where the assets are absent (where the map is white) there may be a lack of natural assets which contribute to these services.



Data sources (more detail on page 54)

Indicator	Dataset	Level	Res.	Date
Semi-natural habitats	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●
Main waterbodies	EA WFD assessed waterbodies: - Rivers - Lakes & reservoirs - Transitional waters - Coastal water	N	●	●
	OS Rivers (to show smaller rivers not assessed under WFD)	N	●	●

Datasets used in map: OSV, AONB, OSBL, LCA, DHM, WFDL, OSR, LAKE, TRAC. See page 54 for full references.

Clean & Plentiful Water

1. Indicators of Current Provision: Quality & Service Flow

Rivers: A key set of evidence used to assess the water quality in a catchment is the Water Framework Directive (WFD). The status of a waterbody is measured using a series of parameters and is recorded on the scale: high; good; moderate; poor; bad (with moderate and worse being regarded as a failure). Waterbodies whose catchments fall at least partly within the Brit Valley & Marshwood Vale area are shown in the map below.

Some of the component measures that make up the overall status are also useful indicators of the ability of waterbodies to provide clean and plentiful water. These are shown in the table below.

Waterbody status – selected component elements

River name	Overall status	Chemical status	Phosphate status	Hydrological regime
Brit (Lower)	M	F	G	SG
Asker	P	F	G	SG
Mangerton Brook	M	F	M	SG
Brit (Upper)	M	F	G	H
Monkton Wyld Stream	M	F	M	H
Char	M	F	M	H
Simene	M	F	G	H
Upper Axe	M	F	M	SG

WFD 2019 Table key ▲

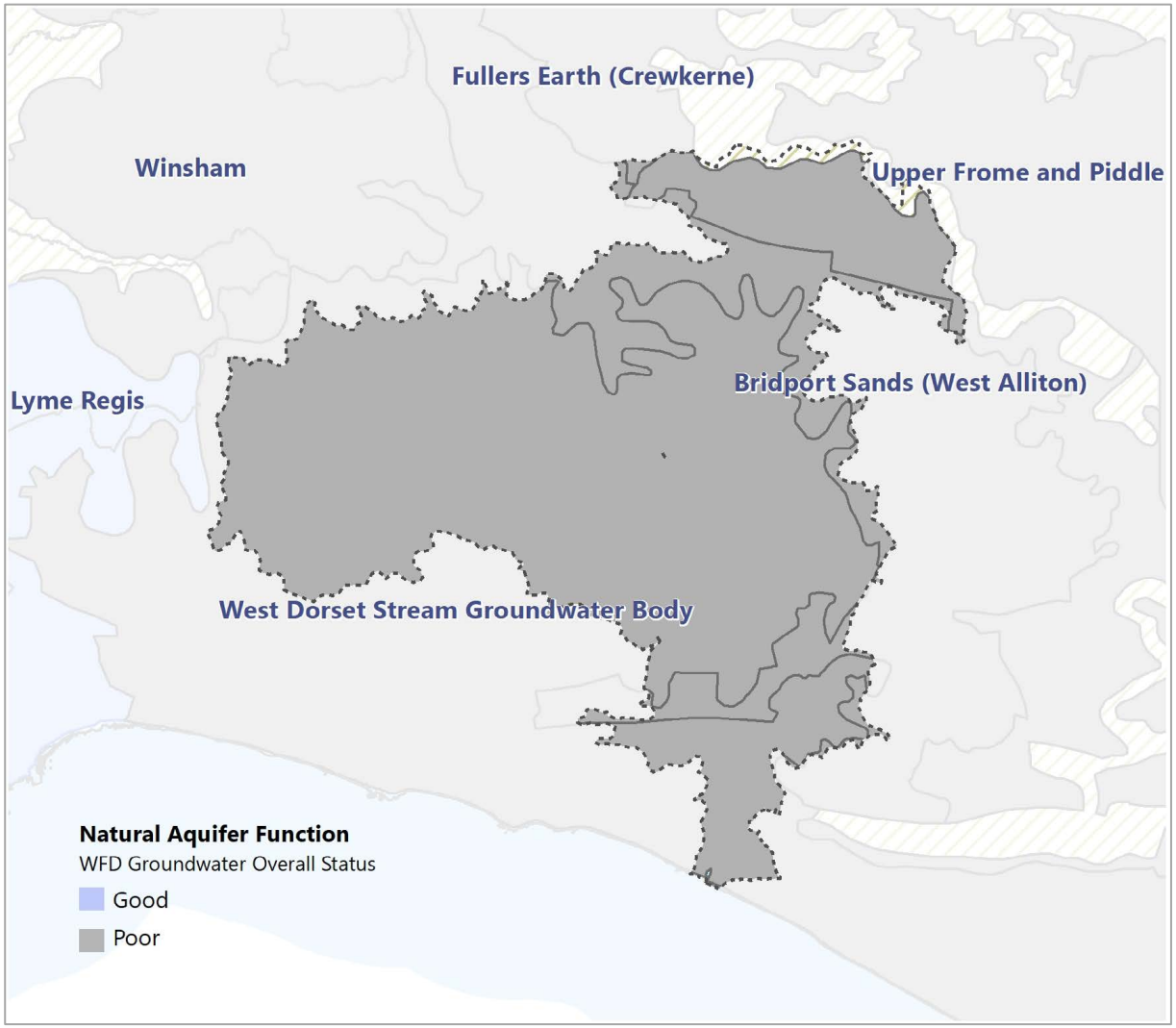
	Chemical status	Nutrient Status (Phosphate Status)	Natural flow regime (Hydrological Status)
Pass	G Good	H High	H High
		G Good	SG Supports good
Fail	F Fail (n/a)	M Moderate	NG Does not support good
		P Poor	
		B Bad	*NA* Not assessed

Datasets used in map: OSV, AONB, OSBL, LCA, WFDL, WFDWC, CDE. See page 54 for full references.

Clean & Plentiful Water

1. Indicators of Current Provision: Quality & Service Flow

Groundwater: The Water Framework Directive also assesses groundwater function. The natural functioning of aquifers shows the ability of groundwater assets to effectively provide a plentiful water supply.



Groundwater quantity status is described as 'good' when the long-term available water resource is not exceeded by the long-term rate of abstraction. This includes consideration of flow required to maintain a good ecological status.

Name of groundwater body	Status 2019	Total area (km²)	Area in AONB (km²)
Upper Frome and Piddle	**Poor**	523	395
Bridport Sands (West Alliton)	**Poor**	62	54
West Dorset Stream Groundwater Body	**Poor**	272	221
Winsham	**Poor**	62	28
Fullers Earth (Crewkerne)	**Poor**	93	46

Data sources (more detail on page 54)

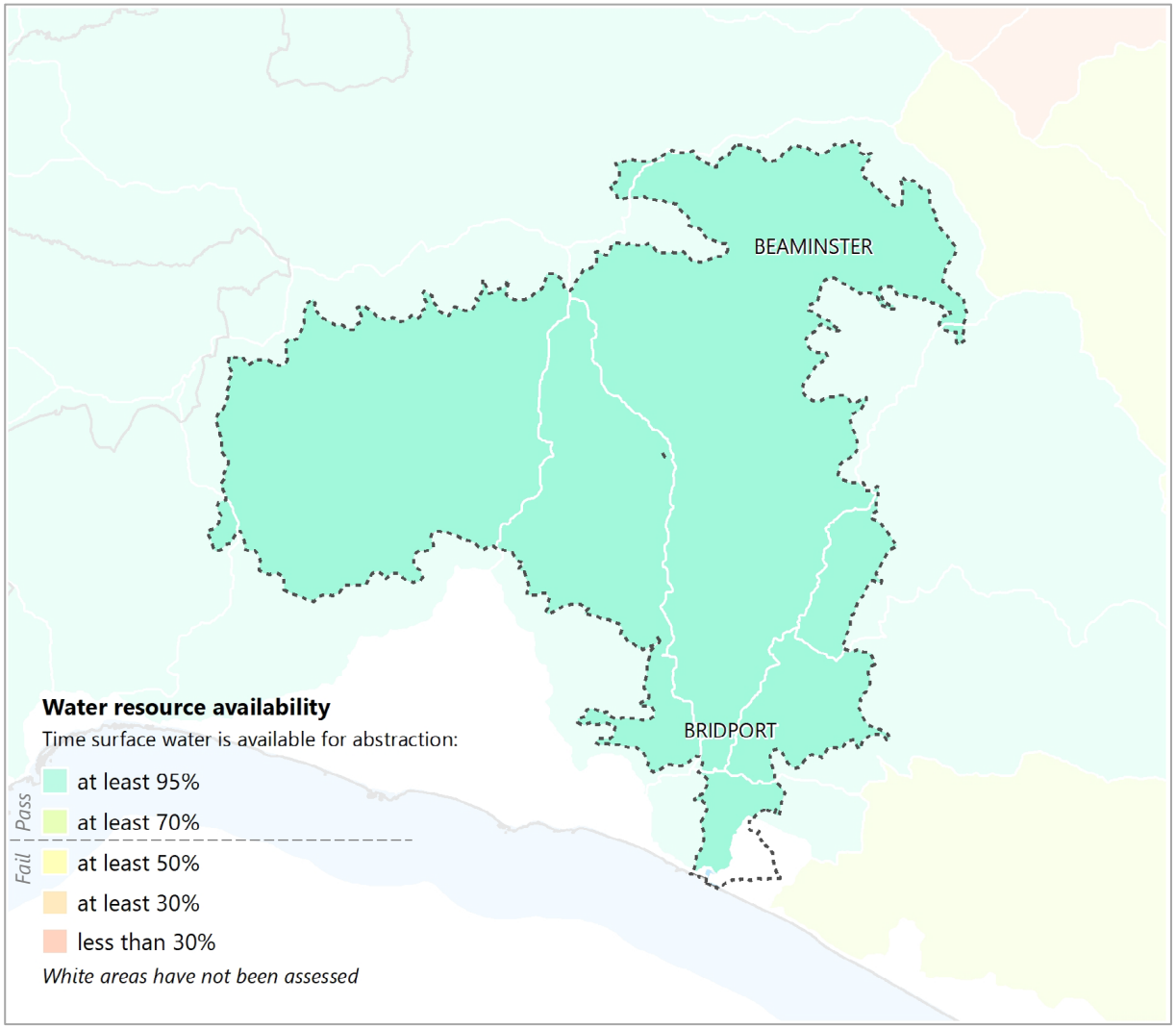
	Indicator	Dataset	Level	Res.	Date
Previous page	Overall water quality	WFD rivers overall status 2019	N	🟡	🟢
	Chemical status of waterbodies	WFD rivers chemical status 2019	N	🟡	🟢
	Nutrient status of waterbodies	WFD rivers phosphate status 2019	N	🟡	🟢
	Naturalness of flow regime	WFD hydrological regime status 2019	N	🟡	🟢
This page	Natural aquifer function	WFD groundwater status 2019	N	🟢	🟢

Datasets used in map: OSV, AONB, OSBL, LCA, GW, CDE. See page 54 for full references.

Clean & Plentiful Water

1. Indicators of Current Provision: Quality & Service Flow

Availability of Water for Abstraction: The amount of water available for abstraction is an indicator of how well this ecosystem service is flowing from the natural assets to people.



The Environment Agency is responsible for managing water resources in England and use the catchment abstraction management strategy (CAMS) process and abstraction licensing strategies to monitor and maintain water resources.

In the Natural Capital Indicators project, a threshold of water being available for at least 70% of the time is used to show that the ecosystem service flow is at a satisfactory level.

Other quality indicators relevant for clean and plentiful water are:

- **Vegetation cover** – see page 29

Data sources (more detail on page 54)

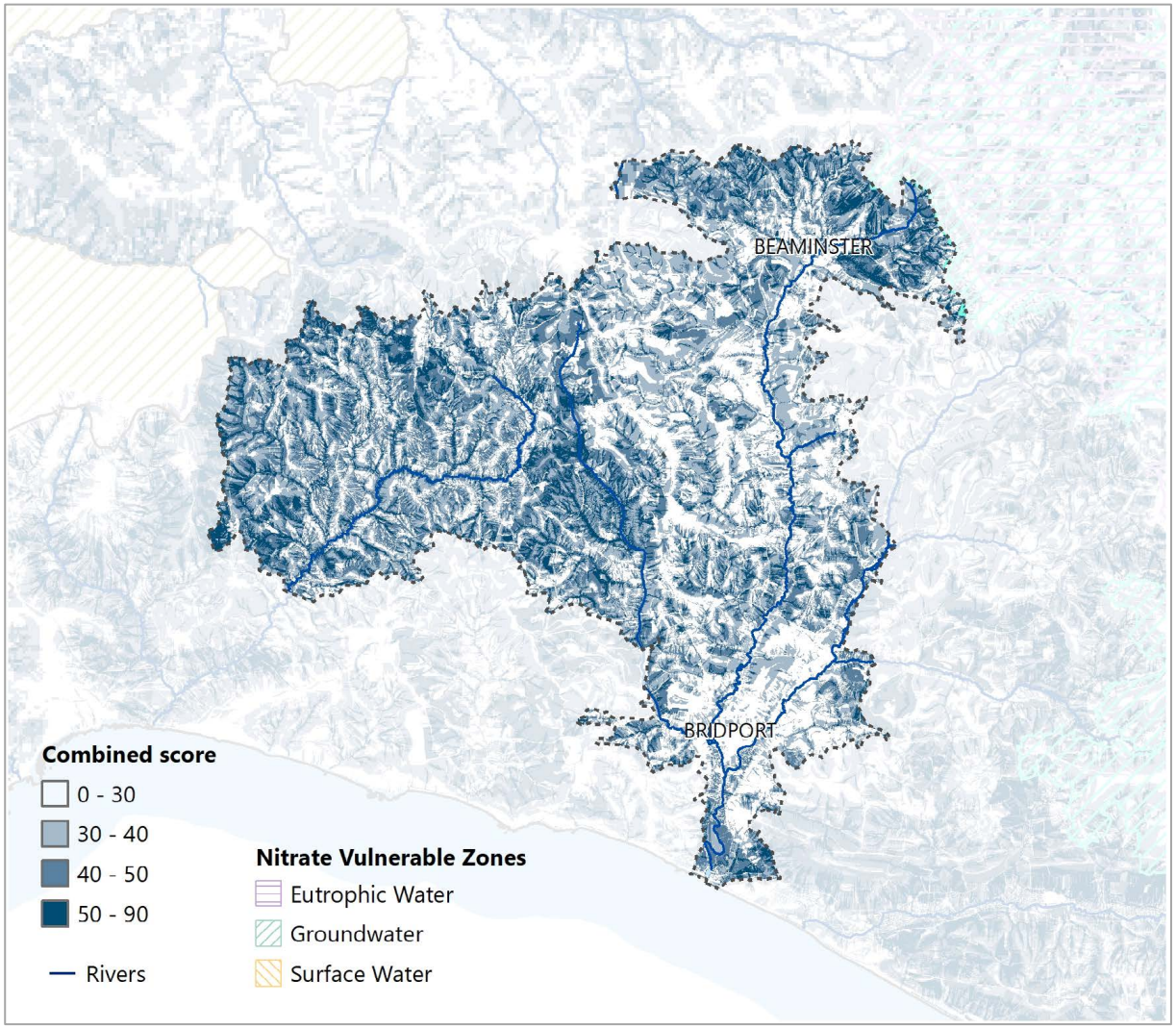
Indicator	Dataset	Level	Res.	Date
Availability of water for abstraction	EA catchment abstraction management strategy	N	●	●

Datasets used in map: OSV, AONB, OSBL, LCA, CAMS. See page 54 for full references.

Clean & Plentiful Water

2. Areas for Investigation & Action

The land areas that play a key role in regulating water quality as water moves through the landscape can be identified by mapping a series of indicators of inherent water quality risk. The map below shows where areas of risk occur and coincide, with darker shades showing areas of land where there is a greater risk of water quality being degraded in the catchment. These areas will be investigated further at a local level and then targeted for action through ELMS.



Datasets used in map: OSV, AONB, OSBL, LCA, NVZ, DHM, DTM5, DTM50, NAT, OSWN.
See page 54 for full references.

The map on this page shows the **combined risk score** across a grid of 'pixels'. The catchments of the Char, Brit and Bride rivers have been analysed at a fine resolution, using 5m pixels. The surrounding area has been analysed at a 50m scale. The table below describes the factors considered in the analysis, and Appendix 2 shows the full scoring system.

Areas of risk & description	Dataset	Level	Res.	Date
Land use risk Some land uses inherently pose more of a risk of diffuse pollution. Arable land typically poses more risk to water quality than more natural habitats.	Dorset habitat map	L	●	●
Slope Slope is a risk factor that poses a threat to water quality.	APGB 5m Terrain Model	N	●	●
Soil type Some soils are particularly prone to run-off/erosion, while others represent a risk due to rapid leaching of pollutants in solution.	NATMAP soils	N	●	●
Hydrological connectivity [6] In some locations water is more likely to run over the surface due to the shape of the land. These suggest where there may be pathways for contaminated water.	APGB 5m Terrain Model	L	●	●
Proximity to watercourse Areas in the 'riparian corridor' are more likely to be connected to the watercourse.	OSMM Water Network	N	●	●
Nitrate Vulnerable Zones (not used in scoring, but overlaid onto map) Areas designated as being at risk from agricultural nitrate pollution	Nitrate Vulnerable Zones	N	●	●

Thriving Plants & Wildlife

Biodiversity, the variety of life of earth, is valuable in its own right. It also underpins a variety of other ecosystem services including recreation, food, flood protection and climate regulation. This section will predominantly use habitats as an indicator of the quantity of thriving plants and wildlife. Rare and threatened species, along with their management requirements, will be identified at a local level for consideration in any on-the-ground action. Various datasets are used to explore the quality of habitats and ecosystem assets which support biodiversity. This is followed by a series of maps which identify and prioritise possible locations for restoring and enhancing habitats to improve habitat connectivity.

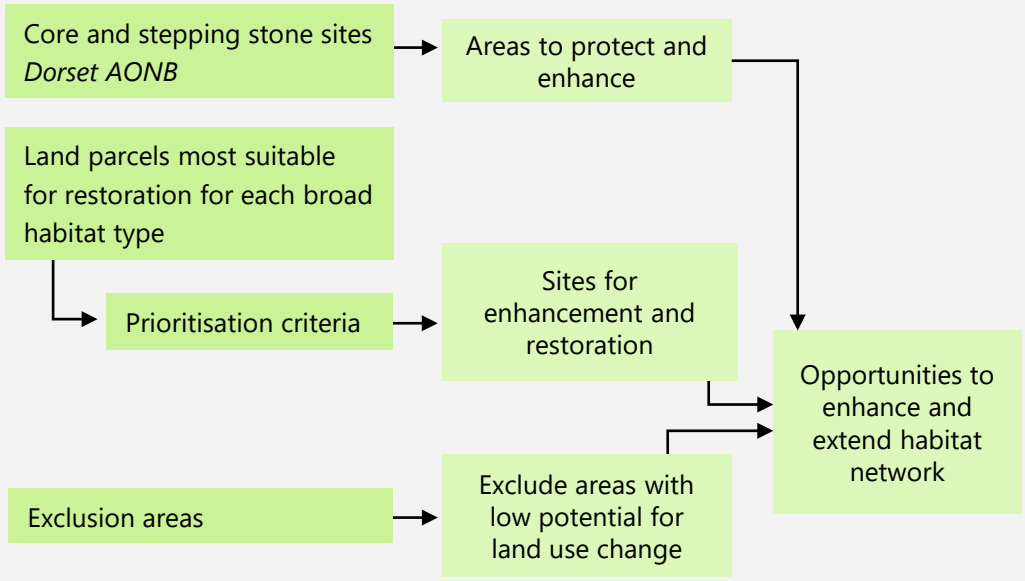
1. Map current state of natural capital in relation to thriving plants and wildlife

Based on Natural England Indicators and Natural Capital Atlas project

Quantity and location

Quality

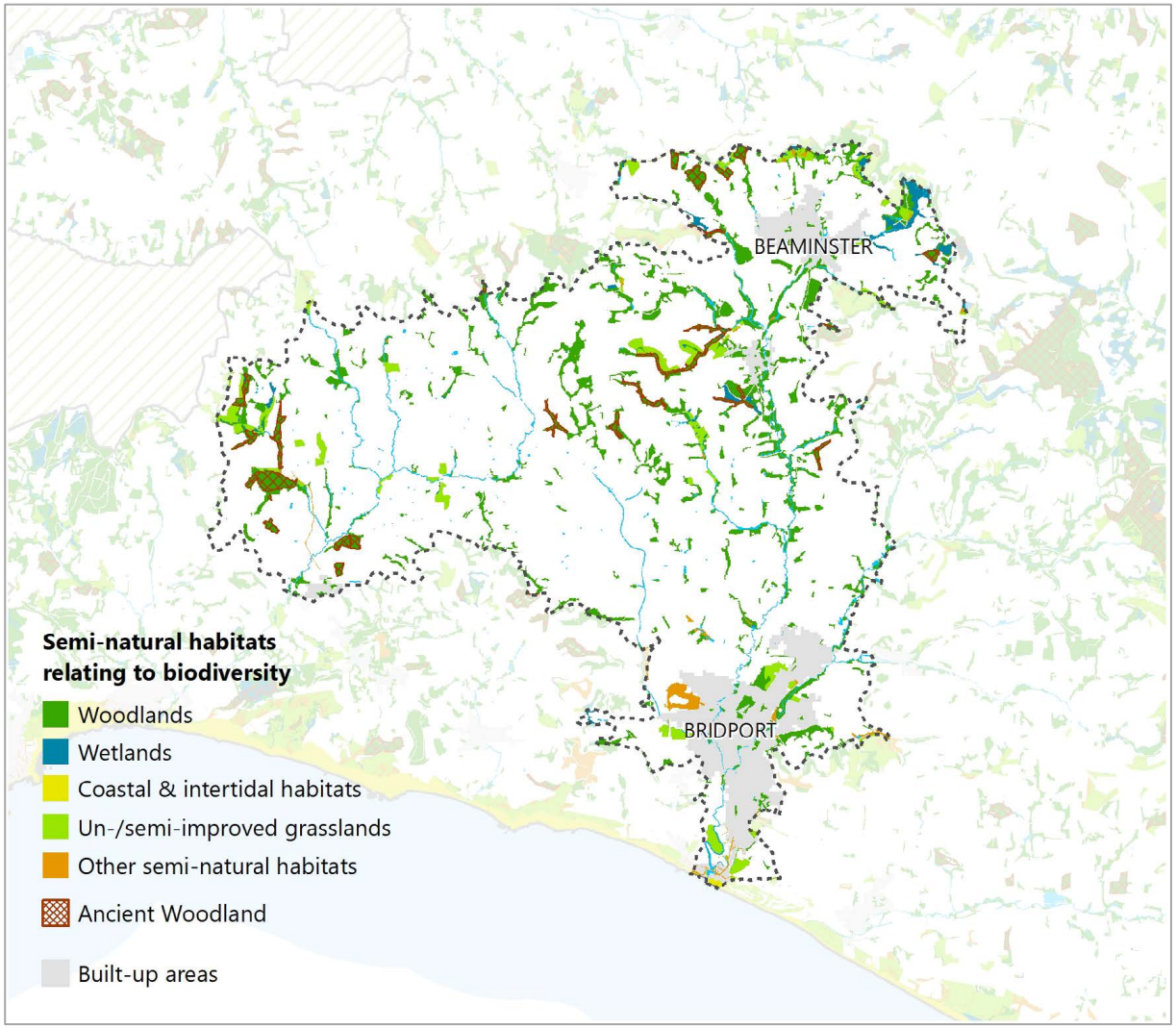
2. Map areas for investigation and action for improving biodiversity



Thriving Plants & Wildlife

1. Indicators of Current Provision: Quantity & Location

The natural assets mapped on this page are habitats which have the potential to support thriving plants and wildlife. Where the assets are present the landscape is likely to be contributing to the provision of habitats and biodiversity, and where the assets are absent (where the map is white, or grey for urban areas) there may be a lack of natural assets which contribute to or support thriving plants and wildlife.



Data sources (more detail on page 54)

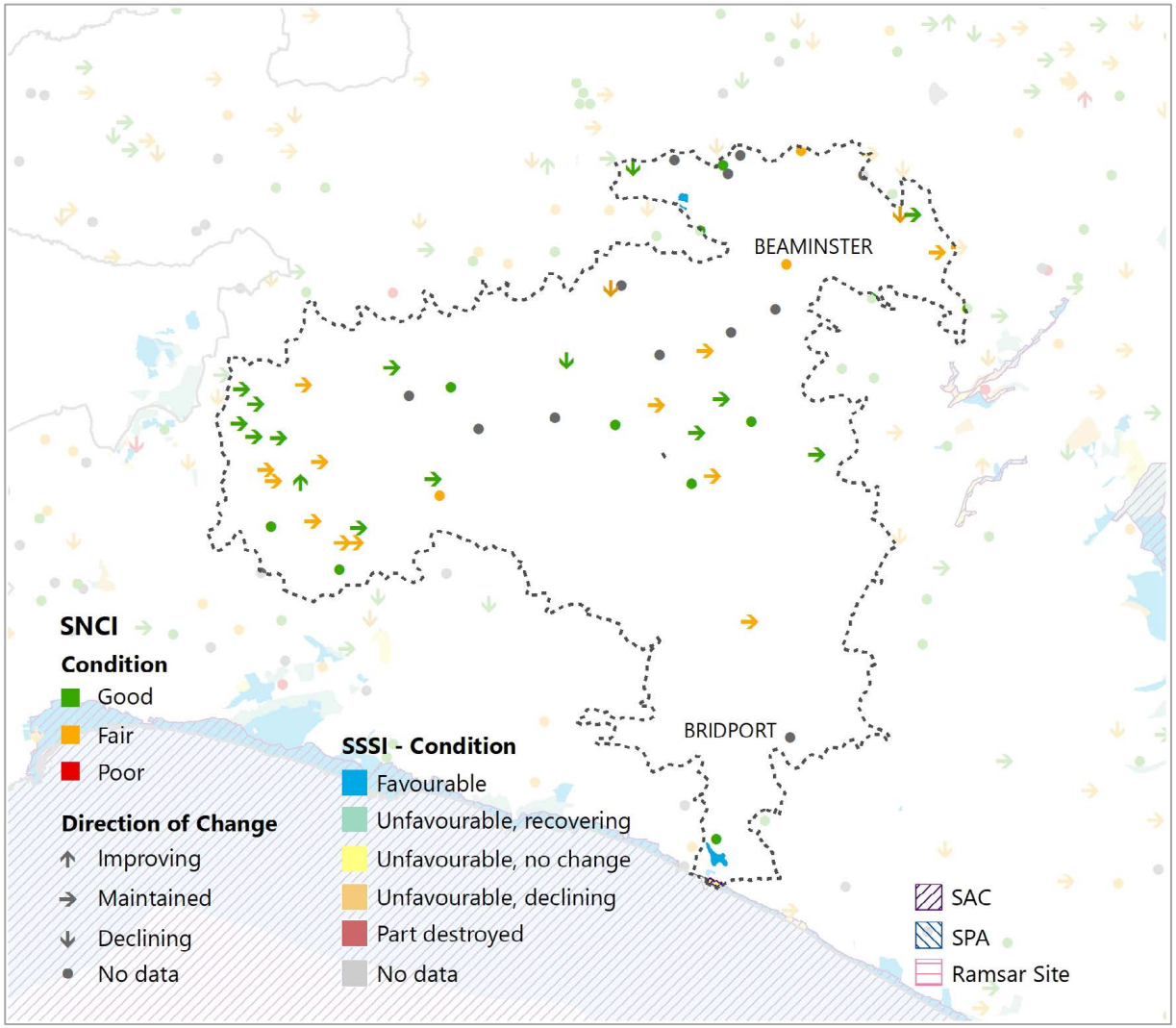
Indicator(s)	Data used	Level	Res.	Date
Semi-natural habitats Urban habitats	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●
Ancient Woodland	Natural England designated ancient woodland map	N	●	●

Datasets used in map: OSV, AONB, OSBL, LCA, DHM, AW, ONSBU. See page 54 for full references.

Thriving Plants & Wildlife

1. Indicators of Current Provision: Quality

Designated Sites: Sites home to particular species, habitats or geological features may be designated as important at a local, national or international level. These sites, especially where they are in good condition, are some of the highest quality areas for thriving plants and wildlife.



Special Protection Areas (SPA) and **Special Areas for Conservation (SAC)** are sites designated for their value at a European scale, while **Ramsar Sites** are globally important wetlands.

At a national level, the best sites for wildlife and geology are designated as **Sites of Special Scientific Interest** (SSSI), while **Sites of Nature Conservation Interest** (SNCI) in Dorset are selected by a panel and are included in the relevant Local Plan to support their protection as locally important sites.

The condition of SSSIs is assessed at a site or sub-site level, with those classed as 'unfavourable' also assessed as either 'recovering', 'no change' or 'declining'. SNCIs are shown by their central point, and, in Dorset, are assessed for their condition and the direction of change of this condition.

Data sources (more detail on page 54)

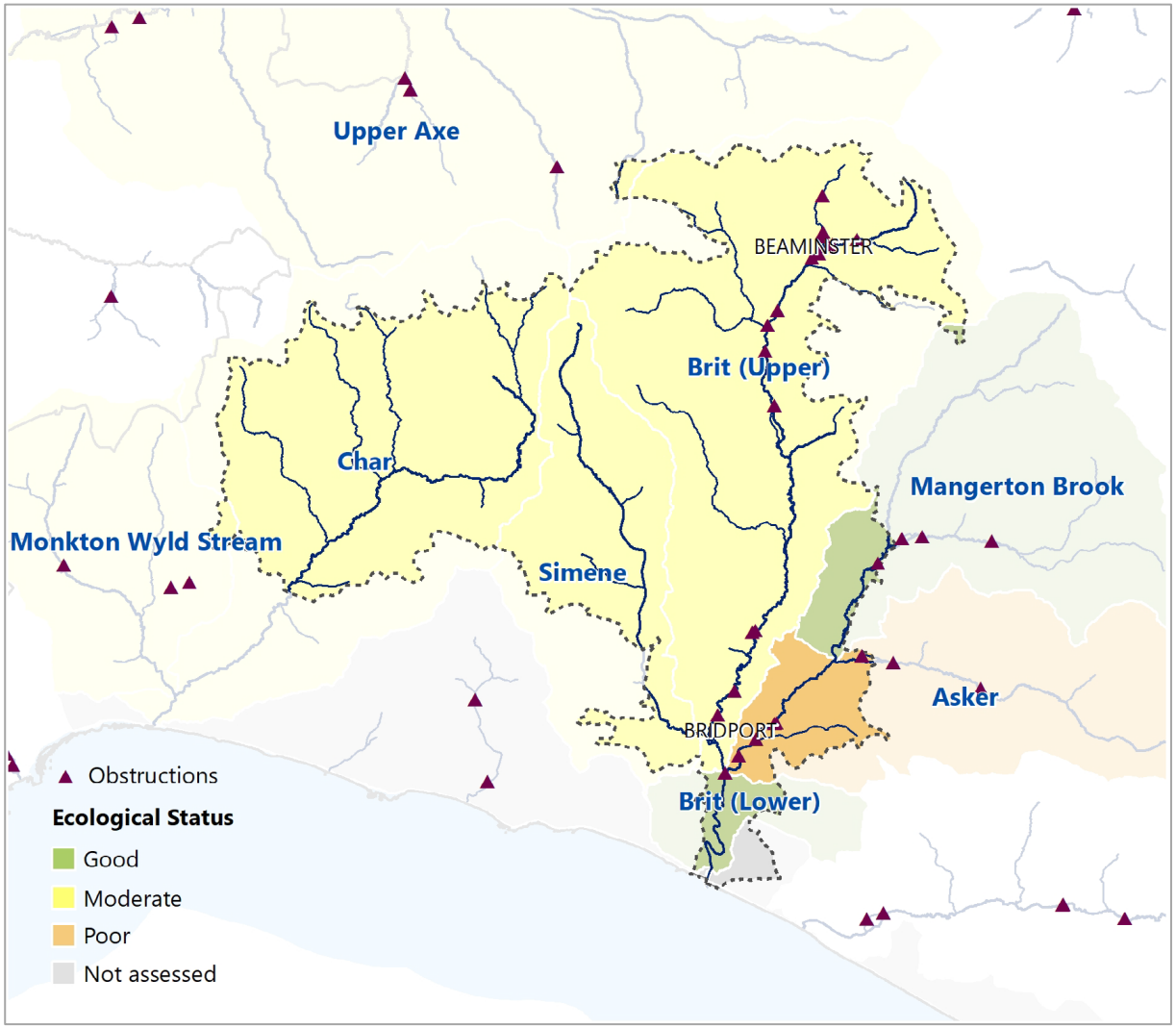
Indicator(s)	Data used	Level	Res.	Date
Internationally designated sites	Natural England data	N	●	●
SSSI	Natural England data	N	●	●
SNCI	Dorset Environmental Records Centre data	L	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, SNCI, SSSI, SAC, SPA, RAM. See page 54 for full references.

Thriving Plants & Wildlife

1. Indicators of Current Provision: Quality

Rivers: Freshwater is important for a wide variety of species, both directly and indirectly, and rivers and their surrounding riparian zones can help to form natural corridors between habitat patches.



Indicators of quality of river habitats include the **ecological status** under the Water Framework Directive, which is based on a number of biological quality elements. More natural river forms, free from **physical modifications** and **obstructions**, are also important to consider for the movement of species and the natural functioning of river ecosystems.

Physical Modifications
There are no waterbodies whose catchments fall at least partly within the Brit Valley & Marshwood Vale area with a Significant Water Management Issue relating to physical modification.

Other quality indicators relevant for thriving plants and wildlife are:

- **Chemical status of waterbodies** – see page 13
- **Nutrient status of waterbodies** – see page 13
- **Naturalness of flow regime** – see page 30

Data sources (more detail on page 54)

Indicator(s)	Data used	Level	Res.	Date
Ecological health	EA WFD ecological status 2019	N	●	●
River continuity (by mapping obstructions)	EA Potential Sites of Hydropower Opportunity	N	●	●
Physical modifications	EA WFD Reasons for Not Achieving Good	N	●	●

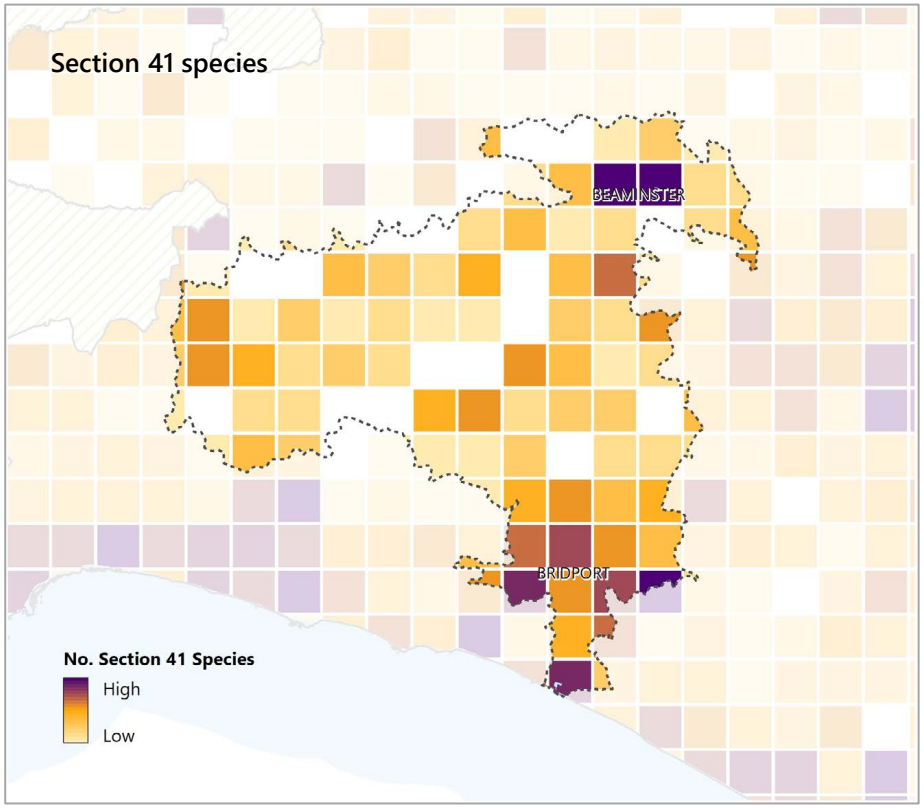
Datasets used in maps: OSV, AONB, OSBL, LCA, WFDWC, WFDL, OSR, CDE, OBS. See page 54 for full references.

Thriving Plants & Wildlife

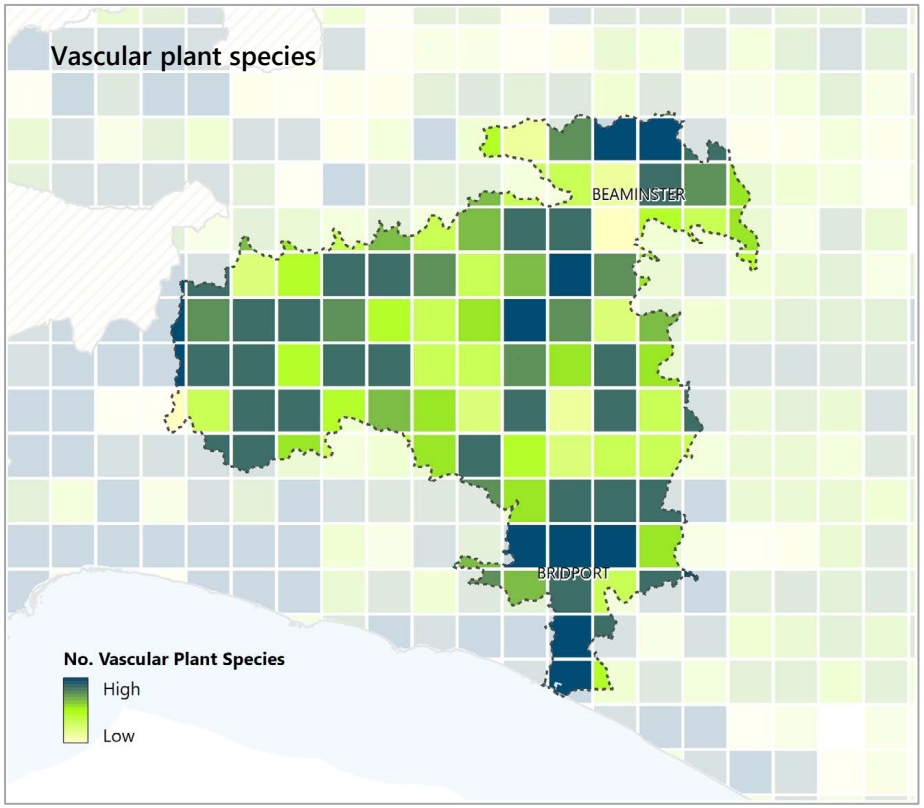
1. Indicators of Current Provision: Quality

Species: The maps below show data on species records. Darker shades show areas with more species recorded, and indicator of more thriving plants and wildlife.

Section 41 species are 'Species of Principal Importance in England', a published list of species which must be protected under the Natural Environment and Rural Communities Act 2006. **Vascular plants** are flowering plants and ferns which, together in communities, form habitats and vegetation types. The number of species has been summarised by 1km squares.



Colour scale based on value range for whole AONB, split into 10 quantiles. Value range: 0 – 113. Range for Brit Valley & Marshwood Vale area: 0 – 52.



Colour scale based on value range for whole AONB, split into 10 quantiles. Value range: 0 – 503. Range for Brit valley & Marshwood Vale area: 1- 314.

Data sources (more detail on page 54)

Indicator	Dataset used	Level	Res.	Date
Species records	Dorset Environmental Records Centre data	L	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, SPR. See page 54 for full references.

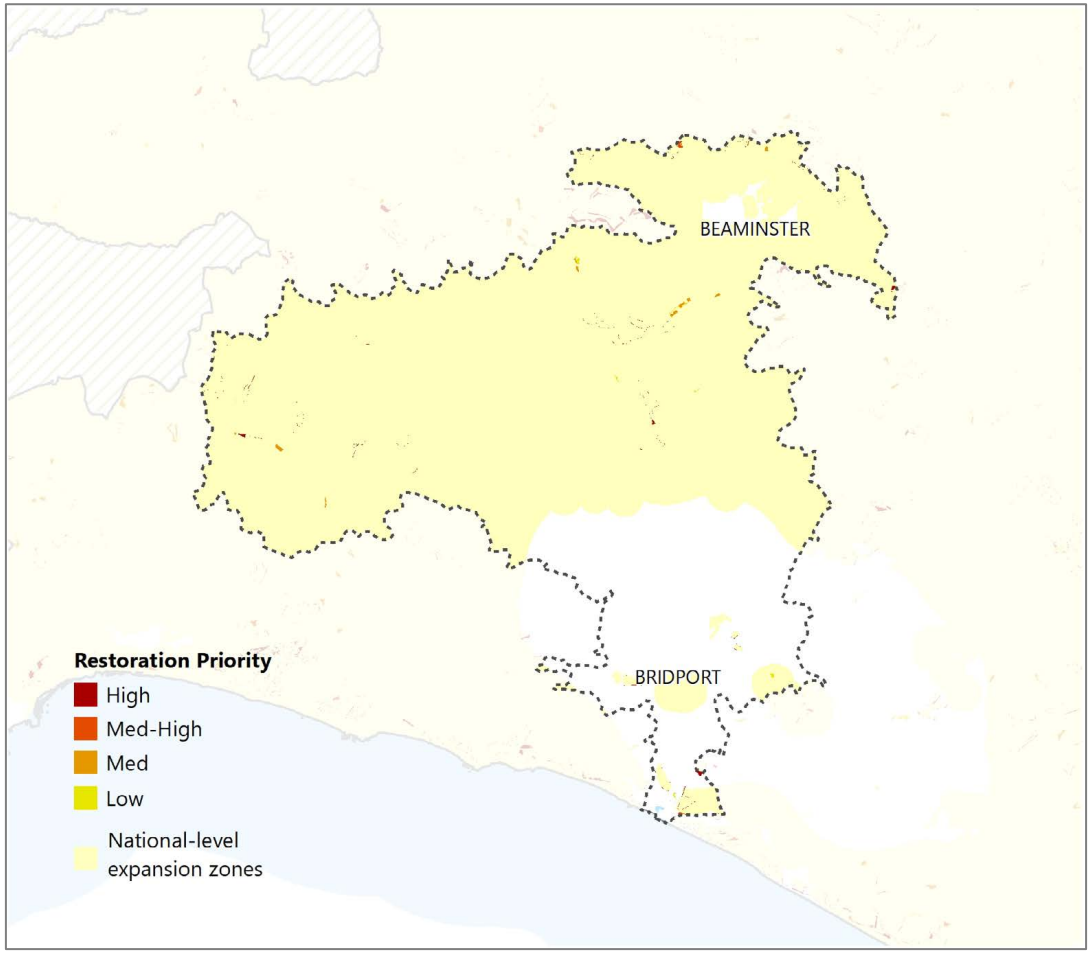
Thriving Plants & Wildlife

2. Areas for Investigation & Action: Grassland

Sites for enhancement and restoration

1. Site selection

Land parcels **most suitable for grassland restoration**:
- Bracken
- Semi-improved grassland (which is not already a core grassland site)



2. Prioritisation

Parcels close to existing 'core' sites: **High**

Parcels within locally produced habitat expansion zones: **Medium-High**

Parcels within nationally produced and broader habitat expansion zones: **Medium**

Remaining parcels: **Low**

After each stage, very small parcels and those on high grade agricultural land were moved down one priority level

Note: the opportunities presented in the map may conflict with opportunities presented for other broad habitats. Any actions should be taken after consideration of these other opportunities and what is best for the landscape as a whole.

Datasets used in analysis	Level	Res.	Date
Dorset habitat map – selected land covers	L	●	●
Dorset core and stepping stone sites	L	●	●
Local habitat expansion zones	L	●	●
Natural England Habitat Networks	N	●	●
Agricultural Land Classification	N	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, CSS, LHN, NEHN, ALC. See page 54 for full references.

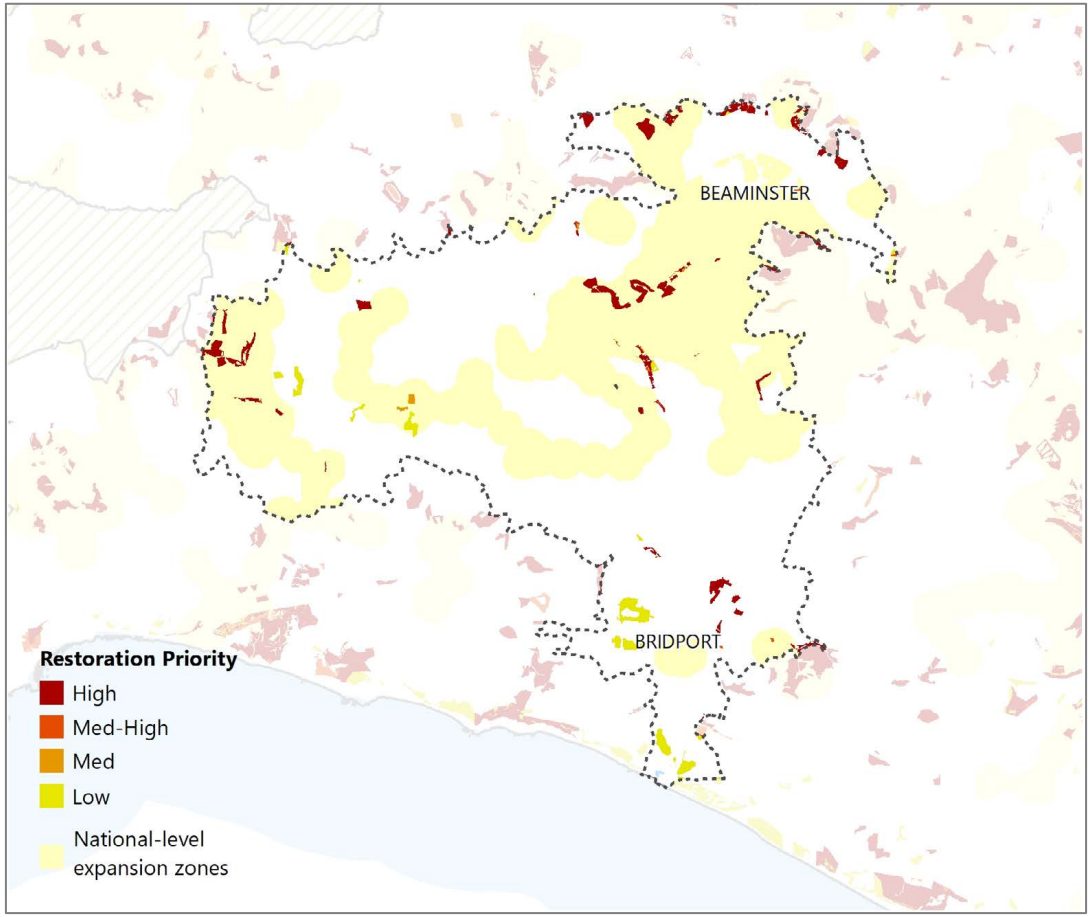
Thriving Plants & Wildlife

2. Areas for Investigation & Action: Woodland

Sites for enhancement and restoration

1. Site selection

Land parcels **most suitable for woodland restoration**:
- Bracken
- Semi-improved grassland
- Plantations on Ancient Woodland
- Scrub



2. Prioritisation

Parcels close to existing 'core' sites: **High**

Parcels within locally produced habitat expansion zones: **Medium-High**

Parcels within nationally produced and broader habitat expansion zones: **Medium**

Remaining parcels: **Low**

After each stage, very small parcels and those on high grade agricultural land were moved down one priority level

Note: the opportunities presented in the map may conflict with opportunities presented for other broad habitats. Any actions should be taken after consideration of these other opportunities and what is best for the landscape as a whole.

Datasets used in analysis	Level	Res.	Date
Dorset habitat map – selected land covers	L	●	●
Dorset core and stepping stone sites	L	●	●
Local habitat expansion zones	L	●	●
Natural England Habitat Networks	N	●	●
Agricultural Land Classification	N	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, CSS, LHN, NEHN, ALC. See page 54 for full references.

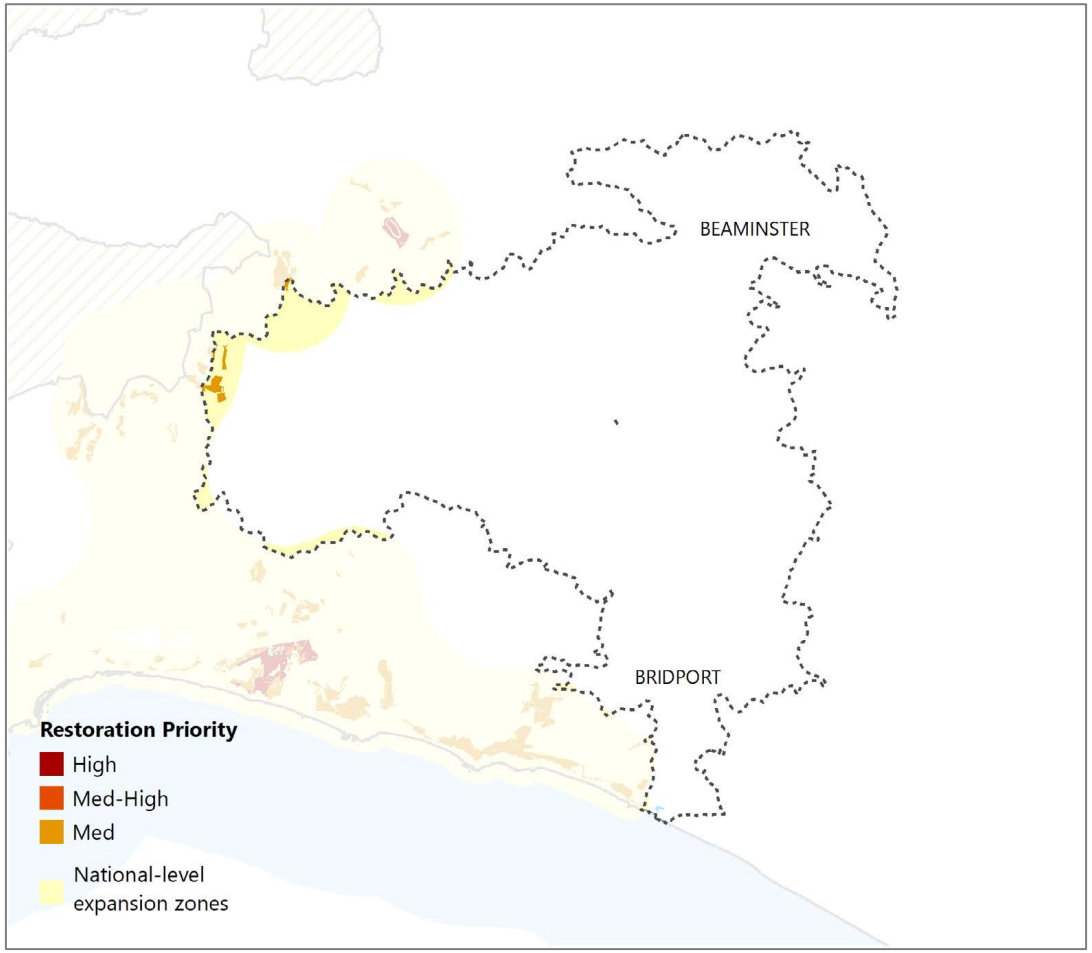
Thriving Plants & Wildlife

2. Areas for Investigation & Action: Heathland

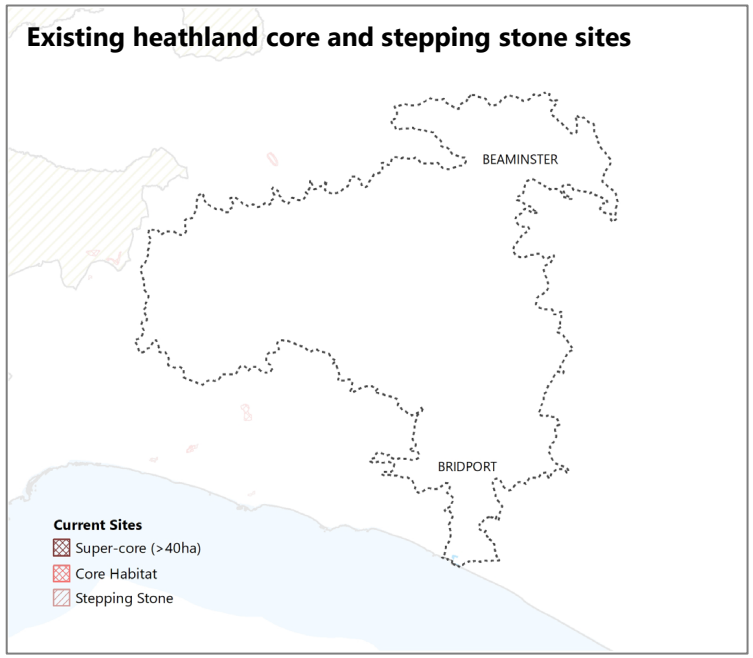
Sites for enhancement and restoration

1. Site selection

Land parcels **most suitable for heathland restoration**:
- Bracken & scrub
- Semi-improved grassland
- Coniferous plantations (not on ancient woodland)



Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, CSS, LHN, NEHN, ALC. See page 54 for full references.



2. Prioritisation

Parcels close to existing 'core' sites: **High**

Parcels within locally produced habitat expansion zones: **Medium-High**

Parcels within nationally produced and broader habitat expansion zones: **Medium**

Remaining parcels: **Removed** *(would not meet specific heathland restoration criteria)*

After each stage, very small parcels and those on high grade agricultural land were moved down one priority level

Note: the opportunities presented in the map may conflict with opportunities presented for other broad habitats. Any actions should be taken after consideration of these other opportunities and what is best for the landscape as a whole.

Datasets used in analysis	Level	Res.	Date
Dorset habitat map – selected land covers	L	●	●
Dorset core and stepping stone sites	L	●	●
Local habitat expansion zones	L	●	●
Natural England Habitat Networks	N	●	●
Agricultural Land Classification	N	●	●

Thriving Plants & Wildlife

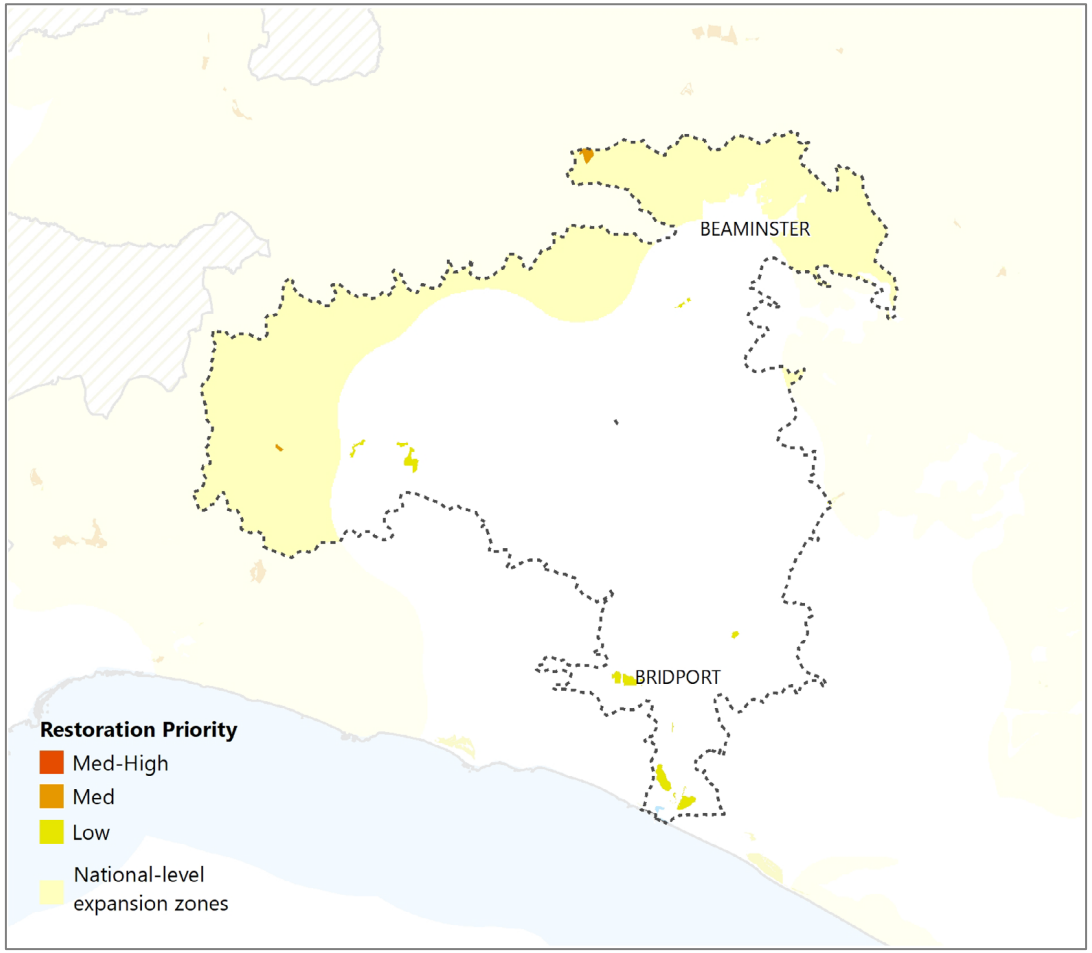
2. Areas for Investigation & Action: Wetland

Sites for enhancement and restoration

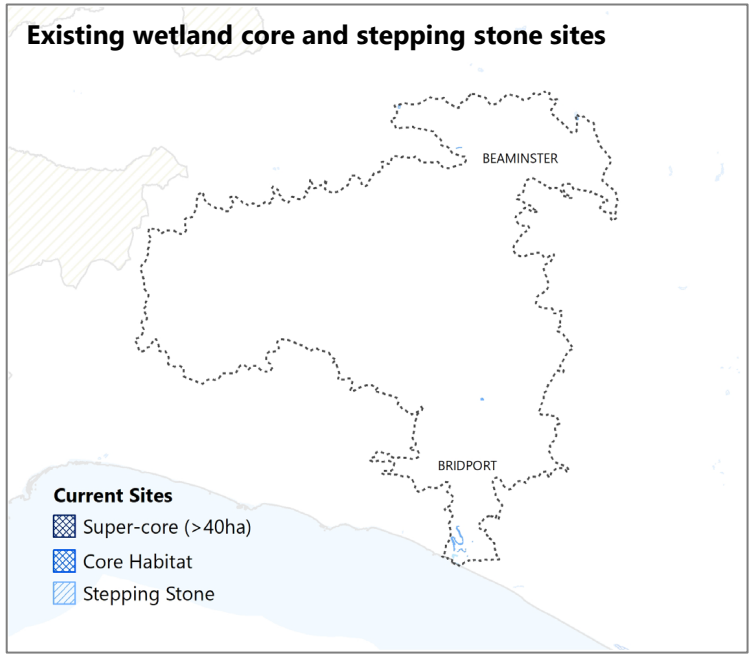
1. Site selection

Land parcels **most suitable for wetland restoration**:
- Semi-improved grassland
- Coniferous plantations (not on ancient woodland)

→ *Only parcels fully/partly **within the floodplain** taken forward as suitable for wetland restoration*



Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, CSS, LHN, NEHN, ALC, FZ2. See page 54 for full references.



2. Prioritisation

Parcels close to existing 'core' sites: **High**

Parcels within locally produced habitat expansion zones: **Medium-High**

Parcels within nationally produced and broader habitat expansion zones: **Medium**

Remaining parcels: **Low**

After each stage, very small parcels and those on high grade agricultural land were moved down one priority level

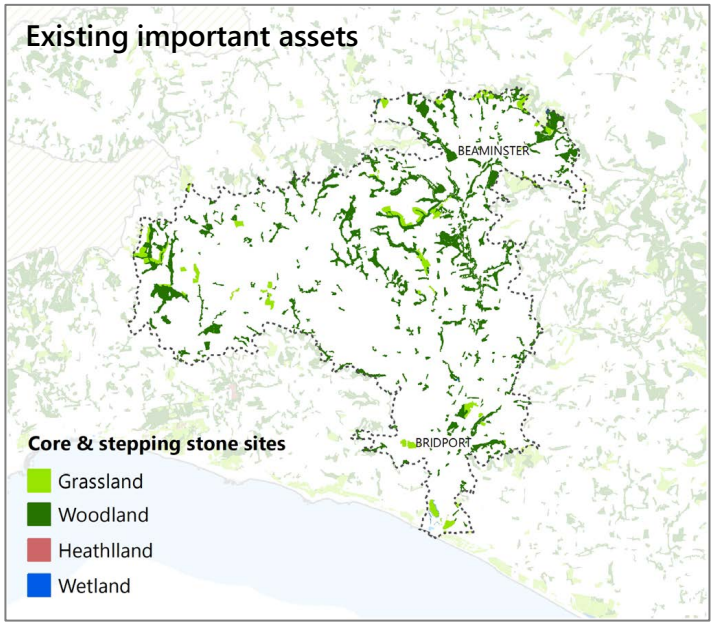
Note: the opportunities presented in the map may conflict with opportunities presented for other broad habitats. Any actions should be taken after consideration of these other opportunities and what is best for the landscape as a whole.

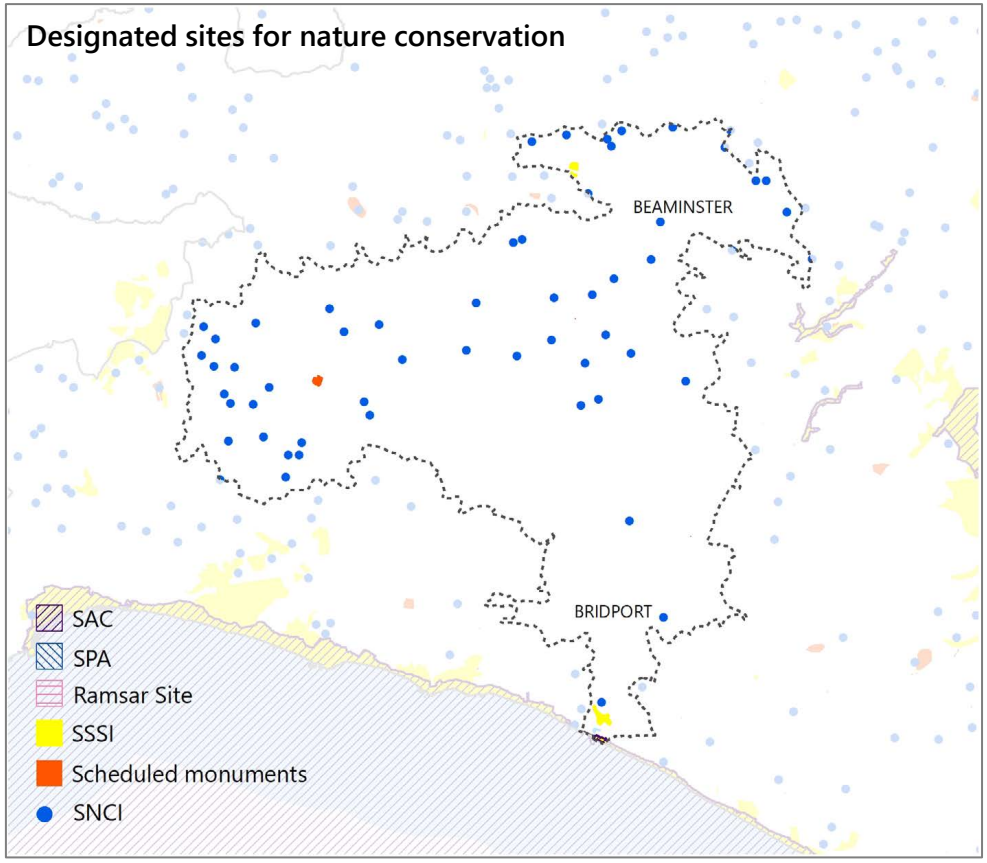
Datasets used in analysis	Level	Res.	Date
Dorset habitat map – selected land covers	L	●	●
Dorset core and stepping stone sites	L	●	●
Local habitat expansion zones	L	●	●
Natural England Habitat Networks	N	●	●
Agricultural Land Classification	N	●	●
Flood Zone 2	N	●	●

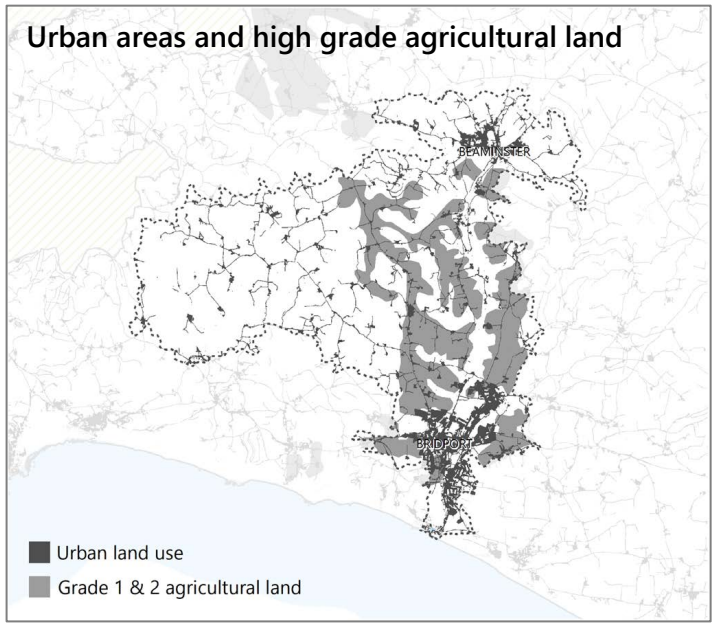
Thriving Plants & Wildlife

2. Areas for Investigation & Action: Exclusion Areas

A further consideration for the targeting of habitat enhancements, restoration or creation is existing areas which may not be suitable for changes in land use or land management. This may be because they are already valuable sites for wildlife (e.g. designated wildlife sites), because the land use is difficult to change (e.g. urban land) or because the land is highly valuable for farming (high grade agricultural land).







Datasets used in maps: OSV, AONB, OSBL, LCA, SAC, SPA, SSSI, LIST, CSS, DHM, ALC.
See page 54 for full references.

Flood Protection

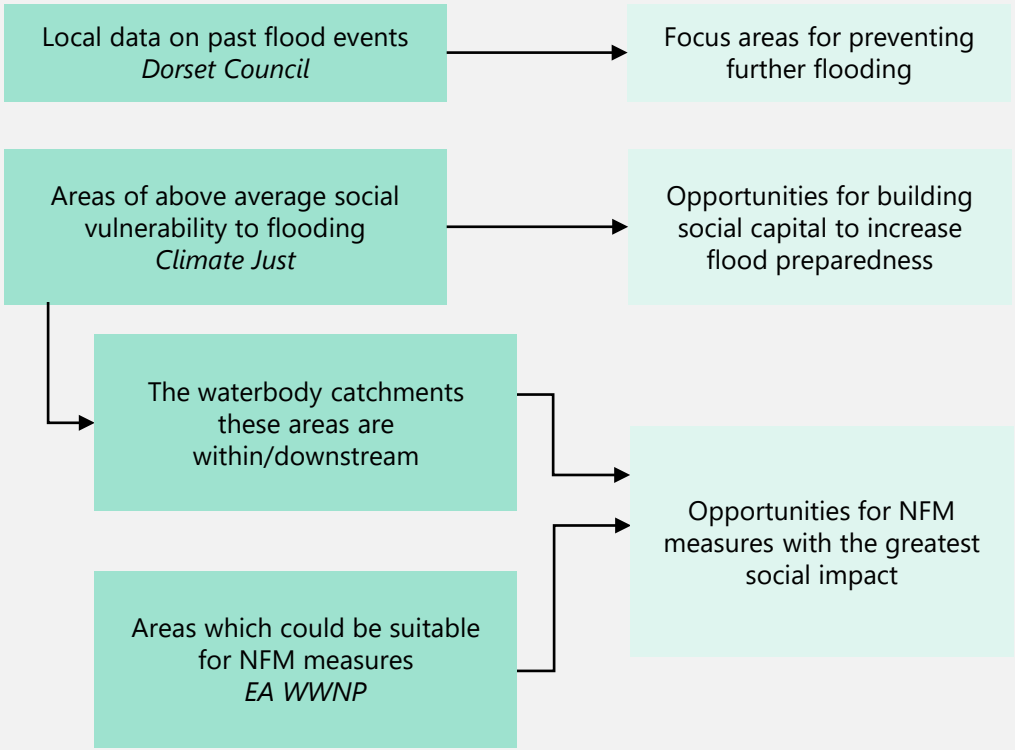
Flooding is one of a number of natural hazards which can cause harm to people, the environment and the economy. This section will explore the natural assets which are important for flood protection and the associated benefits for health & safety, mental health and well-being, protection of housing, businesses & infrastructure, and lack of transport disruption. There will also be an investigation into where there could be a focus on improving flood protection.

1. Map current state of natural capital in relation to flood protection

Based on Natural England Indicators and Natural Capital Atlas project

- Quantity and location
- Quality

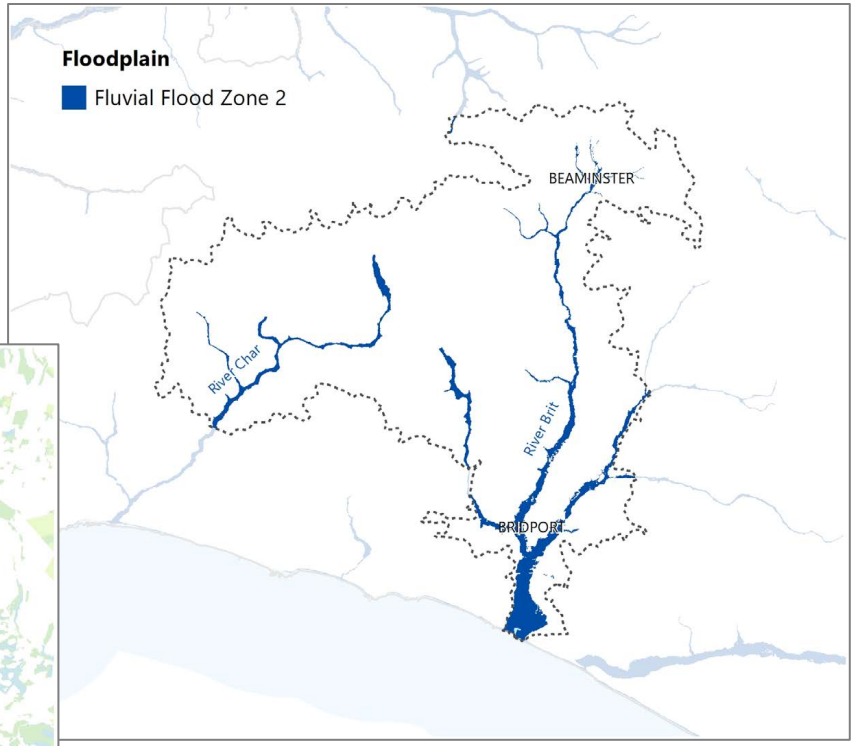
2. Map areas for investigation and action for flood protection/reducing flood risk

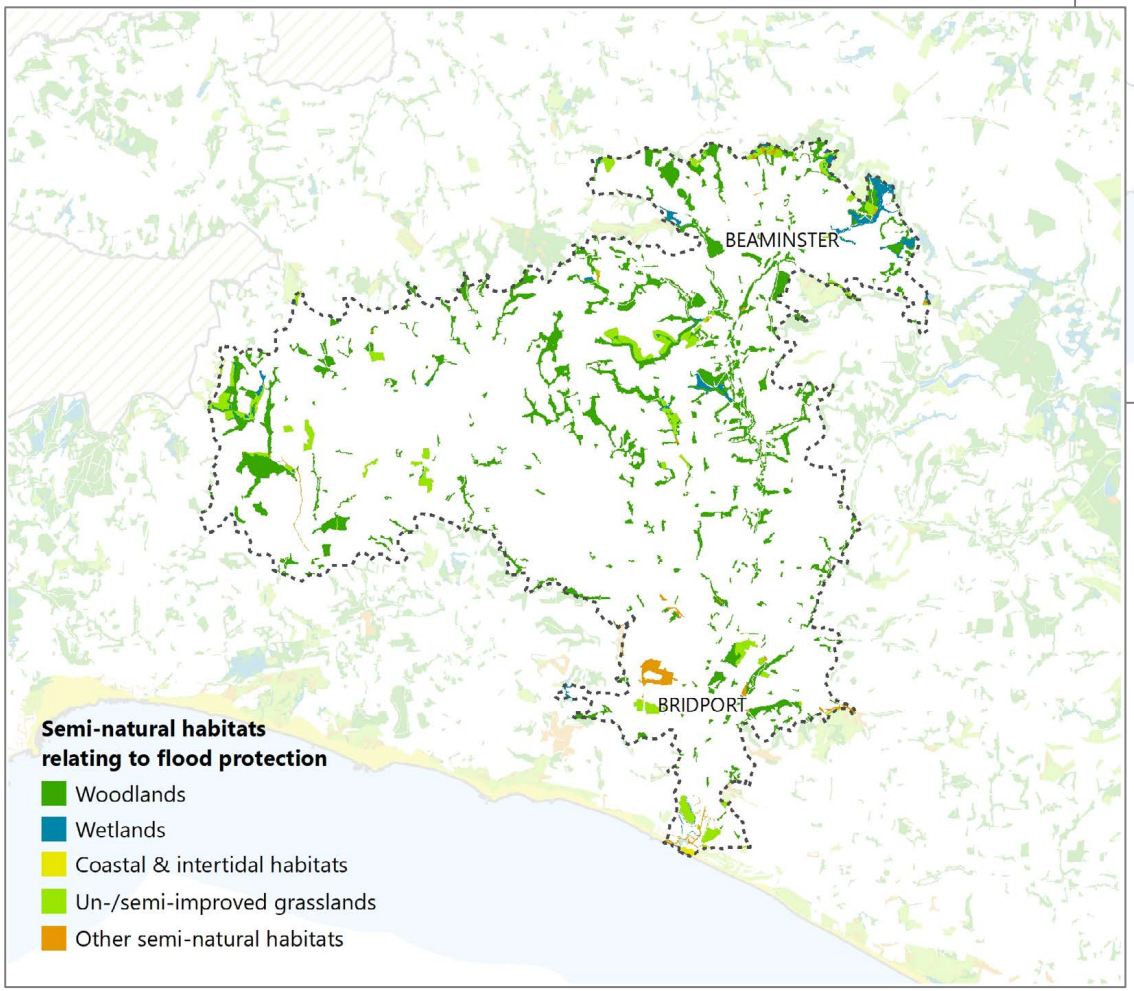


Flood Protection

1. Indicators of Current Provision: Quantity & Location

The **natural assets** mapped on this page contribute to **flood protection** as an **ecosystem service**. This page maps **quantity and location** of the indicators. This means that where the assets are present, the landscape is likely to be contributing to flood protection, and where the assets are absent (where the map is white) there may be a lack of natural flood protection.





Data sources (more detail on page 54)

Indicator	Dataset	Level	Res.	Date
▲ Active floodplain	EA Flood Risk from Rivers and Sea – Flood Zone 2	N	●	●
◀ Semi-natural habitats	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, FZ2. See page 54 for full references.

Flood Protection

1. Indicators of Current Provision: Quality

This page maps the some aspects of the **quality or condition** of natural assets which contribute to flood protection, as a way of indicating how effectively they are likely to be providing the flood protection benefits.

Datasets used in map: OSV, AONB, OSBL, LCA, CDE, WFDL, DHM. See page 54 for full references.

Naturalness of river flows can be indicated using the WFD hydrological regime classification. 'High' status signifies that the quantity and dynamics of flow, and the resultant connection to groundwaters, reflect nearly totally undisturbed conditions. 'Does not support good' indicates that the river is failing to meet the standards required for a healthy river.

Permanent vegetation cover is an indicator of the how well the landscape may be able to provide a number of services, including flood protection, and can be estimated using habitat and land cover data.

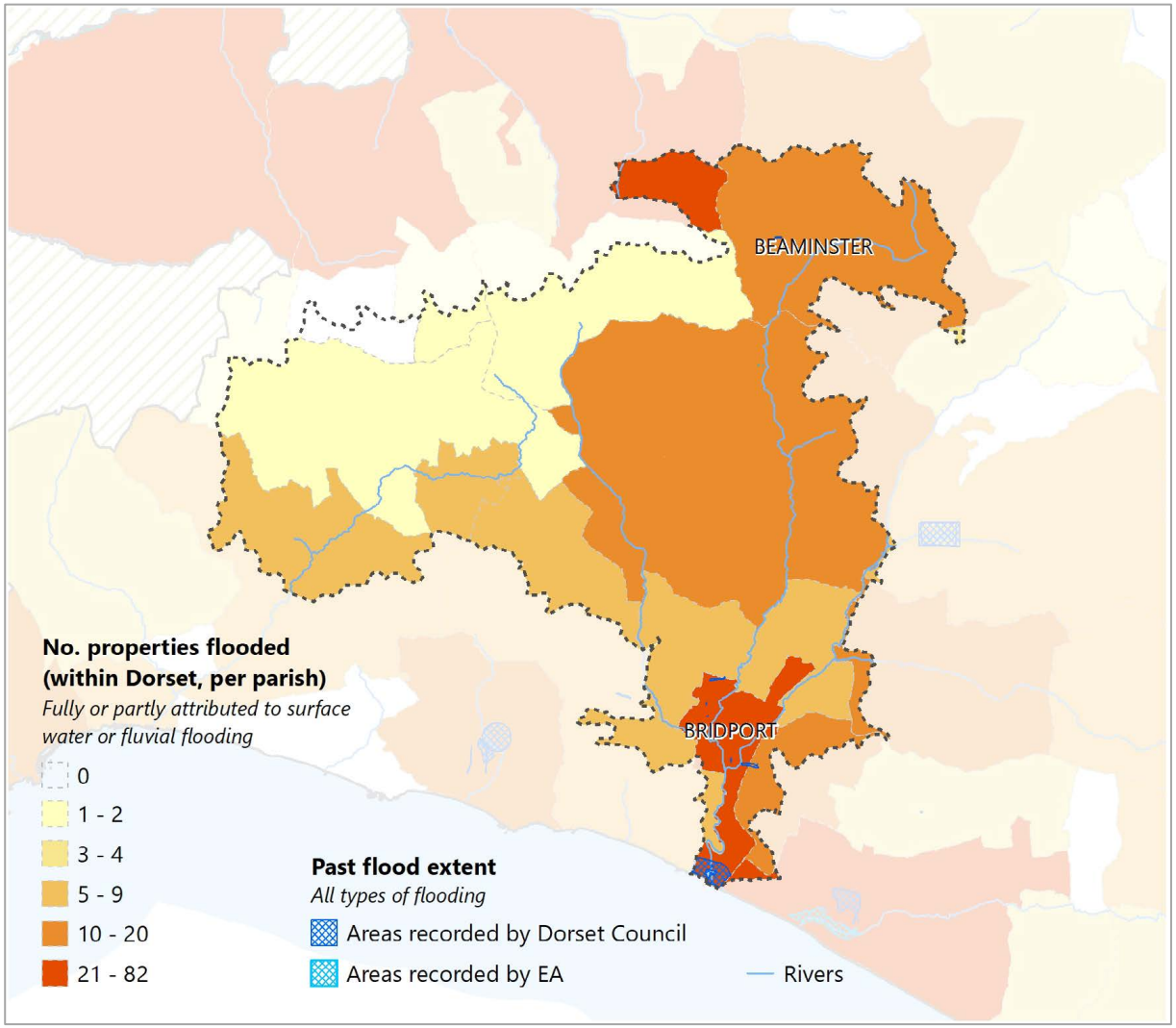
Data sources (more detail on page 54)

Indicator	Data used	Level	Res.	Date
Naturalness of flow regime	EA Water Framework Directive 2019 – hydrological regime status	N	●	●
Vegetation cover	Dorset habitat map – selected landcovers – all except bare ground, cliffs, quarries, urban and water	N	●	●

Flood Protection

2. Areas for Investigation & Action

Local evidence of past flood events and impact gives an indication of where may need targeting to improve resilience in the future. This page shows local and national data of **past flood events**.



Datasets used in map: OSV, AONB, OSBL, LCA, DFP, DFE, EAFE. See page 54 for full references.

Dorset Council data on the number of **properties flooded** by surface water or fluvial (river) flood events has been summarised by parish, for all parishes in Dorset which share at least some of their area with the Dorset AONB. Darker shades represent parishes with a higher number of properties which have been flooded. Areas of the AONB flooded in the past, during all types of **flood events**, are shown in blue, using data from Dorset Council and the Environment Agency.

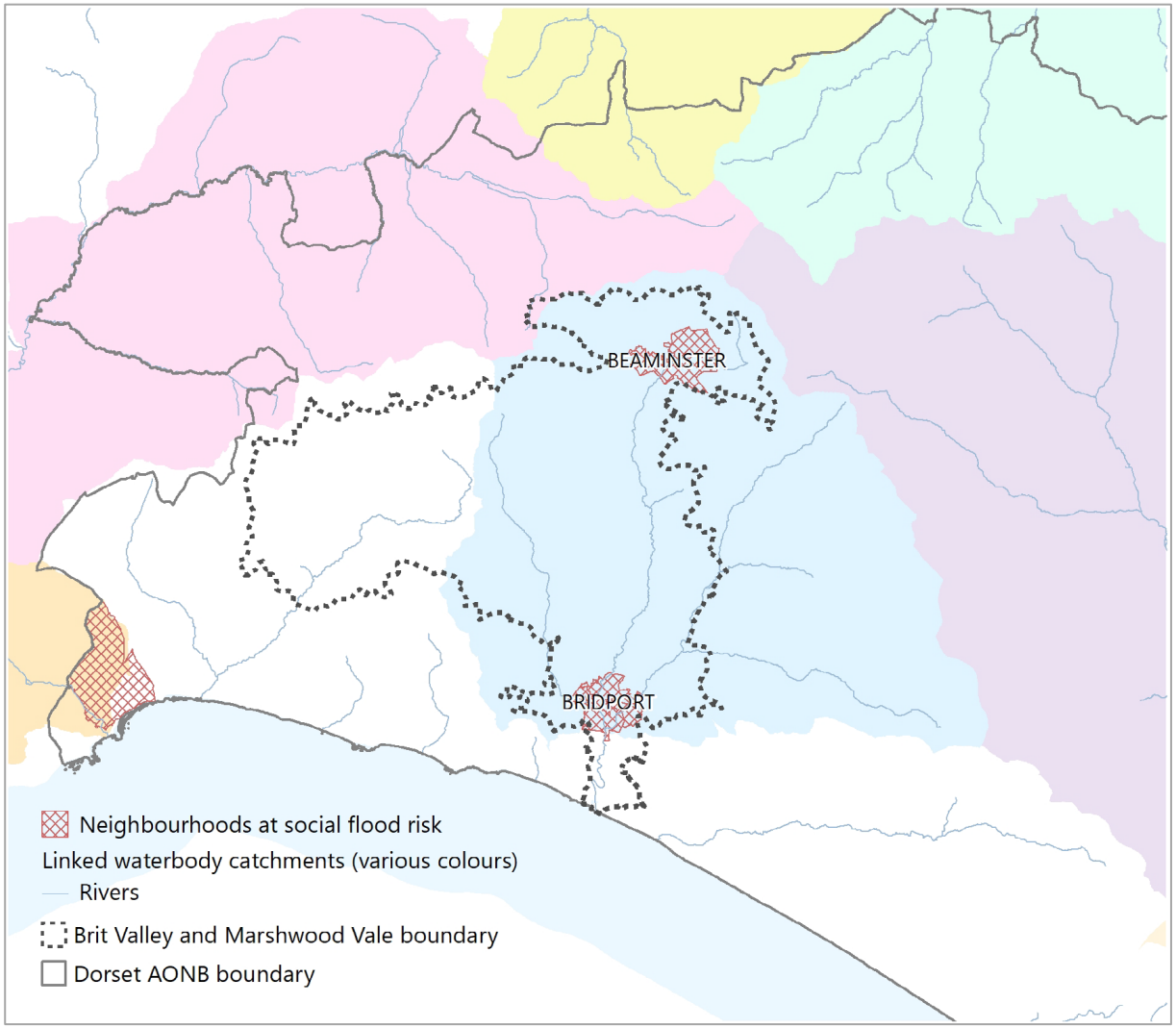
Data sources (more detail on page 54)

Indicator	Data used	Level	Res.	Date
Flooded properties	Dorset Council flood records – summarised to parishes	L	●	●
Flood extents	Dorset Council flood records	L	●	●
Flood extents	Environment Agency Historic Flooding	N	●	●

Flood Protection

2. Areas for Investigation & Action

Flooding has the potential to negatively affect people and communities. By considering both the vulnerability of communities and the opportunities for land management interventions, actions can be targeted to have a positive impact on communities most at risk.



Datasets used in maps: OSV, AONB, OSBL, LCA, SFRI, WFDWC, WFDL. See page 54 for full references.

The **Social Flood Risk Index** identifies communities who are both exposed to flood risk and who are more vulnerable to the effects of flooding, due to factors such as health, preparedness and the availability of community support. The map highlights neighbourhoods identified as both at risk of fluvial flooding and at a level of vulnerability higher than the national average. **Please note that this is based on flood risk from rivers and the sea, so coastal areas may not be affected by changes in land management upstream.**

Land management can help to reduce flood risk through the implementation of natural flood management (NFM) techniques (see next page for more detail). These are small scale solutions in the landscape which aim to replicate or enhance natural processes to allow water to be slowed and stored and therefore reduce flood peaks. Where a river catchment is connected to a vulnerable neighbourhood, and it's catchment partially falls within the AONB, it is highlighted. Different colours have been used to show the different river systems.

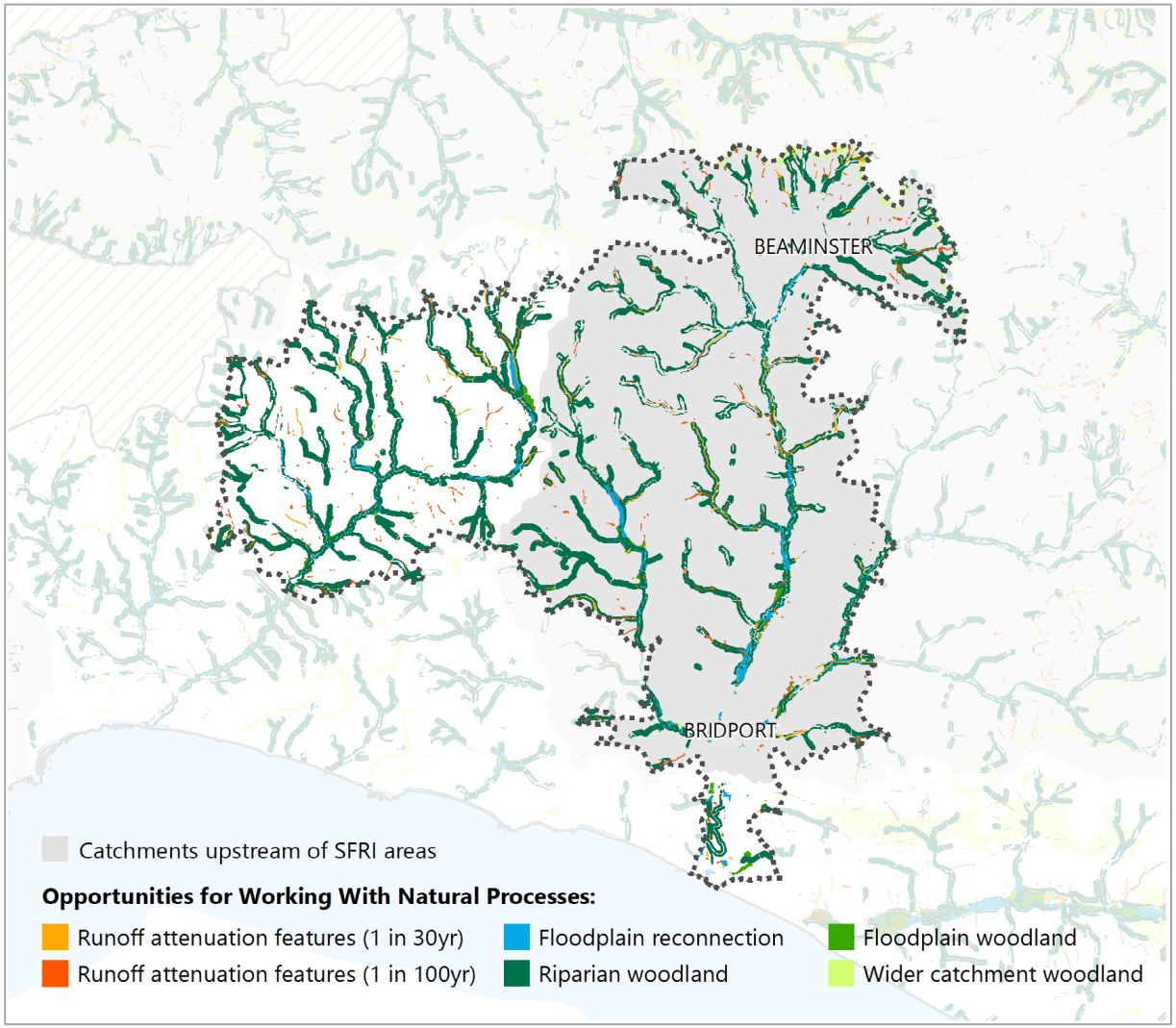
Data sources (more detail on page 54)

Dataset	Level	Res.	Date
Climate Just Social Flood Risk Index	N	●	●
EA Waterbody Catchments	N	●	●

Flood Protection

2. Areas for Investigation & Action

The Environment Agency have mapped potential opportunities for several types of **Natural Flood Management** (NFM - also known as '**Working With Natural Processes** to reduce flood and coastal erosion risk') across the country.



Datasets used in map: OSV, AONB, OSBL, LCA, WFDWC, WWNP. See page 54 for full references.

These include opportunities for different types of woodland planting, floodplain reconnection features like restored riverside wetlands and meadows, and runoff attenuation features which aim to slow pathways of water across the land, like storage ponds or leaky barriers. A number of areas are also excluded from the woodland maps such as urban areas and existing woodland.

These potential opportunities are spread across the landscape. In the map, the catchments identified on the previous page are shown in grey to highlight areas where NFM could help to ease flood risk on vulnerable communities. However, it should be kept in mind that some of the vulnerable communities will be at risk from coastal flooding, which will not be affected by inland NFM measures. In addition, NFM is generally thought to have the most measurable impact in small catchments, so the impact of NFM may be limited for communities lying within a large and complex catchment.

Data sources (more detail on page 54)

Dataset	Level	Res.	Date
EA Working with Natural Processes	N	●	●

Wildfire Risk

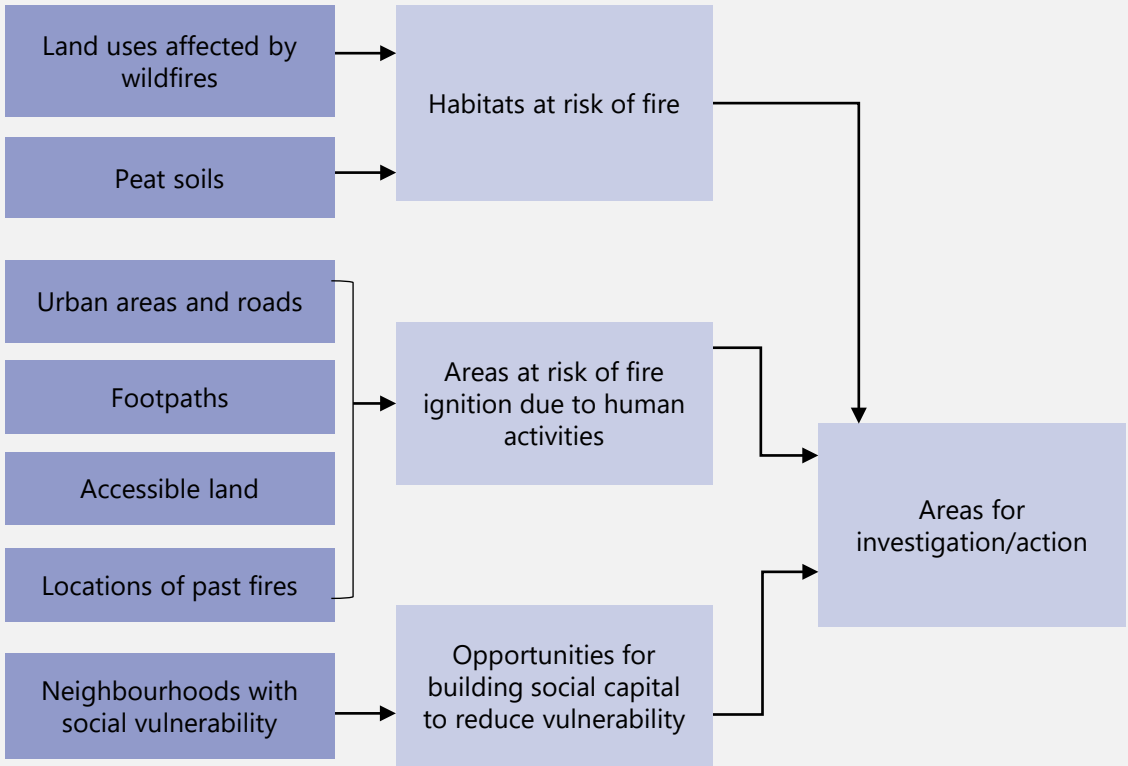
A wildlife is an uncontrolled fire in an area of vegetation, which may have natural causes or, more commonly, be caused accidentally or deliberately by people. Though not one of the typical ecosystem services included in natural capital assessments in England, it is of local importance in Dorset. In addition, wildfires are of increasing concern in the UK as their frequency and magnitude are considered to be likely to increase with climate change [7].

The chapter is slightly different to the other chapters. The first section will highlight natural assets which are most at risk of wildfires. The second section will map areas for further investigation and action to reduce the risk of wildfires occurring and reduce their impact.

1. Map natural capital assets in relation to wildfire risk

Quantity and location

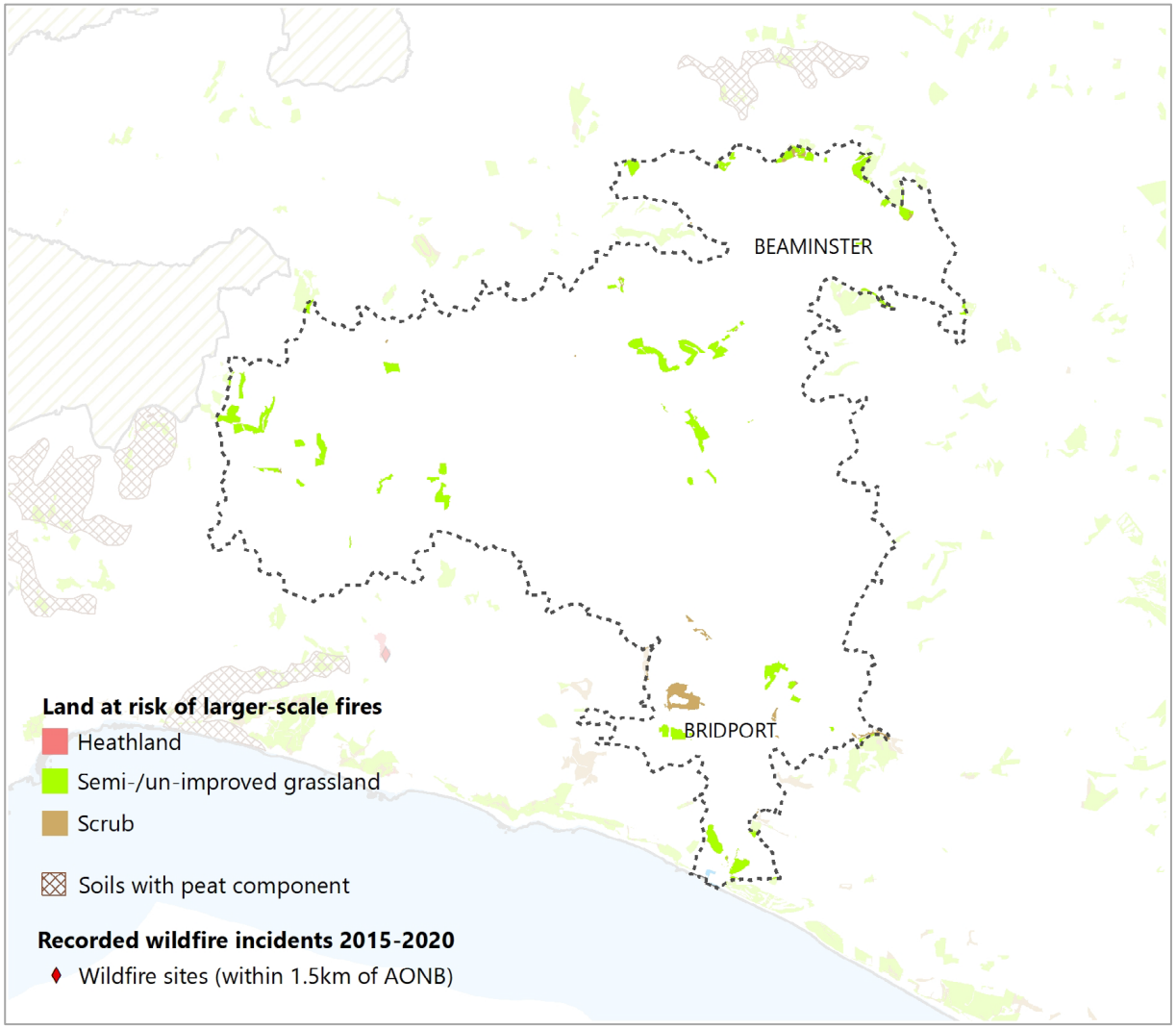
2. Map areas for investigation and action for reducing wildfire risk



Wildfire Risk

1. Areas of risk

Wildfires occur across the country and on all main terrestrial habitats, but, by area, the most affected are **heathland** and **peatland**. Fires occur most frequently in woodland, agricultural land and urban areas but cover the greatest area on semi-natural open habitats, particularly **moorland** and **heathland**, and to a lesser extent, **semi-natural grassland**.



Particularly vulnerable habitats are those where 'woody' vegetation occurs, including **dwarf-shrubs** (especially heather), woody species such as **gorse and some scrub species** and some **grasses**. In addition, the structure, fuel load, and moisture content of vegetation can impact wildfire risk and severity.

As well as being affected by vegetation characteristics, risk and occurrence of wildfire in the UK is associated with hot and dry weather conditions, **public access**, **recent wildfires** and recent or ongoing managed burning activity. Weather conditions have a significant temporal element and are not mapped in this document. Current areas of public access through public open space and public rights of way are mapped on page 43.

Information sourced from Natural England (2020) 'The causes and prevention of wildfire on heathlands and peatlands in England' [7]

Data sources (more detail on page 54)

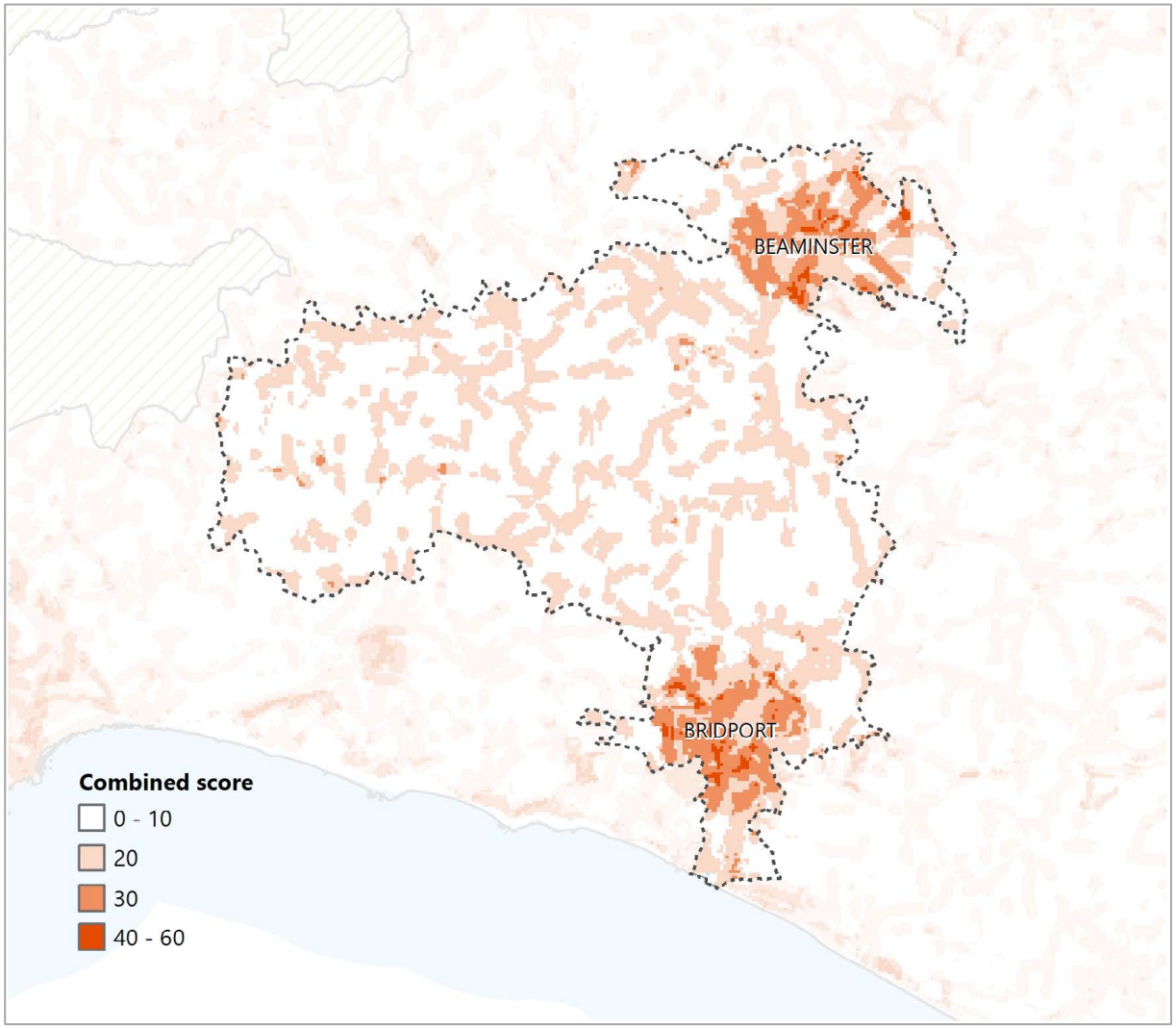
Indicator	Data used	Level	Res.	Date
Land uses at risk of large-scale wildfires	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●
Peaty soils	NATMAP soils – selected soil types	N	●	●
Wildfire incidents	Urban Heaths Partnership incident recording data	L	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, NAT, UHP. See page 54 for full references.

Wildfire Risk

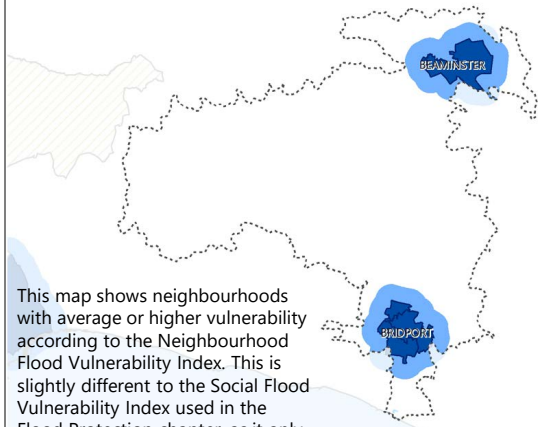
2. Areas for Investigation & Action

Areas with potential for action to reduce the risk of wildfires are shown below, with darker shades representing areas to be targeted for investigation and action. The map combines a number of factors, shown to the right of the map, and the full scoring system is detailed in Appendix 2.



Datasets used in maps: OSV, AONB, OSBL, LCA, PROW, NT, NNR, CP, OSG, CROW, DHM, NFVI, UHP.
See page 54 for full references.

Vulnerable neighbourhoods (with 500m buffer)



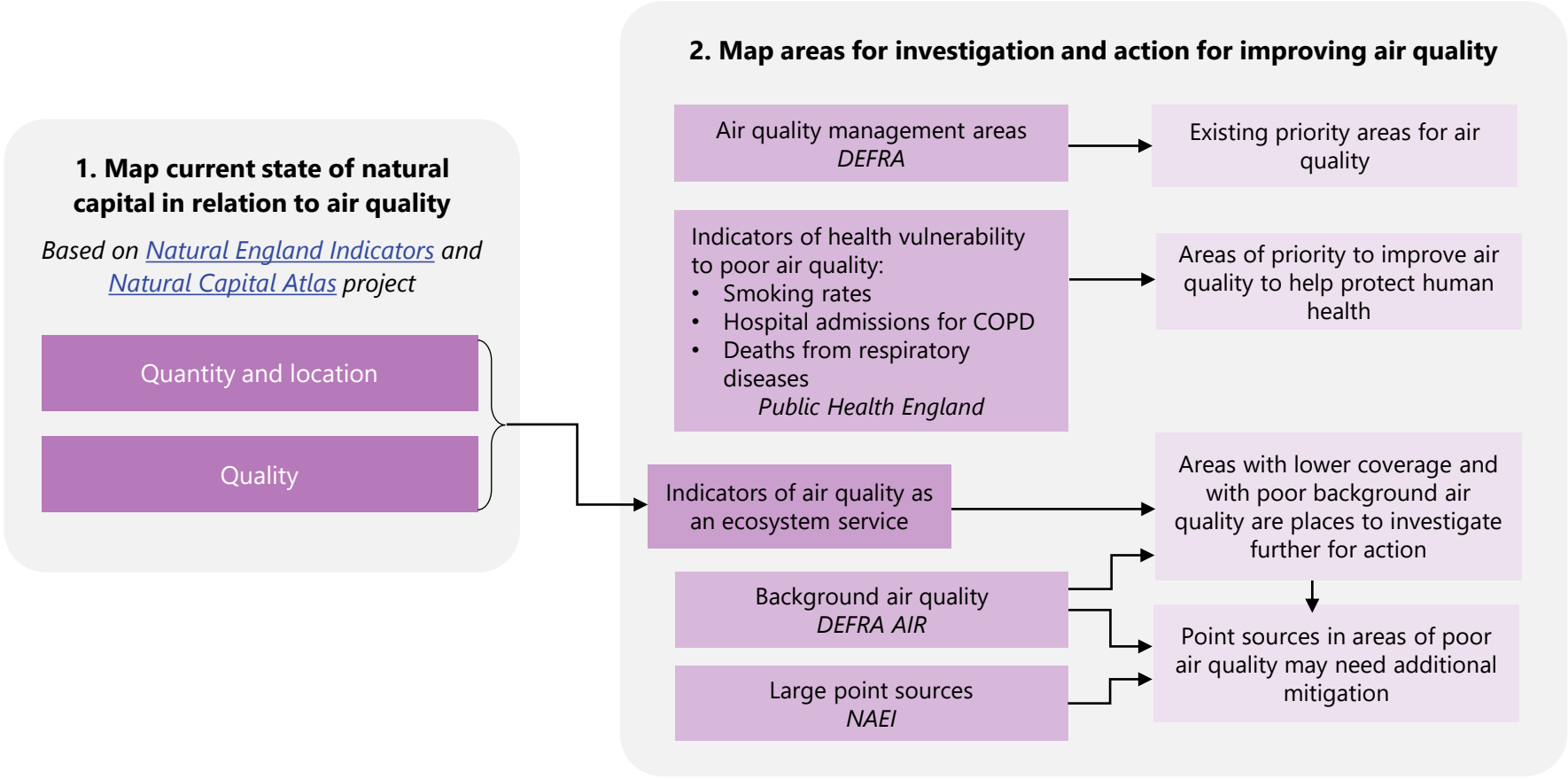
This map shows neighbourhoods with average or higher vulnerability according to the Neighbourhood Flood Vulnerability Index. This is slightly different to the Social Flood Vulnerability Index used in the Flood Protection chapter, as it only considers community vulnerability, and not actual flood risk.

Areas of risk & description	Dataset	Level	Res.	Date
Public Rights of Way	Public Rights of Way	**L**	●	●
Accessible Land	Various datasets – see page 43	**N**	●	●
Urban land	Dorset habitat map	**L**	●	●
Above three risk factors all relate to public access. There is evidence from analysis of data from south Wales that wildfires are associated with public access, especially on or near the rural/urban interface, with over 90% of 'grassfires' recorded within 100m of a road or public right of way (PROW) and 99% within 500m [7].				
High risk habitats Wildfires cover the greatest area on moorland and heathland and, to a lesser extent, semi-natural grasslands.	Dorset habitat map – selected land covers	**L**	●	●
Vulnerable neighbourhoods (see map above) The factors in the neighbourhood flood vulnerability index are likely to also be relevant for wildfires, e.g. preparedness and community support.	Climate Just Neighbourhood Flood Vulnerability	**N**	●	●
Sites of wildfires See previous page – recent wildfire activity is a risk factor.	Urban Heaths Partnership incident recording	**L**	●	●

Clean Air

Clean air is important for people's health and for healthy ecosystems. Air quality is the term used to describe the levels of pollution in the air. When air quality is poor, pollutants in the air may be hazardous to people, particularly those with lung or heart conditions[8]. In the past, the main air pollution problem was smoke and sulphur dioxide from fossil fuels such as coal. Now, the major threat to clean air is from traffic emissions. Petrol and diesel motor vehicles emit a variety of pollutants, principally carbon monoxide (CO), oxides of nitrogen (NO_x), volatile organic compounds (VOCs) and particulate matter (PM_x)[9].

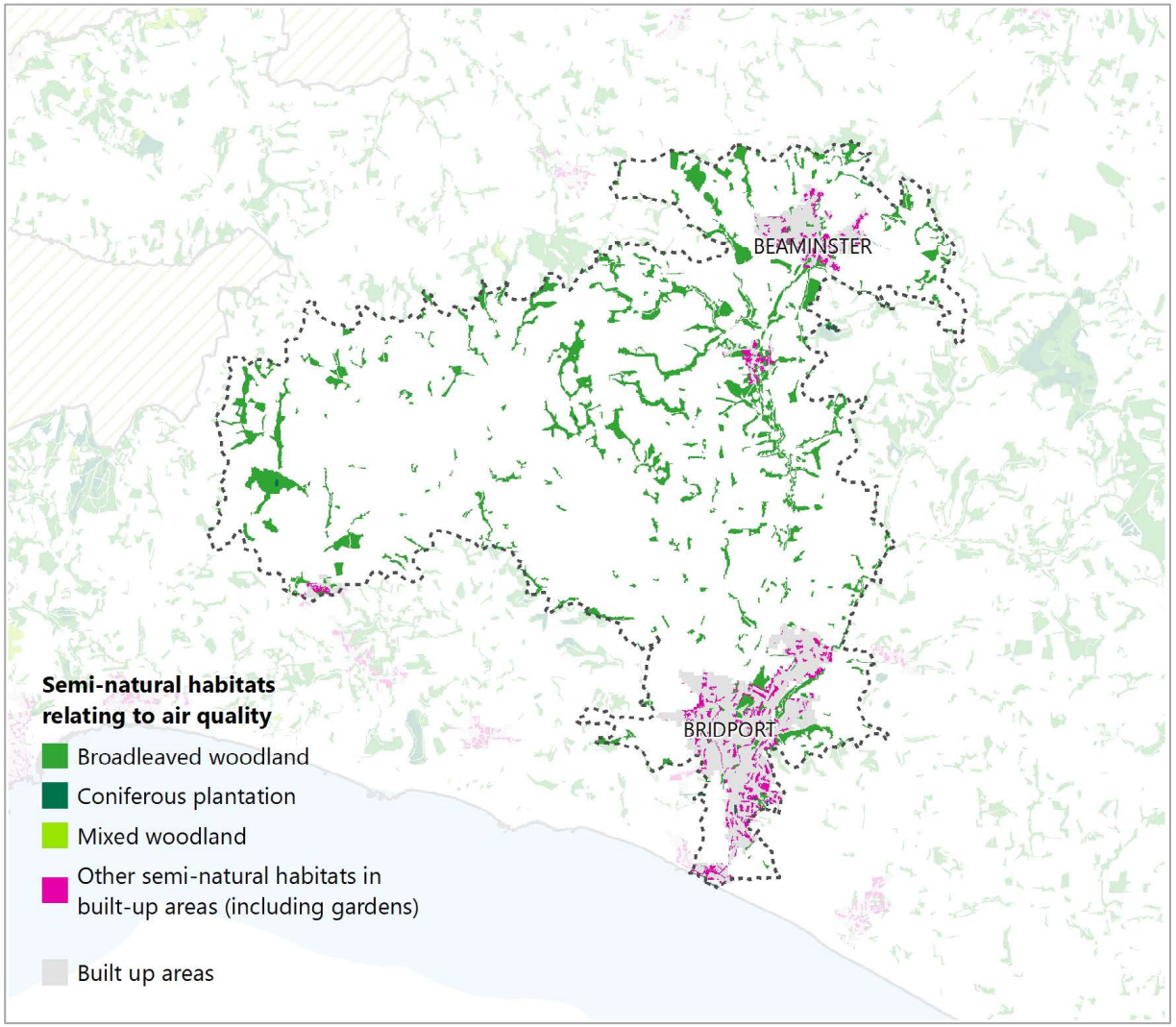
A growing body of research suggested that smaller particles, in particular PM less than 2.5µm in diameter ($PM_{2.5}$), is a metric for air pollution which is closely associated with the adverse health effects of poor air quality. Therefore, this section will use data relating to $PM_{2.5}$ where relevant.



Clean Air

1. Indicators of Current Provision: Quantity & Location

The natural assets mapped on this page contribute to **air quality** as an ecosystem service. Where the assets are present the landscape is likely to be contributing to the provision of air quality services, and where the assets are absent (where the map is white, or grey for urban areas) there may be a lack of natural assets which contribute to clean air.



Datasets used in map: OSV, AONB, OSBL, LCA, DHM, ONSBU. See page 54 for full references.

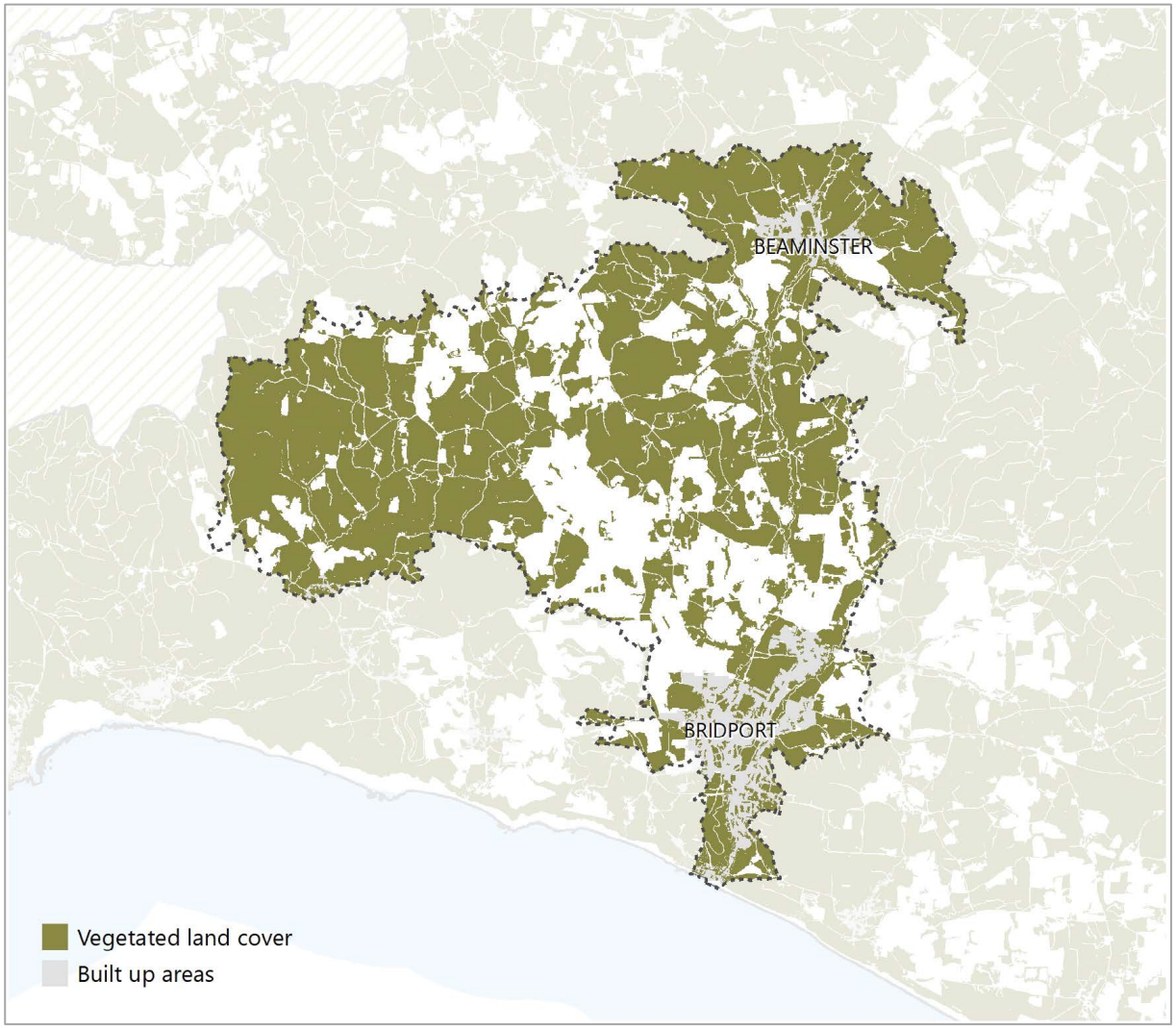
Data sources (more detail on page 54)

Indicator(s)	Data used	Level	Res.	Date
Semi-natural habitats Urban habitats	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●

Clean Air

1. Indicators of Current Provision: Quality

This page maps the some aspects of the quality or condition of natural assets which contribute to clean air, as a way of indicating how effectively they are likely to be providing the health benefits associated with clean air.



Datasets used in map: OSV, AONB, OSBL, LCA, DHM, ONSBU. See page 54 for full references.

Permanent vegetation cover is an indicator of the how well the landscape may be able to provide a number of services and can be estimated using habitat and land cover data. In particular for air quality, it is **vegetation cover in urban areas** which is the best indicator of how well the landscape is providing benefits for air quality.

Data sources (more detail on page 54)

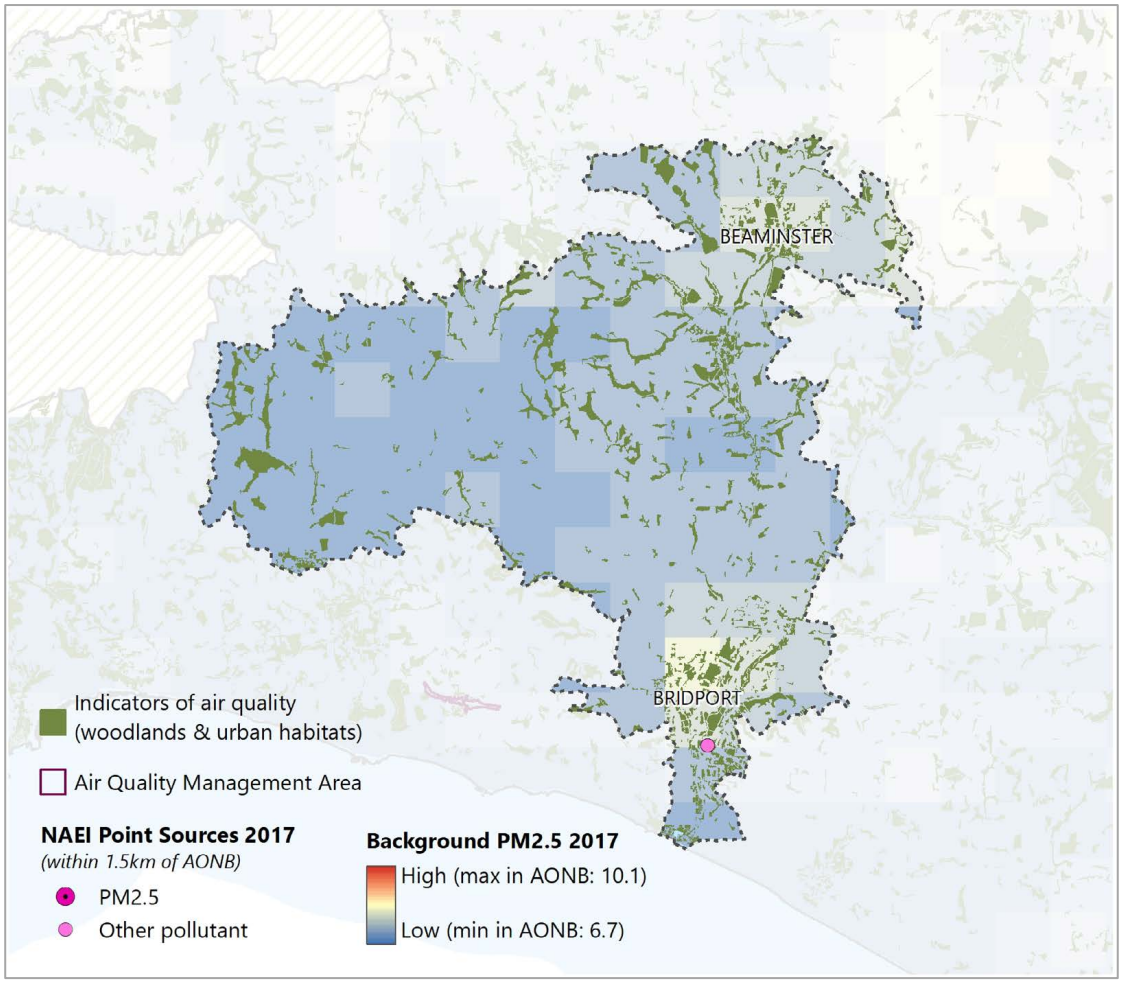
Indicator(s)	Data used	Level	Res.	Date
Vegetation cover	Dorset habitat map – selected landcovers	L	●	●

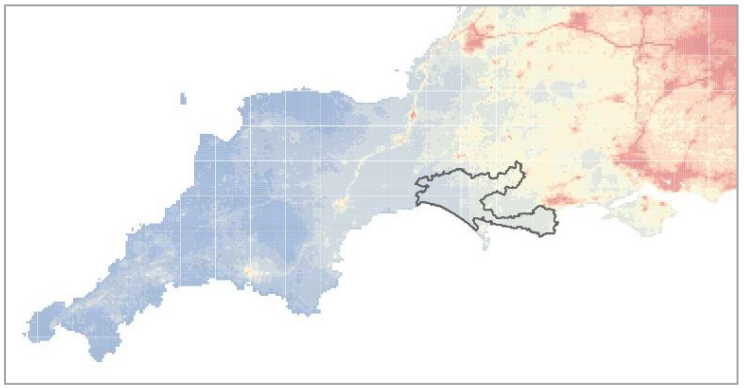
Clean Air

2. Areas for Investigation & Action

Air quality can be improved by either reducing emissions or by increasing the quantity and quality of natural assets which improve air quality. By comparing where there are high levels of air pollution and/or more large sources with areas lacking natural assets which contribute to clean air, we can identify areas where interventions will have the greatest impact.

The next page investigates a further factor to consider when planning interventions: the health of the population and therefore those who may be at most risk of the impacts of poor air quality.





Background air quality – regional context

The map to the left shows the background air quality on a blue to red colour scale using data for the AONB. To provide a regional context for these values, above is the data for the south-west of England, using the same colours but with values from across a wider area. The levels within the AONB are in the mid range for the region.

Data sources (more detail on page 54)

	Dataset	Level	Res.	Date
This page	Dorset habitat map – selected land covers (see page … for more detail)	L	●	●
	Air Quality Management Areas	N	●	●
	NAEI Large Point Sources	N	●	●
	Background PM2.5	N	●	●
Next page	Local health indicators – COPD	N	●	●
	Local health indicators – Smoking	N	●	●
	Local health indicators – Respiratory diseases	N	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, AQMA, NAEI, BPM. See page 54 for full references.

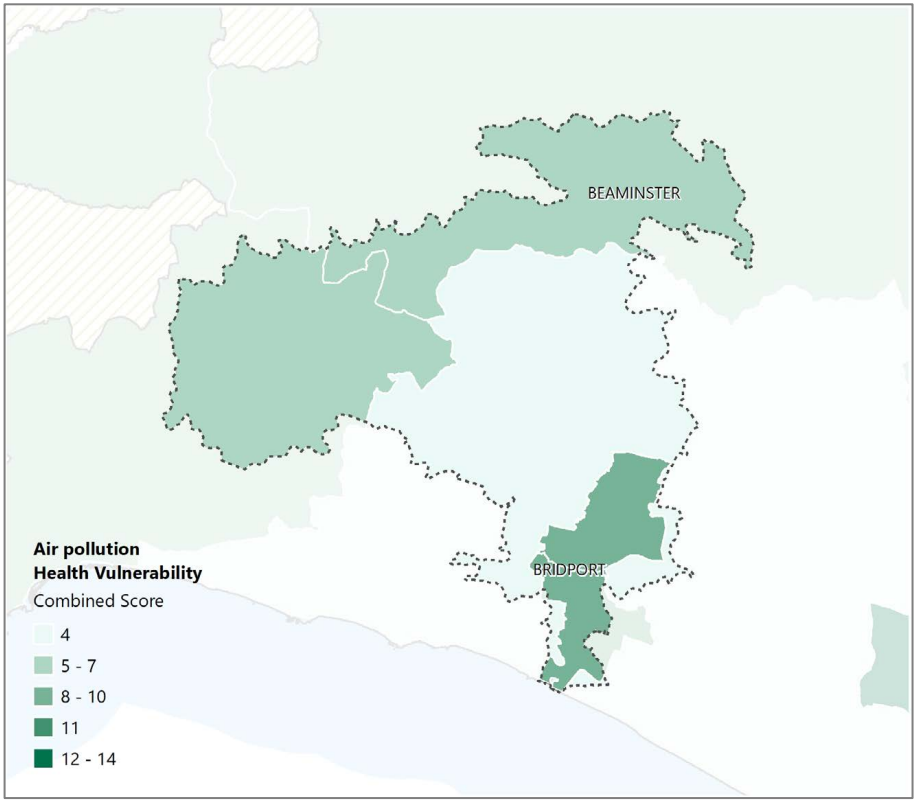
Clean Air

2. Areas for Investigation & Action

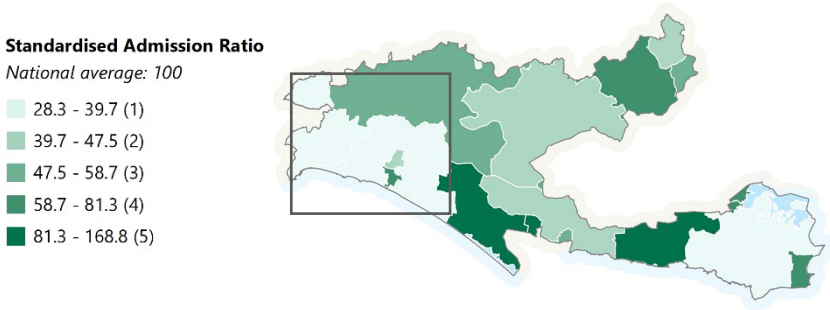
A further consideration for the targeting of air quality improvement measures is the vulnerability of people to the health impacts of poor air quality. Many factors could be considered in this health vulnerability assessment, but in this assessment the following factors have been investigated:

- Those suffering health problems which may be caused or exacerbated by poor air quality – indicated using data on emergency hospital admissions for COPD and deaths from respiratory diseases
- Those who may be at greater risk due to lifestyle factors – indicated using data on smoking prevalence

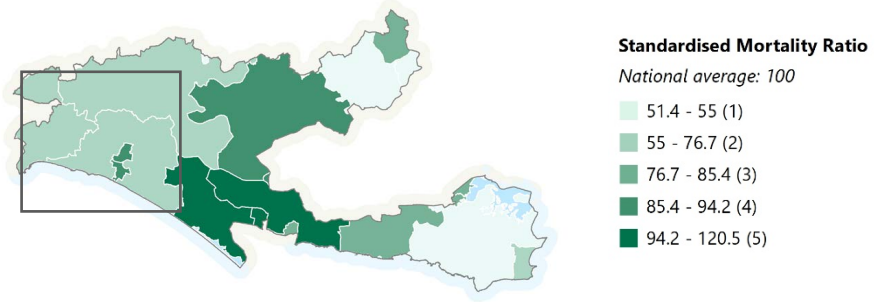
These have then been scored on a 1-5 scale and combined by adding the 3 scores together. In each map, darker shades indicate poorer health according to the indicator.



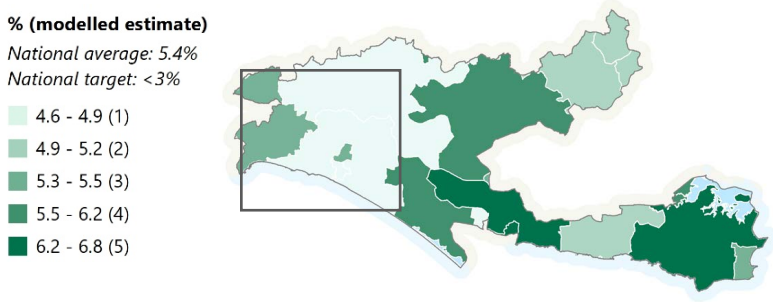
Emergency hospital admissions for chronic obstructive pulmonary disease



Deaths from respiratory diseases



Smoking prevalence at age 15

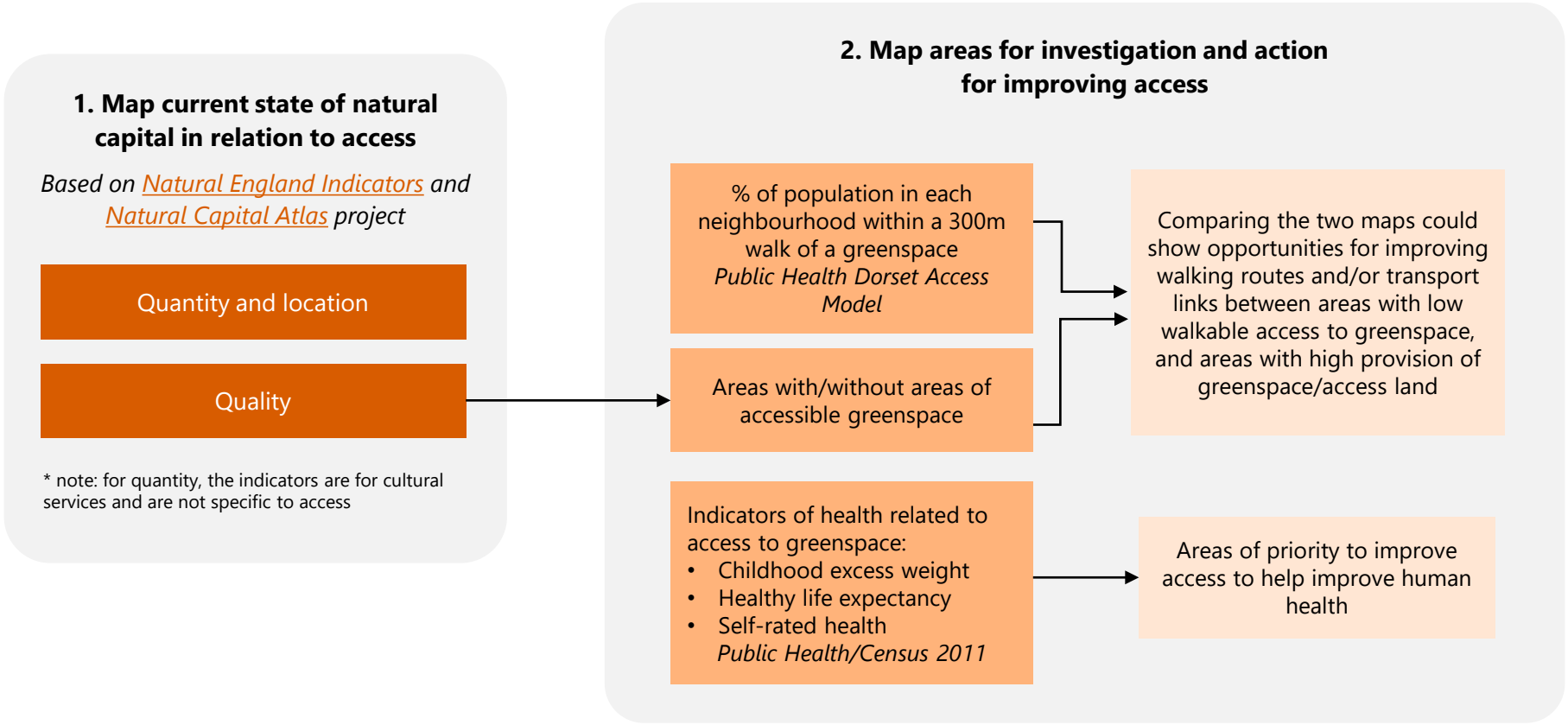


Data on this page shown by Middle Layer Super Output Areas, with colour grouping by quantile. Scores for the health variables are shown in brackets in each legend.

Datasets used in maps: OSV, AONB, OSBL, LCA, PH3, PH4, PH5, MSOA. See page 54 for full references.

Access

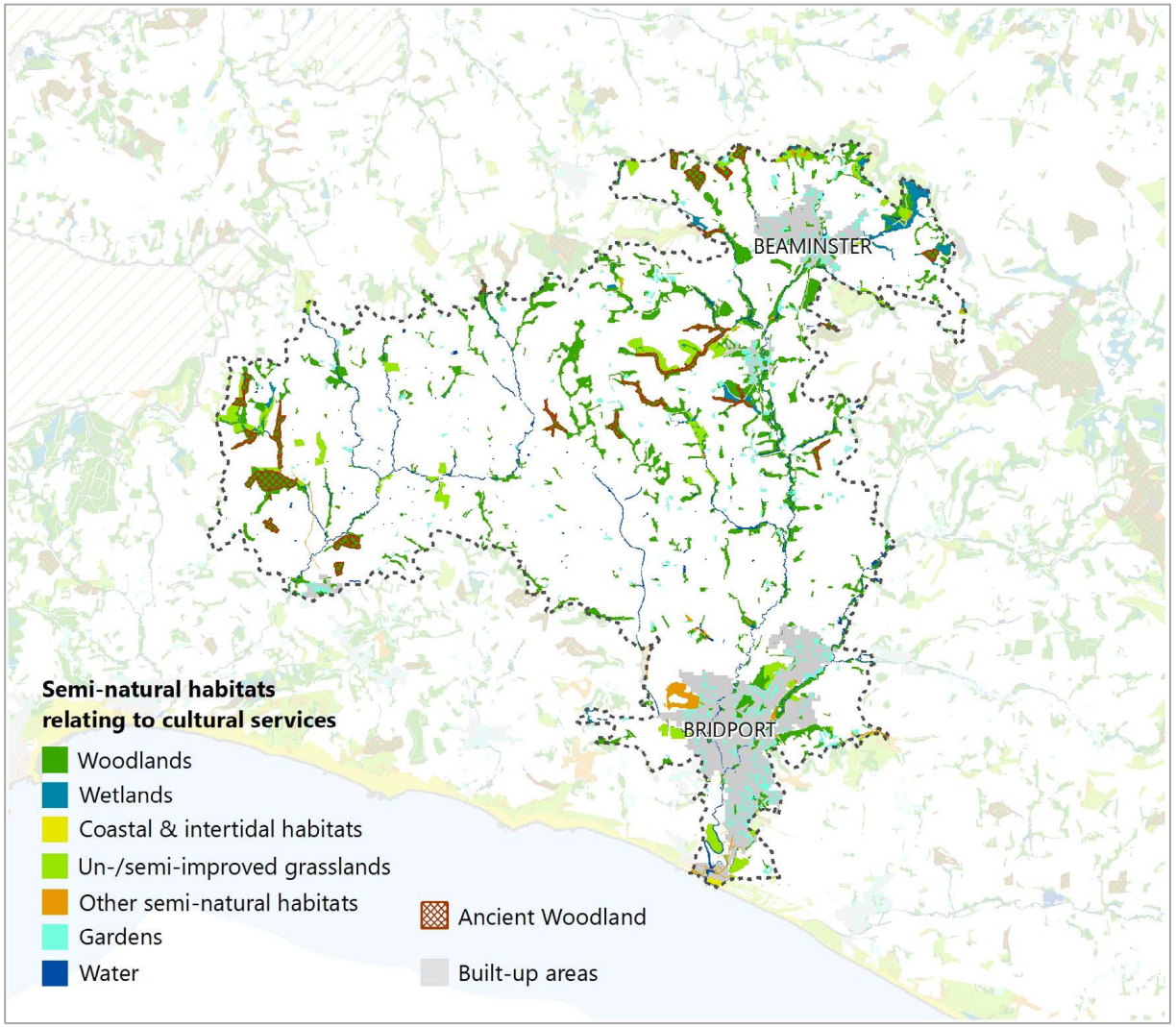
Cultural services relate to the non-material benefits we gain from nature and spending time in more natural spaces, including sense of place, spirituality, inspiration and physical and mental health wellbeing. Public access to natural spaces is often important to allow these benefits to be gained by the wider population. Therefore, this section will start by assessing the quantity and location of assets which may contribute to cultural services, before focusing in on quality indicators relating to accessibility and areas to investigate for improving access and the related benefits for health and well-being.



Access

1. Indicators of Current Provision: Quantity & Location

The natural assets mapped on this page contribute to **cultural ecosystem services**, including but not exclusively relating to access. Where the assets are present the landscape is likely to be contributing to the provision of cultural services, and where the assets are absent (where the map is white, or grey for urban areas) there may be a lack of natural assets which contribute to these services.



Note: this page shows the assets which have the potential to contribute to cultural services generally, not specifically to access.

Data sources (more detail on page 54)

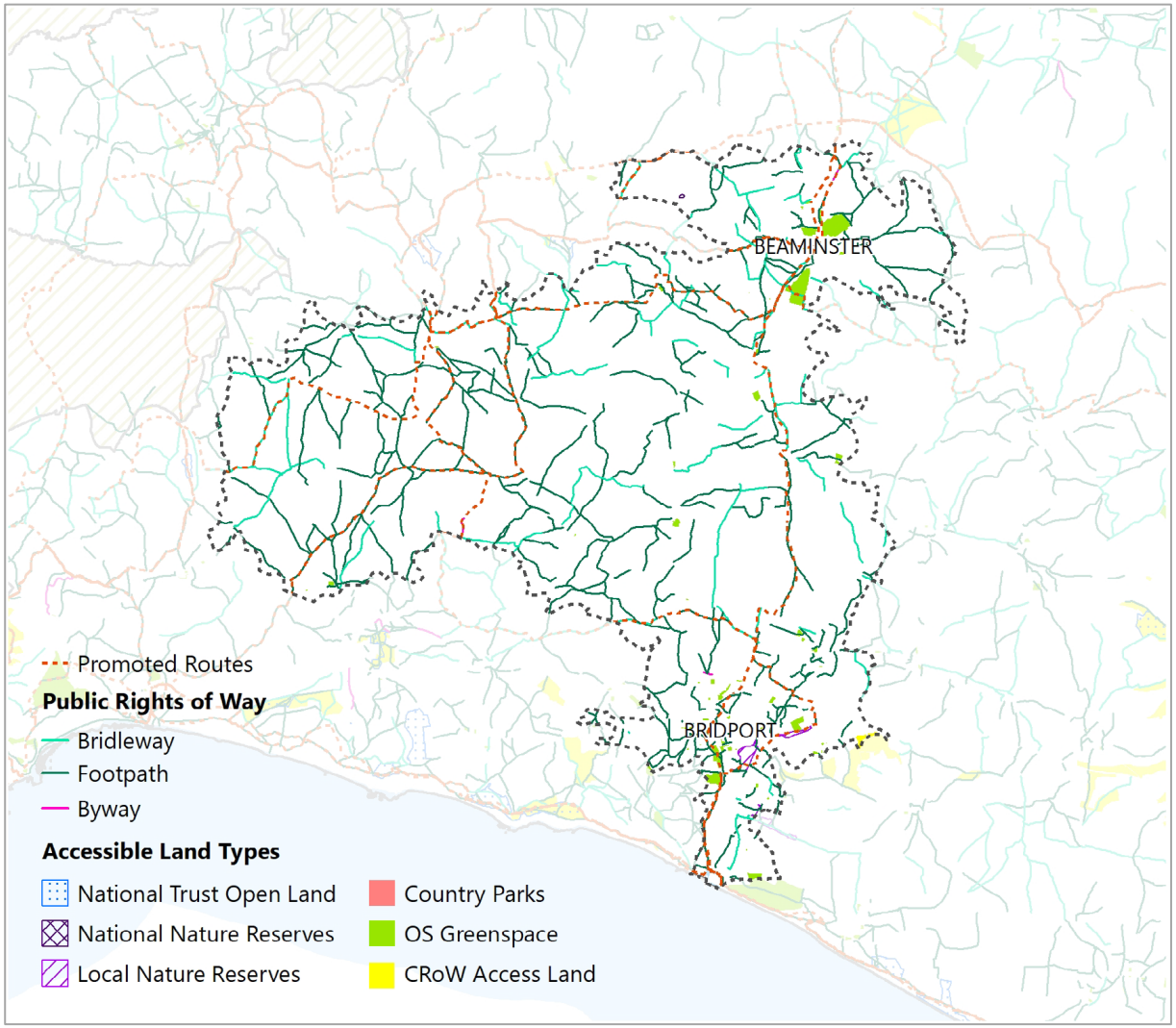
Indicator(s)	Data used	Level	Res.	Date
Semi-natural habitats Urban habitats	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●
Ancient Woodland	Natural England designated ancient woodland map	N	●	●

Datasets used in map: OSV, AONB, OSBL, LCA, DHM, ONSBU, AW. See page 54 for full references.

Access

1. Indicators of Current Provision: Quality

This page maps aspects of the quality or condition of natural assets which contribute to cultural services, as a way of indicating how effectively they are likely to be providing the benefits. In particular, this section focuses on **accessibility**, as an indicator of the ability to experience natural spaces and gain the related health and well-being benefits.



Datasets used in map: OSV, AONB, OSBL, LCA, PROW, NT, NNR, CP, OSG, CROW. See page 54 for full references.

Further evidence showing the condition of linear routes and accessible land would be useful in future to better understand how well the landscape is able to provide cultural services relating to access to nature and greenspaces. For example, consideration could be given to elements such as the condition of paths and the usability for different social groups.

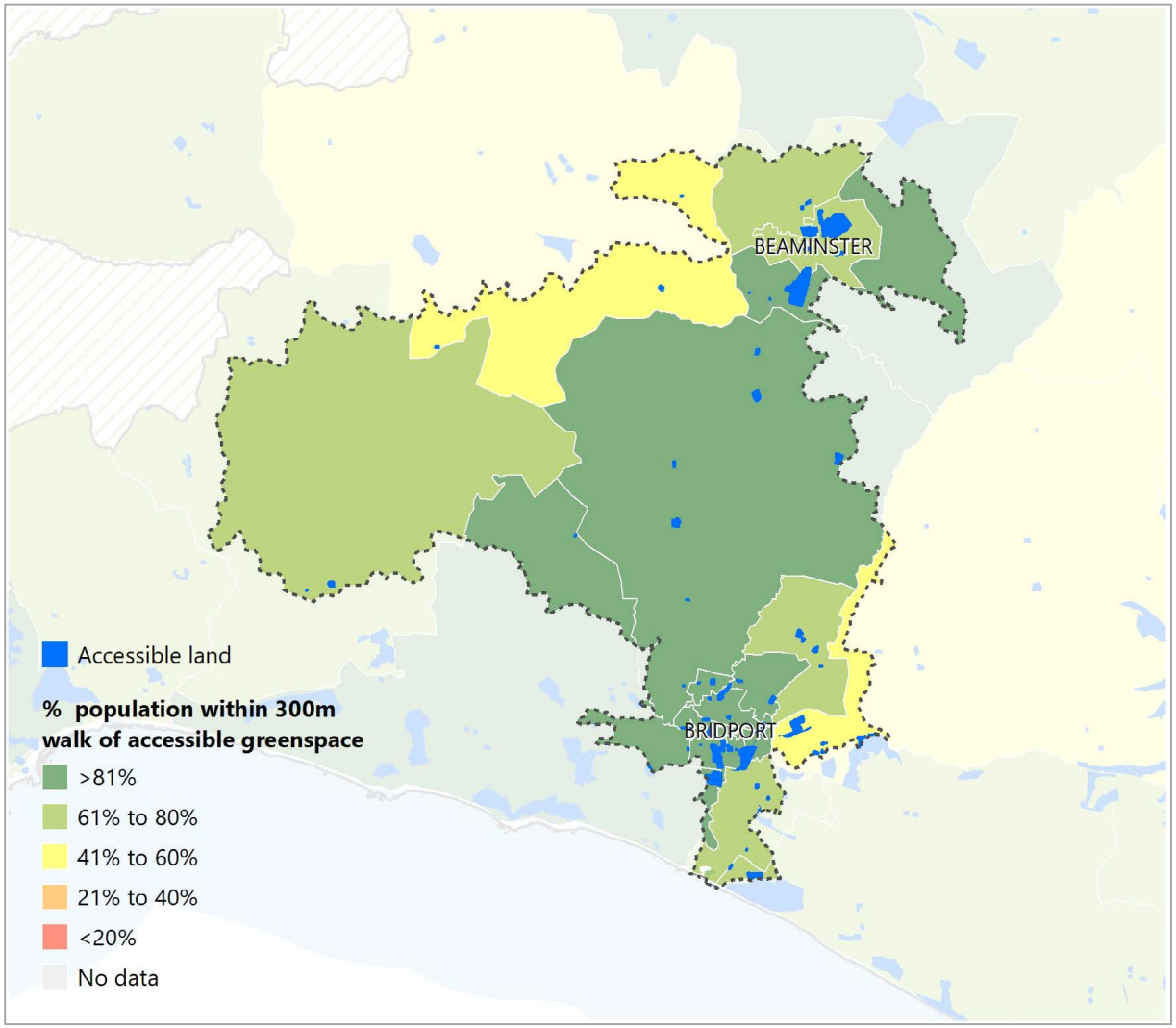
Data sources (more detail on page 54)

Indicator(s)	Data used	Level	Res.	Date
Access via linear routes	Dorset Council Public Rights of Way network	L	●	●
Access to areas of greenspace (note: not included in indicators project)	- National Trust Land Always Open - Natural England National/ Local Nature Reserves - Natural England Country Parks - OS Greenspace - Natural England CRoW access land	N	●	●

Access

2. Areas for Investigation & Action

One way of identifying important areas for improving access to greenspace is to assess who already has access and where there may be gaps in access to greenspace. Access to greenspace has two key factors – the **availability of greenspace** with public access allowed, and the **ability for people to safely travel to these places**.



Datasets used in map: OSV, AONB, OSBL, LCA, PROW, NT, NNR, CP, OSG, CROW, WHO.
See page 54 for full references.

A study has been undertaken by Public Health Dorset to model the proportion of the population across neighbourhoods in Dorset with a **walkable route to an accessible greenspace** of less than 300m. This is based on World Health Organisation advice that everyone should live within a 300m walk of a public green space.

Comparing the access model with areas of accessible greenspace could suggest opportunities for improving walking routes and/or transport links between areas with low access to greenspace, and areas with high provision of greenspace/access land.

Access model data shown by Lower Super Output Areas

Data sources (more detail on page 54)

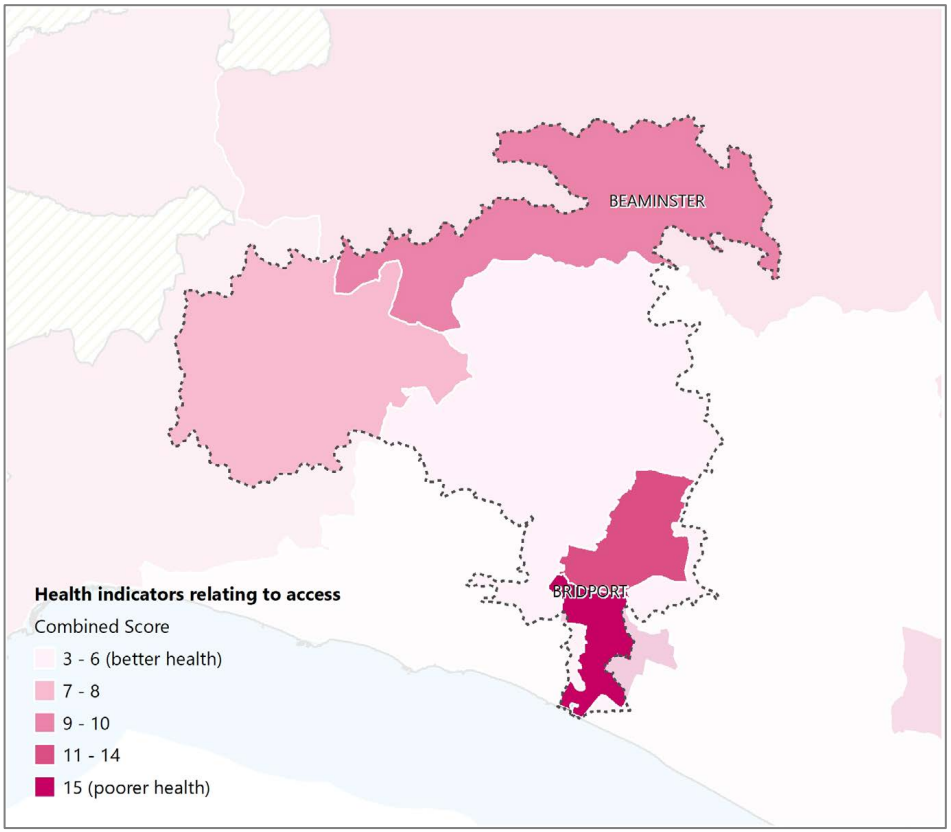
	Dataset	Level	Res.	Date
This page	Public Health Dorset WHO Access Model	L	🟡	🟢
	Access land – as previous page	N	🟢	🟢
Next page	Census data – General health	N	🔴	🔴
	Local health indicators – Children with excess weight	N	🔴	🟡
	Local health indicators – Healthy life expectancy for females	N	🔴	🟡

Access

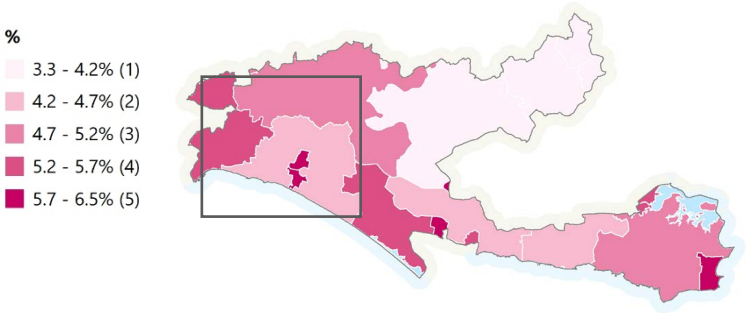
2. Areas for Investigation & Action

Public Health England have identified significant and growing evidence on the health benefits of access to good quality green spaces. The benefits include better self-rated health; lower overweight and obesity levels; improved mental health and wellbeing; and increased longevity[10].

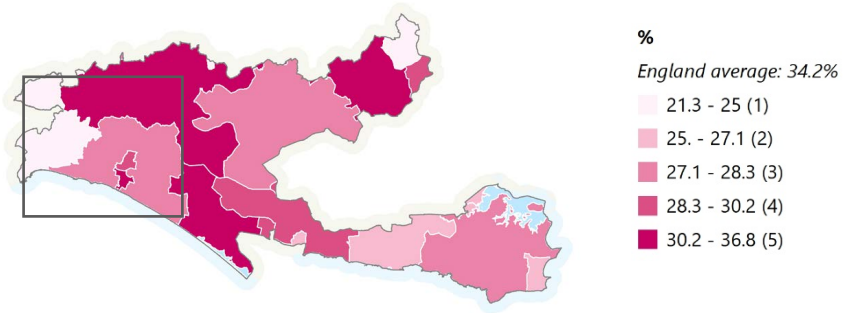
In order to take some of these factors into consideration, data on self-rated health, levels of children with excess weight and healthy life expectancy have been mapped for regions within the AONB. These have then been scored on a 1-5 scale and combined by adding the 3 scores together. In each map, darker shades indicate poorer health according to the indicator.



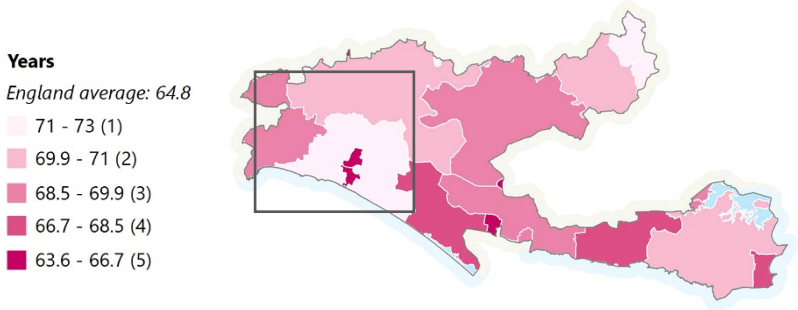
General health - % self-rated as bad or very bad



Children with excess weight (year 6)



Healthy life expectancy for females (2009 – 2013)



Data on this page shown by Middle Layer Super Output Areas, with colour grouping by quantile. Scores for the health variables are shown in brackets in each legend.

Datasets used in maps: OSV, AONB, OSBL, LCA, CEN, PH1, PH2, MSOA. See page 54 for full references.

Built Environment

The built environment, though not strictly a type of natural asset, has a strong contribution to the character of a place or landscape. Human-created features are woven amongst more natural features to create the landscapes that we know. Features created or built by people are also an important part of an area's heritage and contribute to cultural services.

The Dorset AONB has a wealth of heritage, in particular nationally important prehistoric features that reveal the evolution of the landscape and human history during this period.

The Dorset AONB also has one of the highest proportions of listed buildings in the country, many of which are thatched, lending a local distinctiveness to many of its settlements[4].

The Brit Valley Landscape Character Area has several key characteristics and special qualities which relate to the built environment. These include parkland landscapes, historic bridges and watermills of local stone, market towns with a strong industrial heritage, and scattered clustered settlements of golden limestone and thatch which supporting the area's rich historic and built character[5].

The built environment of the Marshwood Vale Landscape Character Area is characterised by scattered, isolated farmsteads and a settlement pattern of dispersed small clustered hamlets, exhibiting a variety of vernacular building materials and thatch[5].

1. Map current quantity and location of built assets

Listed Sites

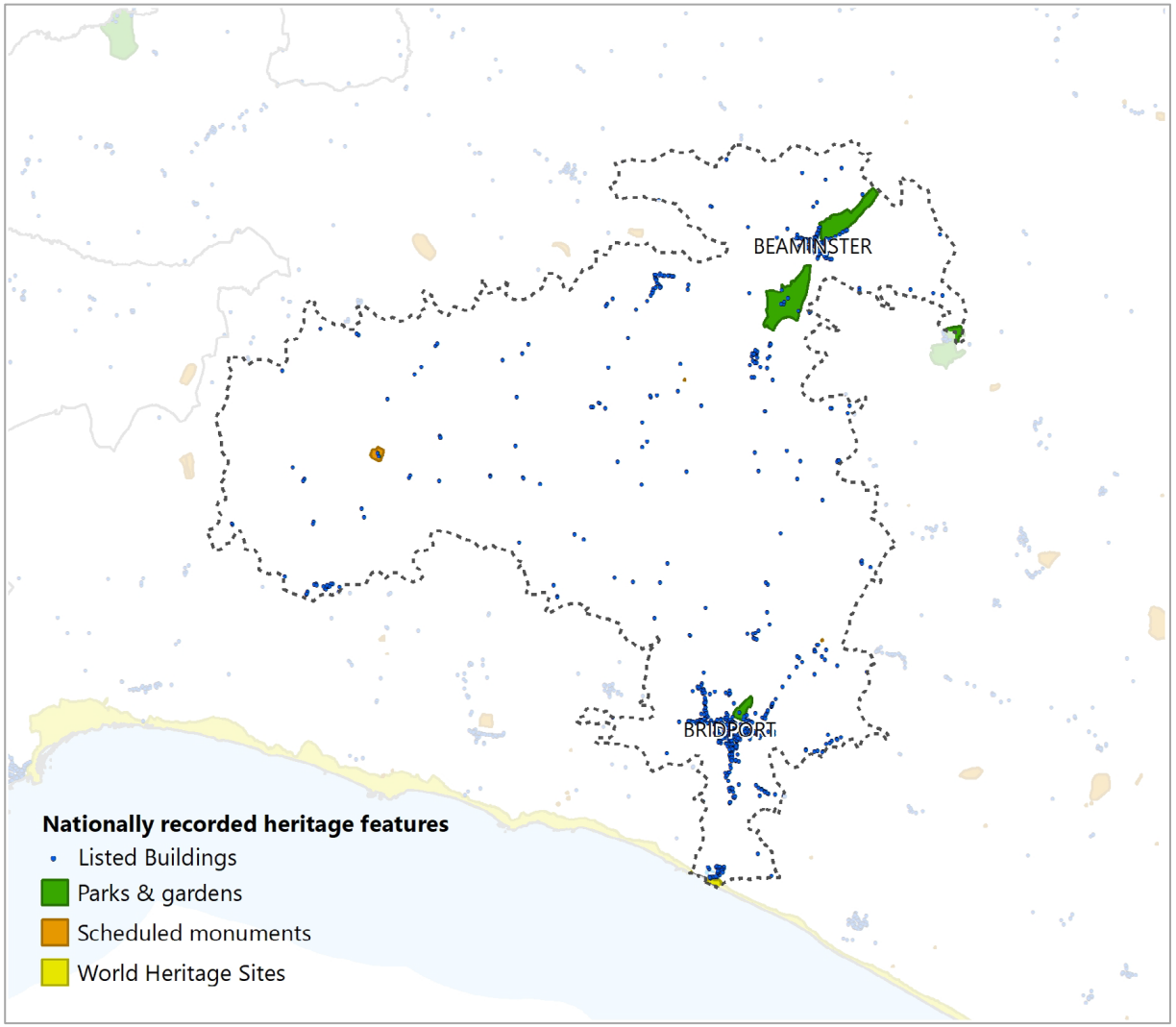
2. Map areas for investigation and action

Heritage at risk

Built Environment

1. Indicators of Current Provision: Quantity and Location

Built environment features of local and national significance are 'listed' by Historic England. Listing is the term given to the practice of listing buildings, scheduling monuments, registering parks, gardens and battlefields, and protecting wreck sites. Listing highlights what is significant about a building or site, and helps to make sure that any future changes to it do not result in the loss of its significance[11].



Note: there are protected wreck sites around the Dorset coast, however as these cannot be influenced by a land management scheme, they have not been mapped in this document.

Data sources (more detail on page 54)

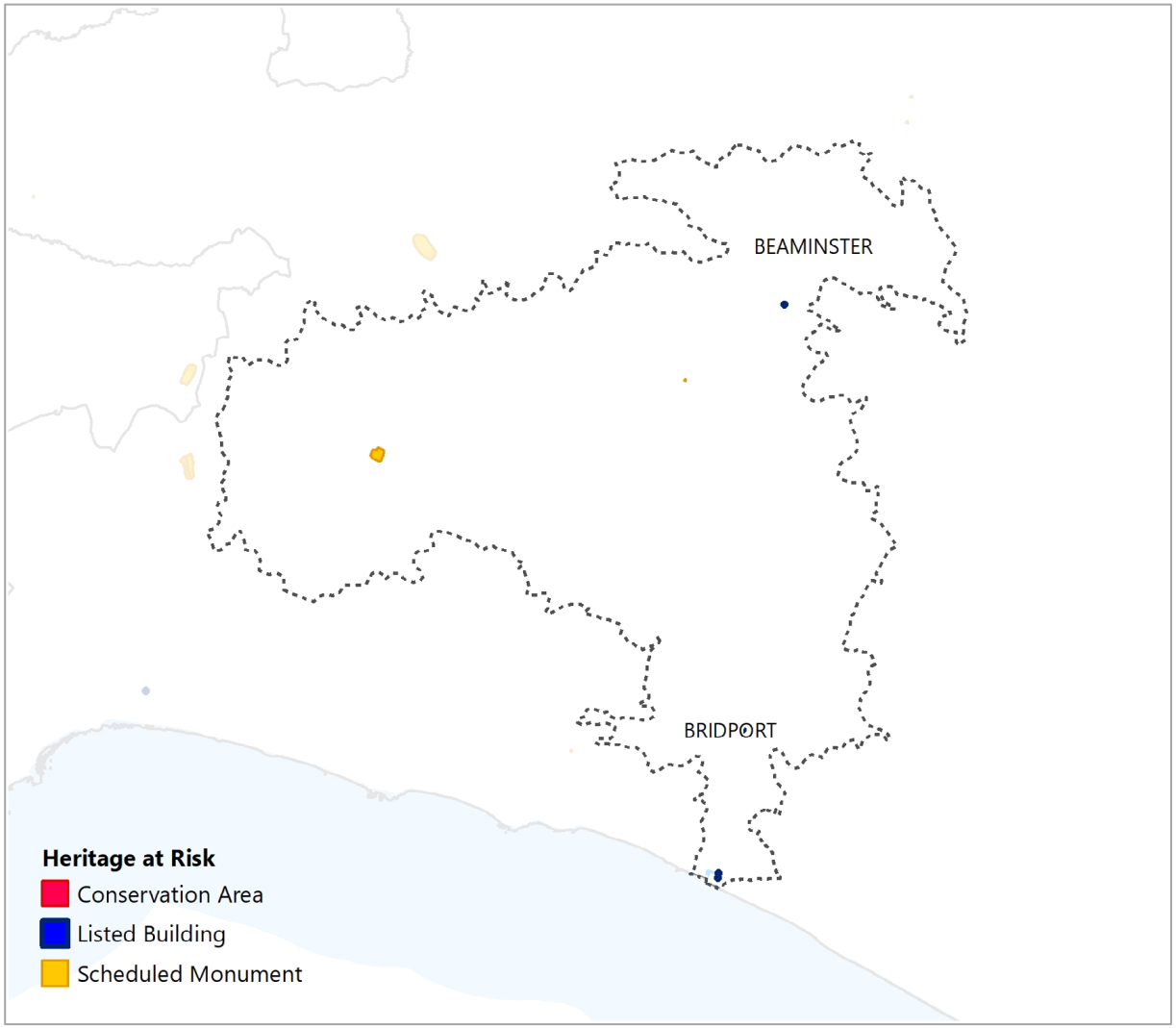
Indicator	Dataset	Level	Res.	Date
Significant heritage features	Listed sites: - Listed buildings - Registered parks and gardens - Scheduled monuments - World Heritage Sites	N	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, LIST. See page 54 for full references.

Built Environment

1. Areas for Investigation & Action

The Heritage at Risk (HAR) programme is led by Historic England and helps show the overall state of England's historic sites. The programme identifies those sites that are most at risk of being lost as a result of neglect, decay or inappropriate development.



Datasets used in maps: OSV, AONB, OSBL, LCA, HAR. See page 54 for full references.

The Risk Register is updated every year to build up a dynamic picture of the sites most at risk and most in need of safeguarding for the future. Heritage at Risk sites can come in many forms; from grand to simple buildings and structures, to large visible earthworks and less visible buried remains. Many issues threaten these sites, including environmental and human impacts.

The Heritage at Risk Register tells communities about the condition of heritage in their local neighbourhood and encourages people to become actively involved in looking after it[12].

Data sources (more detail on page 54)

Indicator	Dataset	Level	Res.	Date
Priority heritage features for further protection	Heritage at Risk sites: - Listed buildings - Scheduled monuments - Conservation areas	N	●	●

Climate Regulation

A well-regulated climate is important for a reduced risk of flooding, drought and extreme weather events, and the associated benefits for health and safety, protection of infrastructure and protection of wildlife and habitats. Climate change is already having an impact and must be tackled in a combination of two ways:

- Mitigation – drastically reducing greenhouse gas emissions and increasing carbon sequestration across our landscapes
- Adaptation – becoming more resilient to the changes which will occur due to climate change

Some actions which will improve adaptation and resilience are shown in other chapters, such as the use of natural flood management techniques to buffer against increased flood risk, and the strengthening of habitat networks to allow species to move around and therefore cope better with a changing climate.

This section will focus on carbon sequestration, the long-term removal, capture or sequestration of carbon dioxide from the atmosphere, as a method of climate change mitigation.

1. Map current state of natural capital in relation to climate regulation

Based on Natural England Indicators and Natural Capital Atlas project

- Quantity and location
- Quality

2. Map areas for investigation and action for climate regulation

Score and combine factors which identify areas of potential for carbon sequestration:

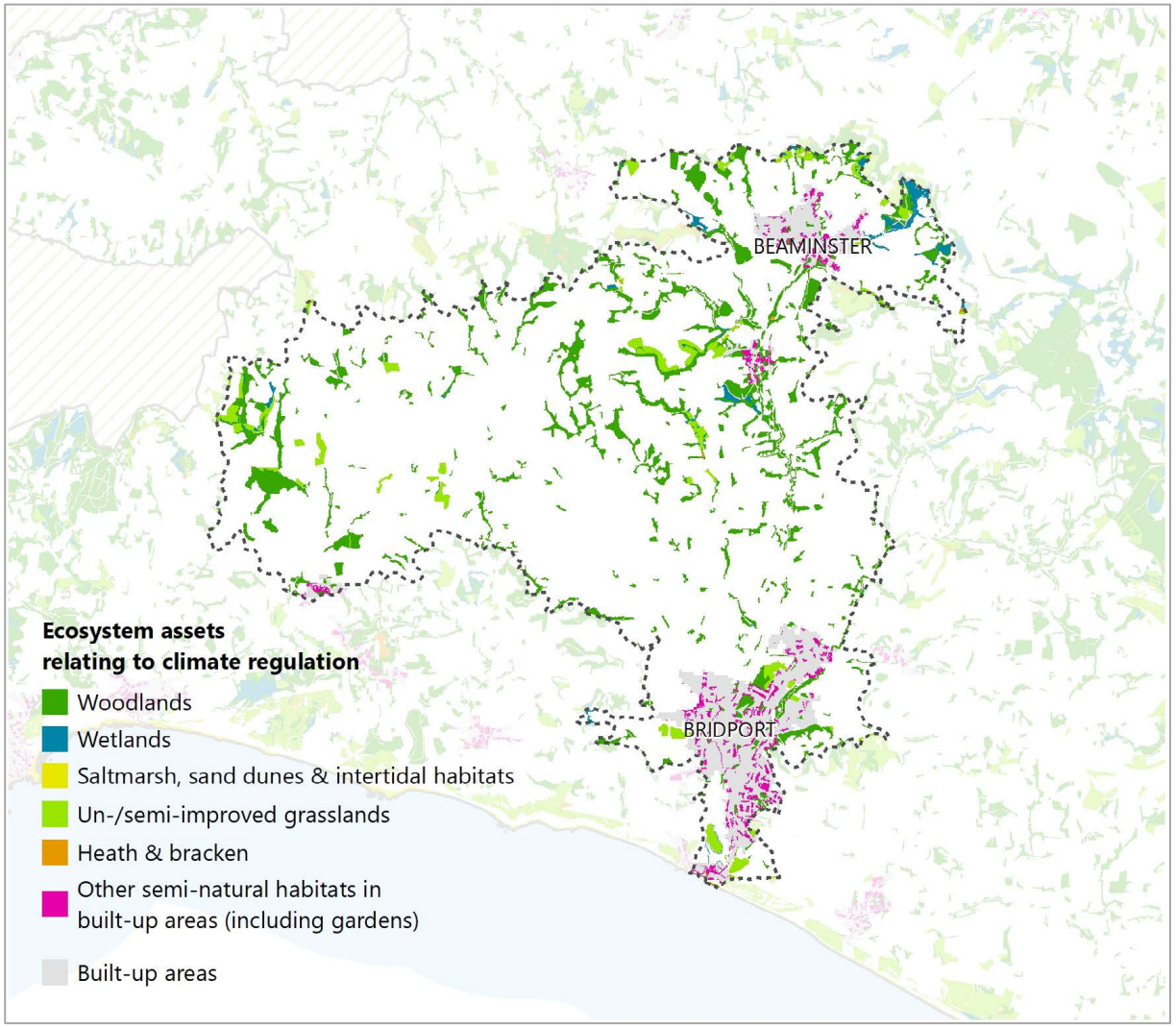
- Soil type – sequestration capacity/potential
- Land use – potential for land use change
- Agricultural land class
- Wetland and/or woodland opportunities

→ Areas which pose an opportunity for investigation/action to improve carbon storage

Climate Regulation

1. Indicators of Current Provision: Quantity & Location

The natural assets mapped on this page are habitats which are best at sequestering carbon. Where the assets are present the landscape is likely to be contributing to the provision of climate regulation, and where the assets are absent (where the map is white, or grey for urban areas) there may be a lack of natural assets which contribute to climate regulation.



Quality indicators relevant for climate regulation are:

- **Vegetation cover** – see page 29

Data sources (more detail on page 54)

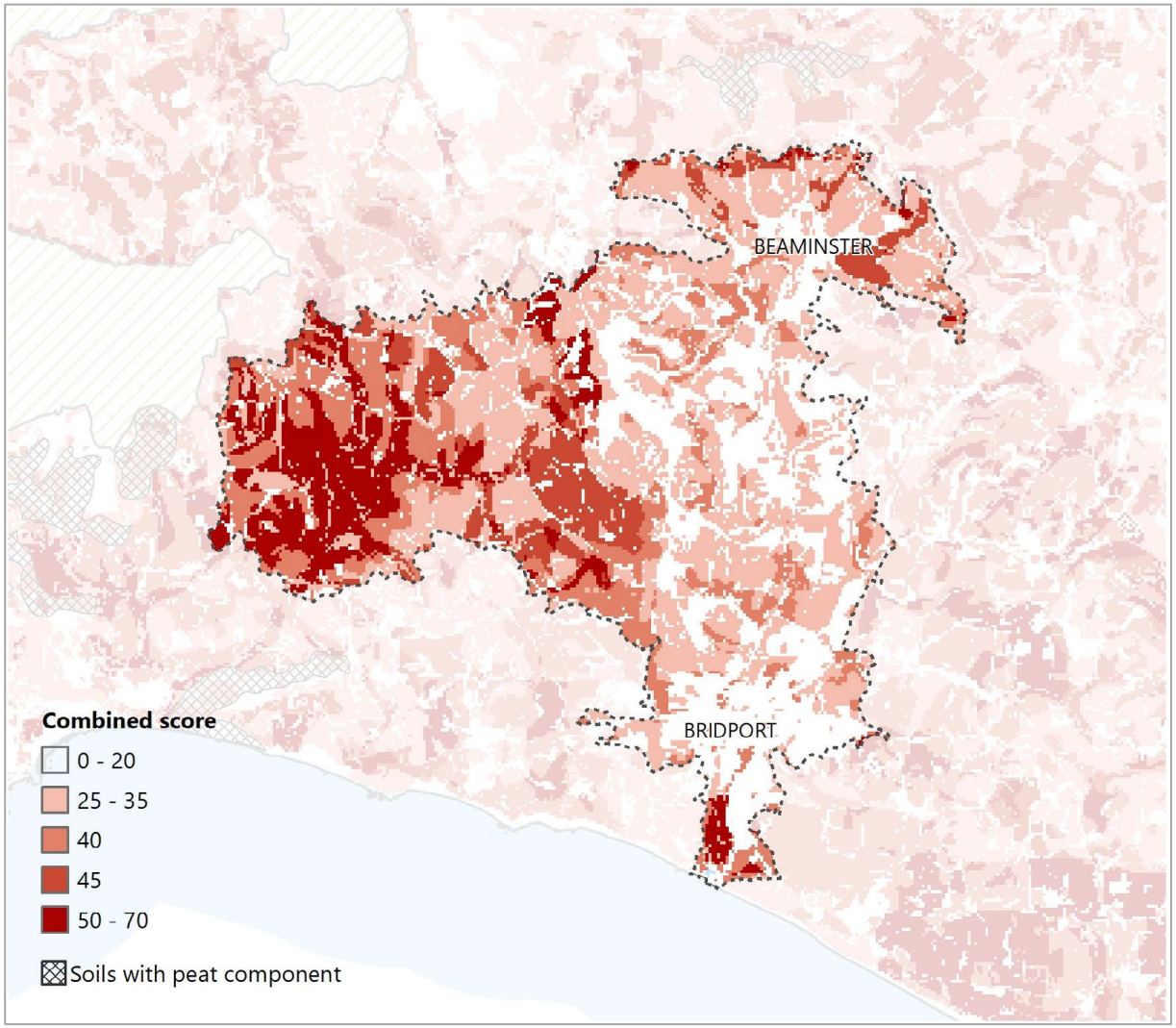
Indicator(s)	Data used	Level	Res.	Date
Semi-natural habitats **Urban habitats**	Dorset habitat map – selected land covers (see Appendix 1 for more detail)	L	●	●

Datasets used in maps: OSV, AONB, OSBL, LCA, DHM, ONSBU. See page 54 for full references.

Climate Regulation

2. Areas for Investigation & Action

Areas for further investigation with potential for action to improve carbon sequestration are shown below, with darker shades representing areas to be targeted for investigation and action. The map combines a number of identified factors which are possible to map. These are shown to the right of the map, and the full scoring system is detailed in Appendix 2.



Relevant factors & description	Dataset	Level	Res.	Date
Soil type – sequestration capacity Clay-based soils have greatest capacity to lock up organic material, whereas lighter sandy or loamy soils have lower capacity for increased sequestration. Peat soil may have limited potential for sequestration as it is at maximum capacity.	NATMAP soils	**N**	●	●
Land use Improvements in carbon sequestration can be achieved through permanent land use change along an arable > rotational cropping > temporary grassland > permanent pasture > woodland > wetland continuum.	Dorset habitat map	**L**	●	●
Agricultural Land Classification Conversion of high grade agricultural land to other uses is unlikely to be taken up by land managers and so measures to enhance sequestration should be targeted towards 'low grade' land.	Agricultural Land Classification	**N**	●	●
Woodland/Wetland Restoration As described above, woodlands and wetlands provide the best opportunity for carbon sequestration. The scores are based on the restoration potential analysis in the Thriving Plants and Wildlife section.	Woodland and Wetland Restoration Parcels (see pages 23 and 25)	**Produced as part of this report**		

Datasets used in map: OSV, AONB, OSBL, LCA, NAT, DHM, ALC, CSS, LHN, NEHN. See page 54 for full references.

Appendix 1 – Full lists of semi-natural habitats

The Dorset Habitat Map is a detailed dataset of land use and habitats across the county. In the 'Quality & Location' maps for each chapter, various subsets of the habitat map have been used and in some cases have been simplified into groups for display on the map. The lists below detail the habitat types used in each section when displaying the Dorset Habitat Map.

Clean & Plentiful water

Woodland
- Broadleaved woodland
- Coniferous plantation
- Mixed woodland

Wetlands
- Marshy grassland
- Wet heath
- Wet woodland
- Wetland

Coastal and intertidal
- Cliffs and rocky shore
- Intertidal habitat
- Saltmarsh
- Sand dune
- Shingle above high-tide

Un-/semi-improved grassland
- Semi-improved grassland
- Unimproved grassland (calcareous)
- Unimproved grassland (neutral)

Other semi-natural habitats
- Bracken
- Hedgerow
- Lowland dry heath
- Parkland/ scattered trees
- Scrub
- Tall herb and fern

Water

Wildfire Risk

Heathland
- Lowland dry heath
- Wet heath

Un-/semi-improved grassland
- Semi-improved grassland
- Unimproved grassland (calcareous)
- Unimproved grassland (neutral)
- Marshy grassland

Scrub

Thriving Plants & Wildlife

Woodland
- Broadleaved woodland
- Coniferous plantation
- Mixed woodland

Wetlands
- Marshy grassland
- Wet heath
- Wet woodland
- Wetland

Coastal and intertidal
- Cliffs and rocky shore
- Intertidal habitat
- Saltmarsh
- Sand dune
- Shingle above high-tide

Un-/semi-improved grassland
- Semi-improved grassland
- Unimproved grassland (calcareous)
- Unimproved grassland (neutral)

Other semi-natural habitats
- Bracken
- Hedgerow
- Lowland dry heath
- Parkland/ scattered trees
- Scrub
- Tall herb and fern

Water

Urban habitats

Semi-natural habitats as above within built-up areas.

Flood Protection

Woodland
- Broadleaved woodland
- Coniferous plantation
- Mixed woodland

Wetlands
- Marshy grassland
- Wet heath
- Wet woodland
- Wetland

Coastal and intertidal
- Cliffs and rocky shore
- Intertidal habitat
- Saltmarsh
- Sand dune
- Shingle above high-tide

Un-/semi-improved grassland
- Semi-improved grassland
- Unimproved grassland (calcareous)
- Unimproved grassland (neutral)

Other semi-natural habitats
- Bracken
- Hedgerow
- Lowland dry heath
- Parkland/ scattered trees
- Scrub
- Tall herb and fern

Clean air

Woodland
- Broadleaved woodland
- Coniferous plantation
- Mixed woodland

Urban habitats

Semi-natural habitats as listed under 'Thriving Plants and Wildlife' within built-up areas, plus gardens (note: gardens not included in Natural England Indicator project).

Access (cultural services)

Woodland
- Broadleaved woodland
- Coniferous plantation
- Mixed woodland

Wetlands
- Marshy grassland
- Wet heath
- Wet woodland
- Wetland

Coastal and intertidal
- Cliffs and rocky shore
- Intertidal habitat
- Saltmarsh
- Sand dune
- Shingle above high-tide

Un-/semi-improved grassland
- Semi-improved grassland
- Unimproved grassland (calcareous)
- Unimproved grassland (neutral)

Other semi-natural habitats
- Bracken
- Hedgerow
- Lowland dry heath
- Parkland/ scattered trees
- Scrub
- Tall herb and fern

Water

Gardens (note: gardens not included in Natural England Indicator project).

Climate regulation

Woodland
- Broadleaved woodland
- Coniferous plantation
- Mixed woodland

Wetlands
- Marshy grassland
- Wet heath
- Wet woodland
- Wetland

Coastal and intertidal
- Intertidal habitat
- Saltmarsh
- Sand dune

Un-/semi-improved grassland
- Semi-improved grassland
- Unimproved grassland (calcareous)
- Unimproved grassland (neutral)

Other semi-natural habitats
- Bracken
- Lowland dry heath

Urban habitats

Semi-natural habitats as listed under 'Thriving Plants and Wildlife' within built-up areas, plus gardens (note: gardens not included in Natural England Indicator project).

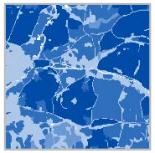
Appendix 2 - Areas for Action Scoring Systems

The 'Areas for Investigation & Action' maps in three of the sections (Clean and Plentiful Water, Wildfire Risk and Climate Regulation) have been created by scoring and combining a series of relevant factors across a grid of 'pixels'. Typically, these pixels are 50m x 50m squares. A table of the factors, their description, and the data used, is shown on the page alongside each map. This page shows the details of the scoring systems.

Clean and Plentiful Water

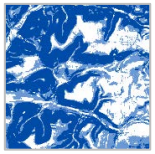
Areas of risk & scores

Land use risk



Arable = 20
Improved grassland = 15
Semi-natural/unimproved grassland = 10
Other semi-natural habitats & urban = 5

Slope

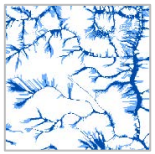


>7° = 20
3-7° = 10
0-3° = 0

Soil type

Sandy = 20
Clay with impeded drainage = 15
Other clays = 10
Loams and chalks = 5
Water and non-soil coastal features = 0

Hydrological connectivity [6]



High = 20
Med = 10
Low = 0

Proximity to watercourse

Within 20m buffer = 10
Outside = 0

Wildfire Risk

Areas of risk & scores

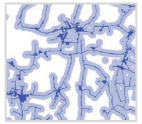
Public Rights of Way

Within 100m buffer = 10
Outside = 0

Accessible Land

Within = 10
Outside = 0

Urban land



Within 100m buffer = 10
Outside = 0

High risk habitats

Heath = 20
Grass & Scrub = 10
Other = 0

Vulnerable neighbourhoods

Within 500m of neighbourhood of average or higher vulnerability = 10
Outside = 0

Sites of wildfires 2015-2020

Within 500m buffer = 10
Outside = 0

Climate Regulation

Relevant factors and scoring

Soil type – sequestration capacity

Clays = 15-20
Loams/silts/sands = 10-15
Peat = 5

Land use

Arable = 30
Improved grassland = 20
Natural grassland = 10
Natural habitats/ urban = 0

Agricultural Land Classification

Grade 4 or 5 = 10
Grade 3 or non-agricultural = 0
Grade 1 or 2 = -10

Woodland/Wetland Restoration

High/medium potential for wood/wetland = 20
Low potential = 10
Not a restoration opportunity = 0

Data Sources

Please note: The dataset Red/Amber/Green classes are semi-subjective, and are used to give a quick indication of the characteristics of the dataset. More detail has been provided below to aid interpretation. Some datasets (e.g. soil, geology, terrain and location of features such as rivers and lakes) do not change regularly and therefore are not given a RAG status for date.

Code	Dataset	Source	Attribution Statement	Resolution		Date	
ALC	Agricultural Land Classification	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2019.	🟡	Digitised from 1:250,000 maps	🟢	Revised 2019
AONB	AONB boundaries	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020.	🟢	Full res.	🟢	Revised 2020
AQMA	Air Quality Management Areas	UKAIR	© Crown copyright and database rights licensed under Defra's Public Sector Mapping Agreement with Ordnance Survey (licence No. 100022861) and the Land and Property Services Department (Northern Ireland) MOU206.	🟢	Full res.	🟢	2020
AW	Ancient Woodland	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	🟢	Full res.	🟢	Regularly updated
BGS	BGS 625k Bedrock Geology	British Geological Survey	Reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved	🟡	1:625 000 scale	NA	
BPM	Background PM2.5	UKAIR	© Crown copyright	🟡	1km grid	🟡	2017
CAMS	Water resource availability	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved.	🟡	Based on WFD waterbody catchments	🟢	Revised 2019
CDE	WFD data (non-spatial – links to WFDL)	Environment Agency	Sourced from Catchment Data Explorer https://environment.data.gov.uk/catchment-planning/	🟡	WFD waterbody catchments	🟢	2019 WFD data
CEN	Census 2011 - General Health (non-spatial data - links to MSOA)	Office for National Statistics	Data sourced from NomisWeb	🔴	Summarised to Middle Super Output Areas to fit with health data	🔴	2011 census
CP	Country Parks	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	🟢	Full res.	🟢	Regularly updated
CROW	CRoW access land	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	🟢	Full res.	🟢	Regularly updated
CSS	Core and stepping stone habitat sites	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	🟢	High resolution digitised land use	🟡	2017
DFE	Flood extents - Dorset Council	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	🟢	Full res.	🟢	Regularly updated
DFP	Flooded properties – Dorset Council	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	🟡	Summarised to Parish level for data protection	🟢	Regularly updated
DHM	Dorset habitat map	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	🟢	High resolution digitised land use	🟡	2017
DTM5	APGB 5m Digital Terrain Model	GB Consortium via Dorset Council	© GB Consortium	🟢	5m	NA	
DTM50	Terrain50	OS Open Data	Contains OS data © Crown Copyright and database right 2016	🟡	50m	NA	
EAFE	Historic Flooding - Environment Agency	Environment Agency	© Environment Agency copyright and/or database right 2018. All rights reserved	🟢	Full res.	🟢	Regularly updated
FZ2	Flood Maps for Planning (Rivers and Sea) - Flood Zone 2	Environment Agency	© Environment Agency copyright and/or database right 2018. All rights reserved. Some features of this map are based on digital spatial data from the Centre for Ecology & Hydrology, © NERC (CEH) © Crown copyright and database rights 2018 Ordnance Survey 100024198	🟢	Full res.	🟢	Regularly updated

Data Sources

Code	Dataset	Source	Attribution Statement	Resolution		Date	
GW	WFD groundwater bodies cycle 2	Environment Agency	© Environment Agency copyright and/or database right 2016. All rights reserved. Derived in part from 1:50,000 and 1:250,000 scale digital data under permission from British Geological Survey. ©NERC. © Crown copyright and database rights 2013 Ordnance Survey 100024198.	●	Full res.	NA	Spatial data only, joined to CDE for status info.
HAR	Heritage at Risk	Historic England	Historic England 2020. Contains Ordnance Survey data © Crown copyright and database right 2020. The Historic England GIS Data contained in this material was obtained May 2020. The most publicly available up to date Historic England GIS Data can be obtained from http://www.HistoricEngland.org.uk.	●	Full res.	●	Regularly updated
LAKE	WFD lakes cycle 2	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved. Contains Ordnance Survey data © Crown copyright and database right 2013.	●	Main lakes and reservoirs	NA	Spatial data only
LCA	Landscape character assessment	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	●	Full res.	●	Updated as needed
LHN	Local habitat network buffers	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	●	Created from DHM	●	Based on 2017 data
LIST	Listed sites	Historic England	Historic England 2020. Contains Ordnance Survey data © Crown copyright and database right 2020. The Historic England GIS Data contained in this material was obtained May 2020. The most publicly available up to date Historic England GIS Data can be obtained from http://www.HistoricEngland.org.uk.	●	Full res.	●	Regularly updated
MSOA	Middle Super Output Areas	Office for National Statistics	Office for National Statistics licensed under the Open Government Licence v.3.0, Contains OS data © Crown copyright and database right	●	Mid size areas for summarising census data	NA	Spatial data only, joined to other datasets as relevant.
NAEI	NAEI Large Point Sources	NAEI	© Crown copyright. All rights reserved Defra, Licence number 100022861 {2020] and BEIS, Licence number 100037028 [2020]	●	Points showing location	●	2018
NAT	NATMAP soils	National Soil Resources Institute	Mapping derived from soils data © Cranfield University (NSRI) and for the Controller of HMSO 2020	●	1: 250,000 scale	NA	
NEHN	Natural England Habitat Networks	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	●	Created from high resolution priority habitat data	●	2020
NNR	National/ Local Nature Reserves	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	●	Full res.	●	Updated as needed
NP	National Parks boundaries	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020.	●	Full res.	●	Updated as needed
NT	National Trust Land Always Open	National Trust	© National Trust	●	Full res.	●	Regularly updated
NVZ	Nitrate Vulnerable Zones	Environment Agency	© Environment Agency copyright and/or database right. Derived in part from geological mapping data provided by the British Geological Survey © NERC. Derived in part from data provided by the National Soils Research Institute © Cranfield University. Contains Ordnance Survey data © Crown copyright and database rights 2016. Derived in part from data provided by the Department for the Environment, Farming and Rural Affairs © Crown 2016 copyright Defra. Derived in part from data provided by the Centre for Ecology and Hydrology © NERC. Derived in part from data provided by UK Water Companies.	●	Full res.	●	2017
OBS	Potential Sites of Hydropower Opportunity	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved.	●	Point location of key barriers	●	2015
ONSBU	ONS built up areas	Office for National Statistics	Office for National Statistics licensed under the Open Government Licence v.3.0 Contains OS data © Crown copyright and database right	●	Based on 50m grid	●	2017

Data Sources

Code	Dataset	Source	Attribution Statement	Resolution		Date	
OSBL	OS BoundaryLine	OS Open Data	Contains OS data © Crown Copyright and database right 2020	●	Full res.	●	Regularly updated
OSG	Open Greenspace	OS Open Data	Contains OS data © Crown Copyright and database right 2020	●	Full res.	●	Regularly updated
OSR	OS Open Rivers	OS Open Data	Contains OS data © Crown Copyright and database right 2020	●	Full res.	●	Regularly updated
OSS	OS Strategi	OS Open Data	Contains OS data © Crown Copyright and database right 2014	●	Regional level base map data	●	2014
OSV	OS Vectormap	OS Open Data	Contains OS data © Crown Copyright and database right 2020	●	Full res.	●	Regularly updated
OSWN	OSMM Water Network	OS via Dorset Council	© Crown copyright and database rights 2020	●	Full res.	●	Regularly updated
PH 1-5	Public Health data (non-spatial data – links to MSOA)	Public Health England	© Crown copyright	●	Summarised to Middle Super Output Areas.	●	Various datasets collected between 2009 and 2018
PROW	Public Rights of Way	Dorset Council	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	●	Full res.	●	Regularly updated
RAM	Ramsar Sites	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	●	Full res.	●	Updated as needed
SAC	Special Areas of Conservation	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	●	Full res.	●	Updated as needed
SFRI/ NFVI	Social Flood Risk Index/ Neighbourhood Flood Vulnerability Index	Climate Just	Contains derived data from the Office for National Statistics licensed under the Open Government Licence © Crown copyright and database right 2012; Contains Ordnance Survey data © Crown copyright and database right 2012.	●	Based on Lower Super Output Areas	●	2017
SNCI	SNCI centroid location and condition	Dorset Environmental Records Centre	© Dorset Environmental Records Centre	●	Centroid location of sites	●	Updated as needed
SPA	Special Protection Areas	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	●	Full res.	●	Updated as needed
SPR	Species records - Section 41 and vascular plants	Dorset Environmental Records Centre	© Dorset Environmental Records Centre	●	1km grid	●	Regularly updated
SSSI	SSSI Units	Natural England	© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020	●	Full res.	●	Regularly updated
TRAC	WFD transitional and coastal waters cycle 2	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved. Contains Ordnance Survey data © Crown copyright and database right 2013.	●	Full res.	NA	Spatial data only
UHP	Wildfire sites	Urban Heath Partnership	© Crown Copyright and database rights 2020 Ordnance Survey 0100060963. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.	●	Shown as points for clarity on maps	●	Regularly updated
WFDL	WFD river lines	Environment Agency	Contains Environment Agency information © Environment Agency 2017. All rights reserved. Based on digital spatial data licensed from the Centre for Ecology & Hydrology, © NERC (CEH). © Contains Ordnance Survey data © Crown copyright and database right 2013.	●	Main rivers	NA	Spatial data only, joined to CDE for status info.
WFDWC	WFD waterbody catchments cycle 2	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved.	●	Catchments of main rivers	NA	Spatial data only, joined to other datasets as relevant.
WHO	Public Health Dorset WHO Access Model	Public Health Dorset	© Public Health Dorset. Sourced from https://public.tableau.com/profile/public.health.dorset#!/vizhome/Greenspaceaccessibilitywithdeprivationaddedupdatetext_v2019_2_v2019_2/Introduction	●	Based on Lower Super Output Areas	●	2019
WWNP	Working With Natural Processes	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved.	●	Detailed mapping/ modelling	●	2017

References

Much of the data and information in this report has been sourced from the datasets listed in the previous pages. In addition, the following sources have been used for background information, methods and modelling, as indicated throughout the report:

[1] Lusardi, J., Rice, P., Waters, R.D., and Craven J. (2018). Natural Capital Indicators: for defining and measuring change in natural capital. Natural England Research Report, Number 076 http://publications.naturalengland.org.uk/publication/6742480364240896

[2] Lear, R., Wigley, S., Lord, A., Lusardi, J., and Rice, P. (2020) Natural Capital Atlases: Mapping Indicators for County and City Regions, Natural England Commissioned Report Number 318. http://publications.naturalengland.org.uk/publication/6672365834731520

[3] Wigley, S., Paling, N., Rice, P., Lord, A., and Lusardi, J. (2020) National Natural Capital Atlas, Natural England Commissioned Report Number 285. http://publications.naturalengland.org.uk/publication/4578000601612288

[4] Dorset AONB (2019) Dorset AONB Management Plan 2019-2024. https://www.dorsetaonb.org.uk/wp-content/uploads/2019/04/DAONB_Managmentplan.pdf

[5] Dorset AONB Landscape Character Assessment – can be explored using the interactive map at https://www.dorsetaonb.org.uk/resources/landscape-character-assessment/

[6] SCIMAP modelling system - SCIMAP was developed at Durham and Lancaster Universities as part of a NERC grant

[7] Glaves, D.J., Crowle, A.J.W., Bruemmer, C. & Lenaghan, S.A. 2020. The causes and prevention of wildfire on heathlands and peatlands in England. Natural England Evidence Review NEER014. Peterborough: Natural England.

[8] DEFRA (2019) Air quality: explaining air pollution – at a glance https://www.gov.uk/government/publications/air-quality-explaining-air-pollution/air-quality-explaining-air-pollution-at-a-glance

[9] UKAIR (No date) Causes of air pollution https://uk-air.defra.gov.uk/air-pollution/causes

[10] Public Health England (2014) Local action on health inequalities: Improving access to green spaces https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/355792/Briefing8_Green_spaces_health_inequalities.pdf

[11] Historic England - What is Listing? https://historicengland.org.uk/listing/what-is-designation/

[12] Historic England - Heritage at Risk https://historicengland.org.uk/advice/heritage-at-risk/