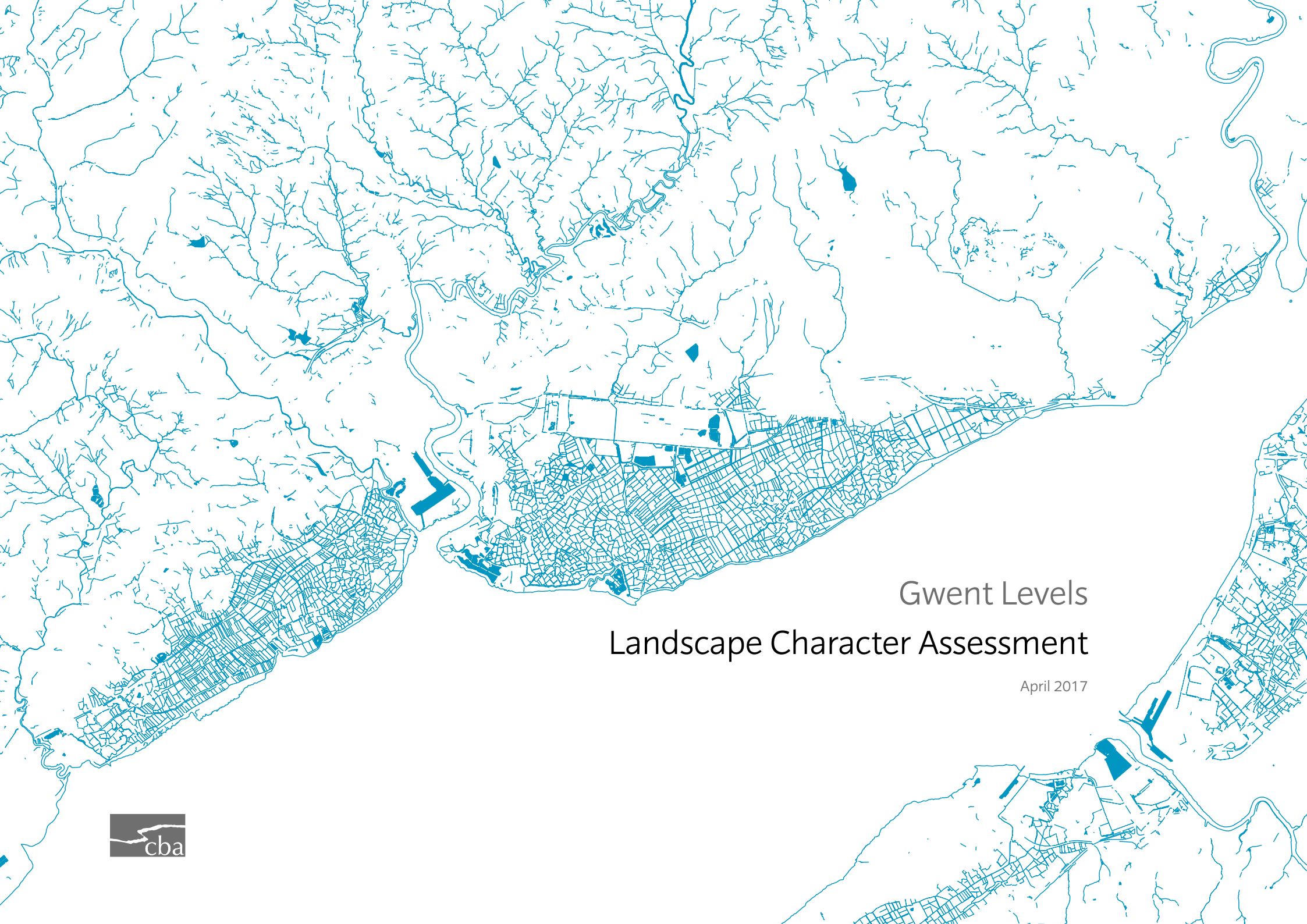

Gwent Levels

Landscape Character Assessment

April 2017

cba

CHRIS BLANDFORD ASSOCIATES
landscape | environment | heritage

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The Living Levels Landscape Partnership

Gwent Levels
Landscape Character Assessment

Approved	
	Dominic Watkins
Position	Director
Date	24th April 2017
Revision	FINAL

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FIGURES

1.0 INTRODUCTION

1.1 Context

1.1.1 This Landscape Character Assessment (LCA) of the Gwent Levels was commissioned in 2016 by Monmouthshire County Council as part of the suite of documents required to support a bid for the Heritage Lottery Fund's Landscape Partnership programme, which provides grants for schemes aiming to conserve areas of distinctive landscape character. The LCA was prepared by Chris Blandford Associates (CBA).

1.1.2 The 'Living Levels' Landscape Partnership Scheme aims to bring together local stakeholders, communities and farmers to collectively restore, enhance and protect the Gwent Levels landscape for all to enjoy. The partners are: the Royal Society for the Protection of Birds, Gwent Wildlife Trust, Natural Resources Wales, Monmouthshire County Council, Newport City Council, Cardiff City Council, Cardiff Story Museum, Sustrans, The National Trust, Bumblebee Conservation Trust and Buglife.

1.1.3 The purpose of the LCA is to help inform the positive management and planning of the Gwent Levels by assessing the distinctive character and special qualities of the area that is desirable to protect, conserve and enhance. The objectives of the Gwent Levels LCA are twofold:

- To provide a technical assessment of the Gwent Levels by developing a classification and descriptions of locally distinctive 'landscape character areas'; evaluating the key qualities, forces for change and sensitivity and capacity of the areas to accommodate change; providing guidelines for protecting, conserving and enhancing the distinctive characteristics of the areas; and identifying opportunities for improving green infrastructure assets within the landscape character areas.
- To develop a narrative that, in conjunction with other Living Levels' projects, brings the story of the Gwent Levels historic evolution and current character to life. This is intended to help improve people's understanding of the landscape and their connections to it, and encourage greater participation in conserving and enhancing the special qualities of the Gwent Levels landscape for future generations to enjoy.

1.1.4 The LCA has informed, and should be read in conjunction with, the Living Levels Green Infrastructure Strategy prepared by CBA and the Living Levels Destination Management Plan prepared by Cole & Shaw. Together, these documents will be used to inform the Living Levels Landscape Conservation Action Plan for delivery of projects funded by the HLF.

1.2 Approach

1.2.1 The approach to the study is informed by NRW's LANDMAP information system, which provides the basis of a consistent Wales-wide approach to landscape character assessment. LANDMAP is a GIS mapping resource for local authorities and others to draw on in developing landscape character assessments for informing local policy, guidance and decision-making. The LANDMAP methodology maps, describes and evaluates the following aspects of the landscape:

- Geological Landscape
- Historic Landscape
- Cultural Landscape
- Landscape Habitats
- Visual and Sensory

1.2.2 Further details are set out in the NRW LANDMAP Guidance Notes 1-6.

1.2.3 This LCA supplements and complements existing landscape character assessments within the Study Area, namely:

- Monmouthshire Landscape SPG – Volume 2: Landscape Character Assessment (2017) - this LCA should be read in conjunction with the landscape sensitivity assessment set out in the Monmouthshire study.
- Newport Special Landscape Areas (2013)
- Cardiff Review of Landscape Character Areas (2008)
- Gwent Levels Historic Landscape Characterisation (undated)

1.2.4 The LCA draws on LANDMAP data, the above assessments and other related studies (see Bibliography for details), re-interpreting and building on this information to provide a bespoke, local LCA for the Gwent Levels which fits within the hierarchy of available landscape characterisation work for each of the three local authorities within the study area. The characterisation process has been undertaken to a LANDMAP 'level 4 assessment' in terms of detail.

1.2.5 The LCA was informed by feedback from local stakeholder workshops held in 2016, and consultation with the projects' partners.

1.2.6 The LCA Methodology is based on the following best practice guidelines:

- An Approach to Landscape Character Assessment (Natural England, 2014)
- Landscape Character Assessment Guidance for England & Scotland and Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity (Countryside Agency & Scottish Natural Heritage, 2002)

1.3 Study Area

1.3.1 In accordance with the HLF's Landscape Partnerships Application Guidance (2013), the Living Levels Landscape Partnership Area has been defined to focus on those areas associated with the Gwent Levels that have 'a distinctive landscape character, recognised and valued by local people' in terms of 'the built and natural heritage, management practices and the range of cultural heritage associated with the area'. The HLF's Guidance also advises that the scheme boundary area should normally not exceed 200km2, unless there is clear justification for doing so.

1.3.2 As shown on **Figure 1.1,** the Living Levels Landscape Partnership Area, which covers 225km2, generally reflects the Gwent Levels National Landscape Character Area boundary (c.195km2) - refined where appropriate. It falls within three different local authority areas: Monmouthshire County Council; Newport City Council; and Cardiff City Council.

1.3.3 The boundary of the Living Levels Landscape Partnership Area has been defined with reference to the topography, geology and soils of the Gwent Levels, which in turn has influenced the distinctive historic patterns of settlement, field enclosure and drainage systems associated with successive periods of agricultural land use.

1.3.4 The boundary also includes the inter-tidal foreshore exposed at low tide. The current foreshore was once land before sea level rises, and it forms part of the same continuum with the reclaimed Levels.

1.3.5 The historic Gwent Levels (also known as the Monmouthshire Moors) related to a once more extensive tract of drained agricultural land under the jurisdiction of the Commissioners of Sewers for Monmouthshire from the early 17th Century. This was effectively land below 8m AOD, which is approximately the interface between the 'back-fen' edge, where the alluvial Levels are generally at their lowest, and the solid geology and elevated rolling landscapes to the north.

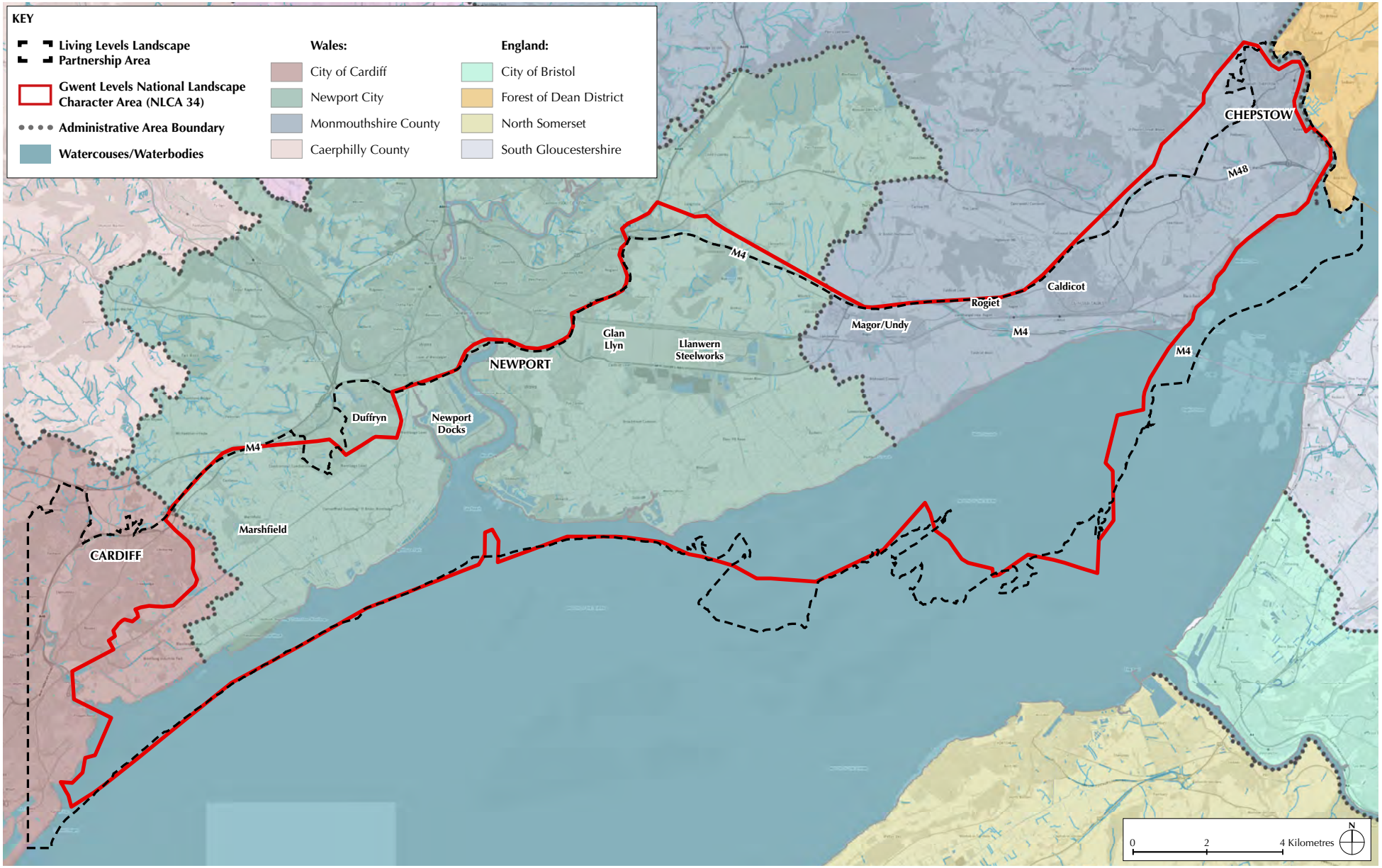
1.3.6 Over the centuries, parts of the historic Gwent Levels around Newport have been lost to industrial development associated with the port and steelworks. In addition, there has been considerable encroachment of urban residential development onto the Levels as Cardiff has expanded eastwards, and also around the edges of Chepstow and the Severnside settlements in Monmouthshire to a lesser degree.

1.3.7 The currently undeveloped parts of the Gwent Levels comprise an extensive flat, low-lying area of largely agricultural land located on the north-side of the Severn Estuary in south-east Wales. The Levels extend from Cardiff and the River Rhymney in the west to Chepstow on the River Wye in Monmouthshire to the east.

1.3.8 The Gwent Levels comprise three discrete areas of reclaimed estuarine alluvium that collectively form a coastal plain up to 6km wide (see **Figure 2.3**). The two most extensive areas are Wentlooge Level (c.27km2), which extends from Cardiff and the River Rhymney to the mouth of the River Usk south of Newport, and Caldicot Level (c.47km2), which extends between the River Usk and the bedrock promontory at Sudbrook in Monmouthshire. A third smaller area of alluvium is found in Mathern Level (c.5km2) between Sudbrook and the River Wye in Monmouthshire.

1.3.9 Together, these three areas (and their coastal inter-tidal foreshores) comprise the Gwent Levels Historic Landscape of Outstanding Historic Interest (c.107km2), which is defined by the Register of Landscapes, Parks and Gardens of Outstanding Historic Interest in Wales (see **Figure 2.5**). The vast majority of the Gwent Levels (c.79km2) are also designated as Sites of Special Scientific Interest being of national nature conservation importance for the significant concentrations of rare and protected wetland species supported by the drainage ditches (see **Figure 2.12**).

Figure 1.1 Study Area



1.3.10 Settlement within the undeveloped parts of the Gwent Levels is limited to small villages, isolated farmsteads and cottages dispersed throughout the landscape. The villages are concentrated on the higher land near the coast surrounded by arable fields and meadows, or in the 'back-fen' edge transition between the lower-lying Levels and the elevated rolling landscapes to the north.

1.3.11 The study area includes the town of Chepstow and the Severnside settlements in Monmouthshire (Caldicot, Rogiet and Magor/Undy); the southern and eastern edge of the City of Newport (including the neighbourhood of Dyffryn, the Docks, the Llanwern Steelworks and the adjacent Glan Llyn major development site); and the eastern edge of the City of Cardiff (including Marshfield). The historic relationship between the Gwent Levels and these settlements has been significantly disrupted by modern railways, motorways and urbanisation. Despite the proximity of these major conurbations and large towns, today there are increasingly limited visual connections and cultural associations between these communities and the Levels, which help create a perception of the Gwent Levels as a somewhat 'hidden' landscape. Nonetheless, existing and new communities on the Gwent Levels remain connected to the area's landscape history through their shared vulnerability to flooding and inundation if drainage systems are not maintained.

1.3.12 The story of the Gwent Levels is also inextricably linked to the vast tidal range of the Severn Estuary. The saltmarsh beyond the sea wall has traditionally provided summer grazing, and the intertidal mudflats and open water habitats are designated as being of international, European and national nature conservation importance for wildfowl and wading birds. The study area therefore includes the inter-tidal zone of saltmarshes, mudflats and sands that are revealed at low tide along the northern coastline of the Severn Estuary within Wales.

1.4 An Outstanding and Unique Historic Landscape

1.4.1 In 1998, the Gwent Levels was included on the Register of Landscapes, Parks and Gardens of Outstanding Historic Interest in Wales as a Historic Landscape of Outstanding Historic Interest. The boundary is shown on **Figure 2.5**. A summary of the justification for inclusion of the Gwent Levels on the Register is set out below.

1.4.2 The Register describes the Levels as a landscape of extraordinarily diverse environmental and archaeological potential. Although they are an important wetland resource in their own right, archaeologically the area contains a variety of landscapes of different dates, and nowhere else is it possible to make the period distinctions so easily. People's past activities in the area have been governed by the vast tidal range within the Severn Estuary, which has seen major and minor fluctuations in the heights and range of tides since the last glaciation, caused by variations in both the land and sea level. The Levels reflect people's evolving and often precarious relationship with these circumstances over the last ten thousand years.

1.4.3 Having been reclaimed from the sea at various times during the historic period, the present land surface is a supreme example of a 'hand-crafted' landscape, artificially created and entirely the work of humans, preserving clear evidence of distinctive patterns of settlement, enclosure and drainage systems. However, because of recurrent phases of inundation and alluviation, there is also a proven, and quite possibly vast, potential for extensive, buried, waterlogged, archaeological and palaeoenvironmental deposits belonging to the earlier landscapes, which extend beyond the seawalls and banks into the intertidal mudflats. The Levels are therefore a uniquely rich archaeological and historical resource in Wales, and certainly of international significance.

1.4.4 The greatest impact of people on the wetland landscape has been their determination and success in reclaiming the Levels, which has been on-going at least since the Roman period. The initial reclamation of different parts of the Levels often incorporated the natural drainage channels which were complemented by artificial ditches called reens. Some natural channels were unused and can show as palaeochannels on aerial photographs.

1.4.5 The present landscape depends for its survival upon a number of integrated features. These include:

- **Seawalls** – forming continuous barriers between the major tidal rivers. The present line may date from the 16th century but they have constantly been improved and strengthened. Some abandoned sea banks survive inland.

- **Major rivers** (known in the past as pills) – natural watercourses canalised across the Levels to stop them flooding the farmland. They discharge through the seawalls by tidal flaps or gouts into tidal channels now called pills.

- **Reens** – large artificial ditches which need regular maintenance to ensure the free flow of water. Their height can be controlled by weirs or stanks. Reen water is discharged through the gouts.

- **Field ditches** – these surround every field and provide distinctive patterns in different parts of the Levels. These ditches are maintained on longer cycles than the reens and are the responsibility of the landowners, and drain into the reens.

- **Grips** – rectangular patterns of shallow ditches on the field surface to speed the drainage of rain water. They discharge into the field ditches.

- **Transport network** – within the Levels is a transport system of linear commons, roads, causeways and bridges which originally allowed for the movement of livestock but now provides the network of roads, bridleways and footpaths.

1.4.6 In relation to the buried, archaeological landscape, Mesolithic remains have been discovered at Goldcliff, stratified in estuarine clay underlying a sequence of peat deposits. Additionally, late Mesolithic human footprints, impressed into the lower Wentlooge Formation have been found at Uskmouth. Again they were preserved in estuarine clay beneath a deposit of clay. It is reasonable to suppose that other important evidence of Mesolithic activity will be found preserved further inland, and perhaps most particularly at the interface between the Levels and solid geology to the north.

1.4.7 Bronze Age activity has been recorded at various sites on desiccated raised peat beds, such as at Chapel Tump. More recently, outside but near the area, at Caldicot Castle there is detailed evidence of palaeochannels, pile structures, a boat strake and a considerable amount of cultural material. Iron Age evidence has been discovered in the intertidal zone at Goldcliff with rectangular timber buildings, trackways and fishtraps on a shelf of fen peat. Also outside, but near the area, at Barland's Farm, Wilcrick, Roman stone and timber structures and the remains of a late 3rd Century Romano-British boat have been found, alongside a buried tidal creek, emphasizing the remarkable state of preservation of archaeological material in and around the Levels.

1.4.8 The Middle Ages are represented by a large number of Anglo-Norman sites including castles, moated sites, churches, mills, manor houses and court houses. There is evidence of continuity in the forms of land use between the medieval and post-medieval periods. The area saw progressive enclosure of undrained land, but as late as 1830 considerable areas remained as commons, until a succession of Enclosure Acts were passed in the 1850s. Whilst much of the basic network of reens had been established before this period, it continued to be developed and modified, particularly as the land became enclosed.

1.4.9 Examples of notable prehistoric features to the north of Wentlooge Level outside, but near the Registered Historic Landscape, include the early Bronze Age long barrow tomb near Cleppa Park visible from the M4; Gaer Fort, also known as Tredegar Fort and, locally, as The Gollars, on the western side of the City of Newport, an old hill fort site believed to be from the Iron Age; and an Iron Age Druid stone in the grounds of a private property in Michaelstone.

1.4.10 Over recent years, a range of spectacular archaeological sites have been excavated. The present landscape represents the latest archaeological period and provides the diverse ecological niches on which the nature conservation interests depend.

1.5 Structure of the Report

1.5.1 The LCA comprises the following chapters:

- **Overview of the Gwent Levels landscape** (Chapter 2.0) – this chapter provides an overview of the physical and human influences on the formation of the Gwent Levels, including its geology; the 10,000 years of history of human settlement and land use from pre-history to the present day (including the cultural forces for change on the character of the Gwent Levels); its biodiversity value; and the visual and sensory qualities of the landscape.

- **Character of the Gwent Levels landscape** (Chapter 3.0) – this chapter explains the approach to characterisation of the Gwent Levels landscape and provides descriptions of each landscape character area, identifying key qualities that are particularly sensitive to change and providing guidance for directing landscape change in ways that conserve and enhance the distinctive characteristics of the area. It also identifies opportunities for improving green infrastructure assets within each character area.

- **Special qualities of the Gwent Levels landscape** (Chapter 4.0) – the final chapter identifies the key themes that represent the special qualities of the Gwent Levels and make a significant contribution to the distinctive sense of place or essential 'spirit of the Levels', which is desirable to conserve and enhance through positive management of the landscape.

1.6 Acknowledgements

1.6.1 We would like to acknowledge the support of all the stakeholders who attended workshops, provided information and commented on drafts of this report. Thank you in particular to Rick Turner for his help in providing historic maps and contributing his research on the 'Levels Lingo' included in this report; and to the GIS managers at the RSPB, Natural Resources Wales, Glamorgan-Gwent Archaeological Trust, Monmouthshire County Council, Newport City Council and Cardiff City Council for supplying the GIS data for the project.

1.6.2 CBA would also particularly like to thank the Working Group for their generous help and support throughout this project:

- Colette Bosley – Principal Landscape & Countryside Officer at Monmouthshire County Council
- Matthew Lewis – Green Infrastructure & Countryside Manager at Monmouthshire County Council
- Alison Boyes – Living Levels Programme Development Manager

1.6.3 The CBA Team comprised:

- Dominic Watkins – Project Director
- Ruth Childs – Project Manager
- Bill Wadsworth – Biodiversity/Green Infrastructure Advisor
- Harriet Stanford – GIS Mapping/Researcher
- Georgia Mackie – Researcher
- Stephen Rippon – Professor of Landscape Archaeology at Exeter University

2.0 OVERVIEW OF THE GWENT LEVELS LANDSCAPE

2.1 General

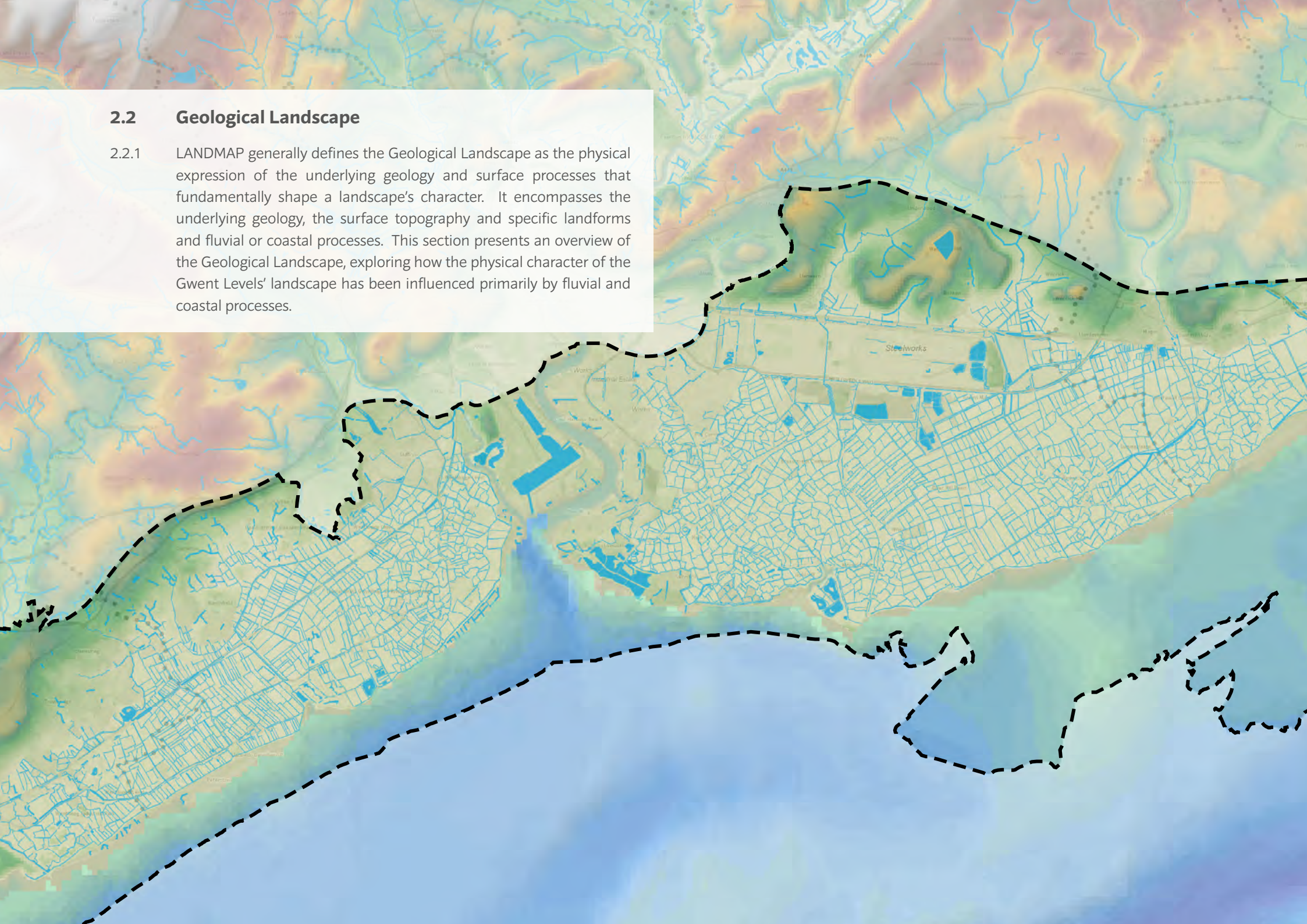
2.1.1 This chapter provides an overview of the physical and human influences on the formation of the Gwent Levels, including its geology; the 10,000 years of history of human settlement and land use from pre-history to the present day (including the cultural forces for change on the character of the Gwent Levels); its biodiversity value; and the visual and sensory qualities of the landscape. This overview is presented under the following LANDMAP aspect areas:

- Geological Landscape - **Section 2.2.**
- Historic Landscape - **Section 2.3**.
- Cultural Landscape - **Section 2.4**.
- Landscape Habitats - **Section 2.5**.
- Visual and Sensory - **Section 2.6**.

2.1.2 Throughout this chapter there are 'Levels Lingo' boxes which highlight the historic origins and meanings of selected natural and human features of the landscape. These help to bring the story of the Gwent Levels landscape to life, explaining how and why familiar patterns and features have developed.

2.2 Geological Landscape

2.2.1 LANDMAP generally defines the Geological Landscape as the physical expression of the underlying geology and surface processes that fundamentally shape a landscape's character. It encompasses the underlying geology, the surface topography and specific landforms and fluvial or coastal processes. This section presents an overview of the Geological Landscape, exploring how the physical character of the Gwent Levels' landscape has been influenced primarily by fluvial and coastal processes.



2.2.2 The Gwent Levels are located on the north-side of the Severn Estuary in south-east Wales. The area lies just beyond the southern extent of a number of ice-sheets that covered northern Britain during the period of glacial maxima during the last 500,000 years. The valley of the River Severn was recut by glacial meltwater each time the ice-sheets retreated.

2.2.3 The Gwent Levels is a distinctive topographic zone comprising of a low-lying, flat and expansive coastal plain up to 6km wide that extends up to the Severn Estuary. Its elevation is generally below 10m AOD and typically of between 5 - 6m AOD (see **Figure 2.1**). Before they were reclaimed and separated from the Severn Estuary by a sea wall during the Roman period, the Levels would have been a changing patchwork of saltmarsh, reed-swamp and peat bogs.

2.2.4 The coastal plain comprises three discrete areas: the Wentlooge Level, which extends from the River Rhymney to the mouth of the River Ebbw and Usk; the Caldicot Level, which extends between the River Usk and the bedrock promontory at Sudbrook; and a third smaller area known as the Mathern Level between Sudbrook and the River Wye.

2.2.5 The northern edge of the Gwent Levels is marked by the boundary between the slightly higher ground in the north, underlain by sedimentary rocks mainly of Lower Old Red Sandstone from the Devonian Period, and the lower, flatter land on reclaimed estuarine alluvium to the south (see **Figures 2.2** and **2.3**). The estuarine alluvium is mainly a blue-grey, silty mud up to 13 metres thick that gives rise to heavy textured, poorly drained clayey soils.

2.2.6 Once found across the Levels at different times back in prehistory, such as large peat exposures on the foreshore for example, the only surviving peat bog on the Levels is found on Caldicot Level south of Magor. There are also some localised areas of peaty soils found across the back fen. These most commonly occur as a layer of peat covered by a clayey topsoil, but where the soft black peat extends to the surface these areas are particularly wet (see **Figure 2.4**).

2.2.7 The Severn Estuary is fed by the major rivers of the Severn, Wye, Usk and Avon (see **Figure 2.1**). The estuary expands in width from the mouth of the River Severn as it flows westwards to meet the Bristol Channel, creating a classic expansive funnel shape. The funnelling effect of the South Wales coastline and the North Somerset coast of England has a profound effect on the physical nature of the Estuary. The immense tidal range of the Severn Estuary and its coastal geometry combine to build up the largest tidal bore in the UK further up the estuary. It boasts the second highest tidal range in the world, between 12 and 14m, which is second only to the Bay of Fundy in Canada.

2.2.8 The Severn Estuary has seen major and minor fluctuations in the heights and range of tides since the last glaciation caused by variations in both the land and sea level. During the last 7000 years, there have been huge changes in sea level with fresh water habitats on the Gwent Levels inundated by the sea.

2.2.9 The Severn Estuary is backed by a low, flat depositional coastline of soft Triassic and Jurassic rocks exposed along the shore of the Estuary, creating a wide rocky inter-tidal area including expansive tidal flats, comprising of sand, mud and shingle with occasional rocky outcrops exposed at low tide (see **Figures 2.2** and **2.3**). The rocks are visible in the cliffs and prominent coastal headlands with wave-cut platforms at their base, such as at Black Rock near Sudbrook. Mud, sand and gravel sediments deposited in the Holocene period have produced a varied sea bed of flats and bars, with associated shallow waters and numerous shoals. The strong tidal streams, combined with the gradient of the seabed and thick mud, sand and gravel sediments, produce waters of high turbidity with an opaque brown coloration and constantly shifting sediments and water depths.

Figure 2.1 Topography and Hydrology

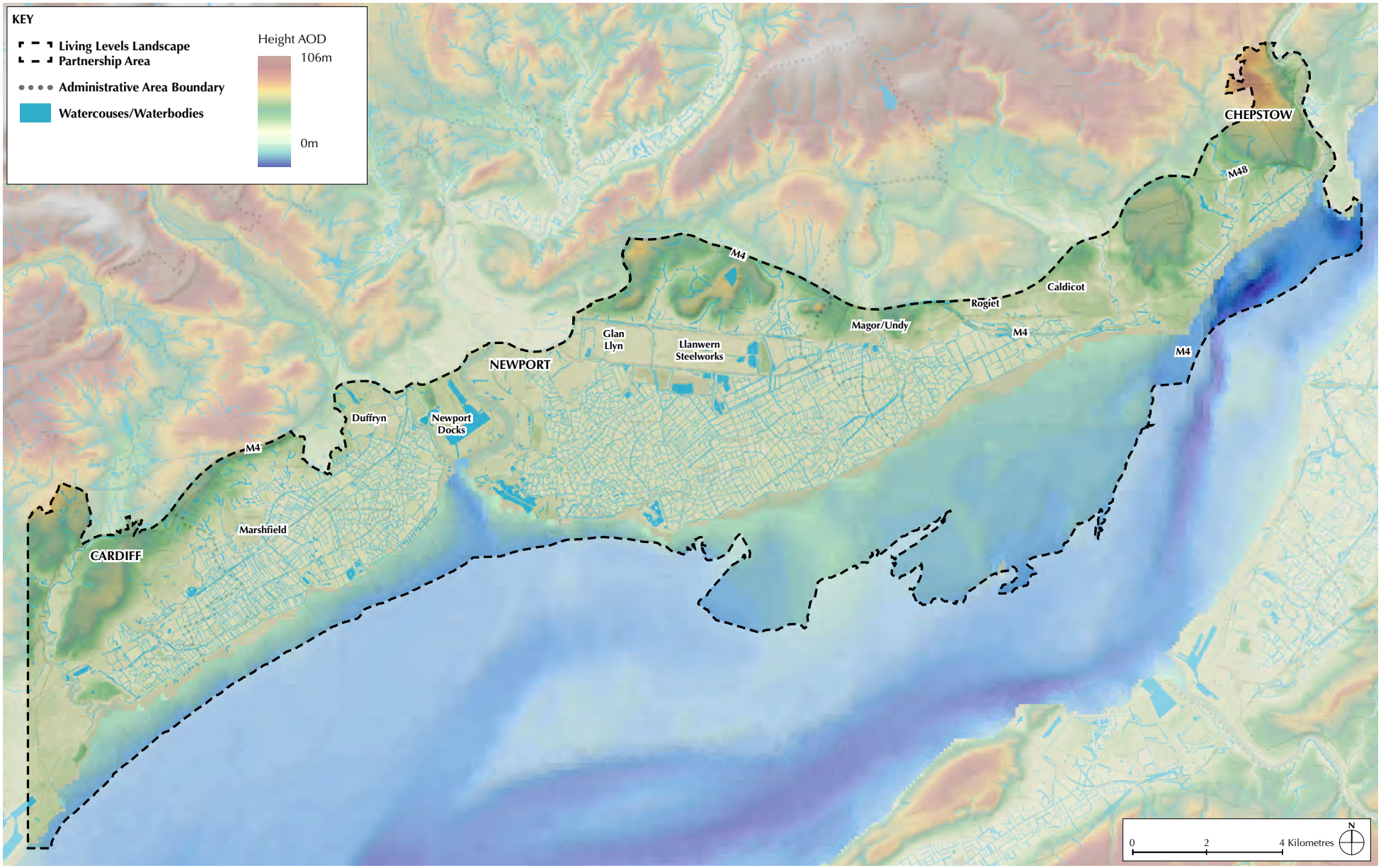
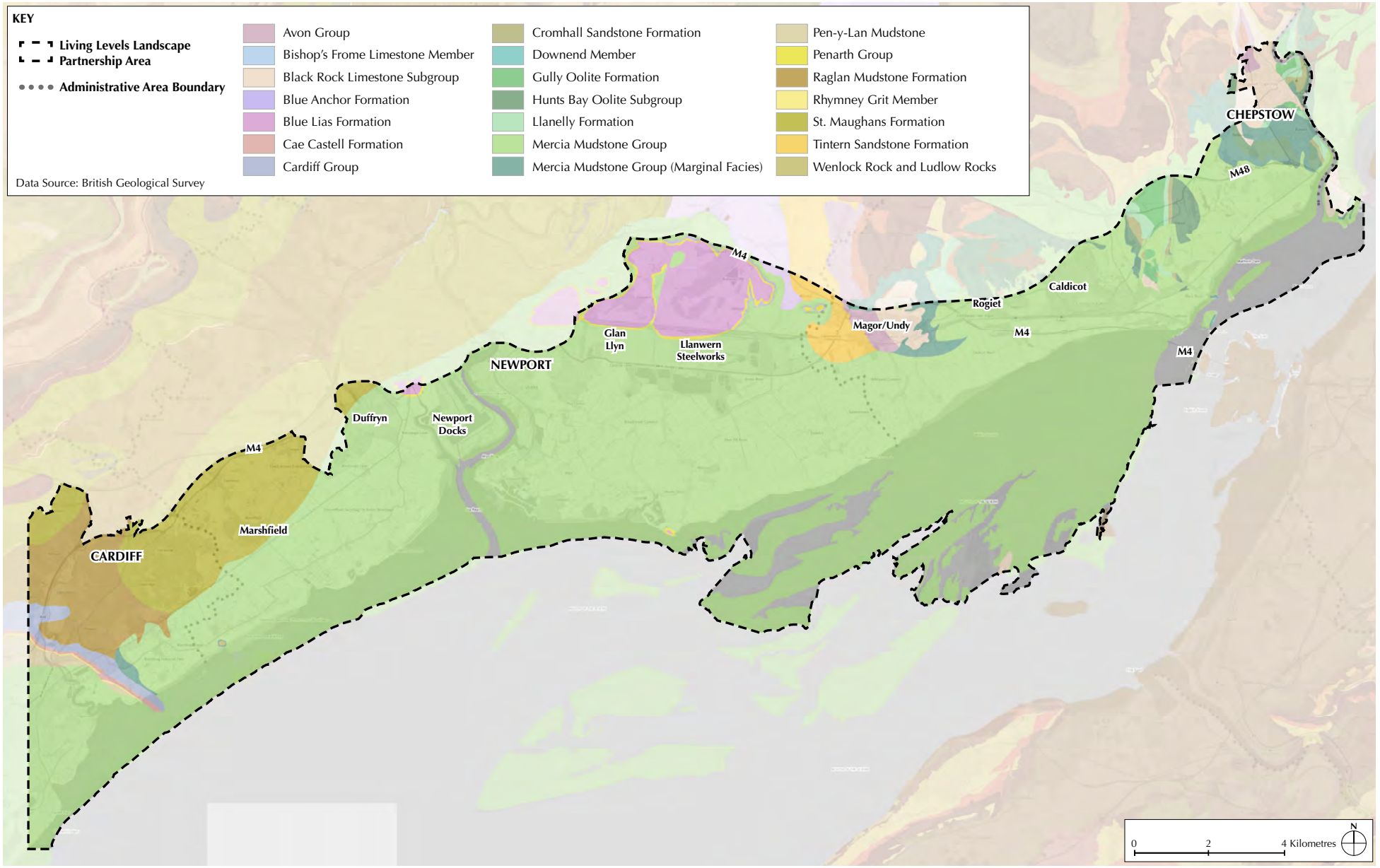


Figure 2.2 Solid Geology



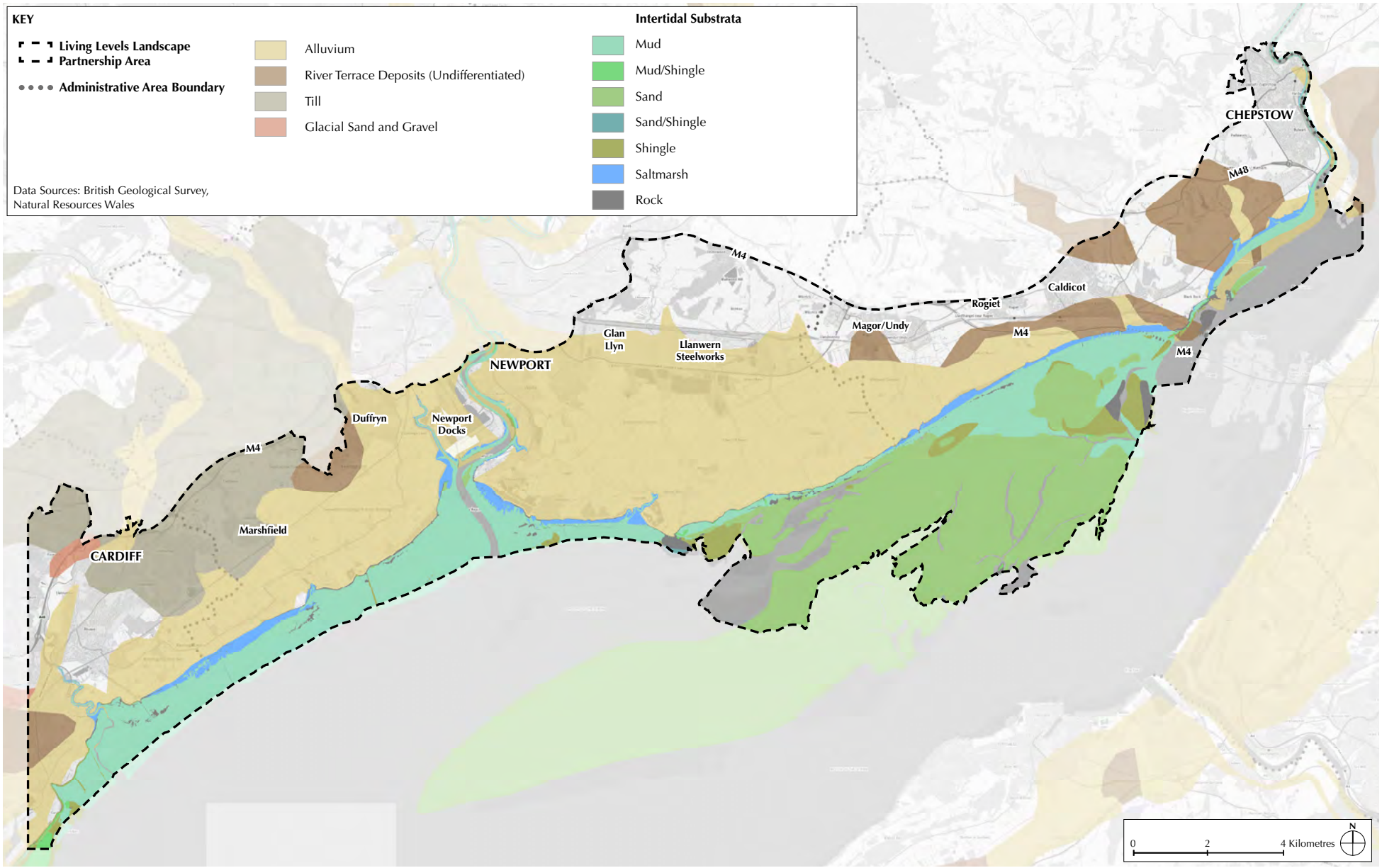
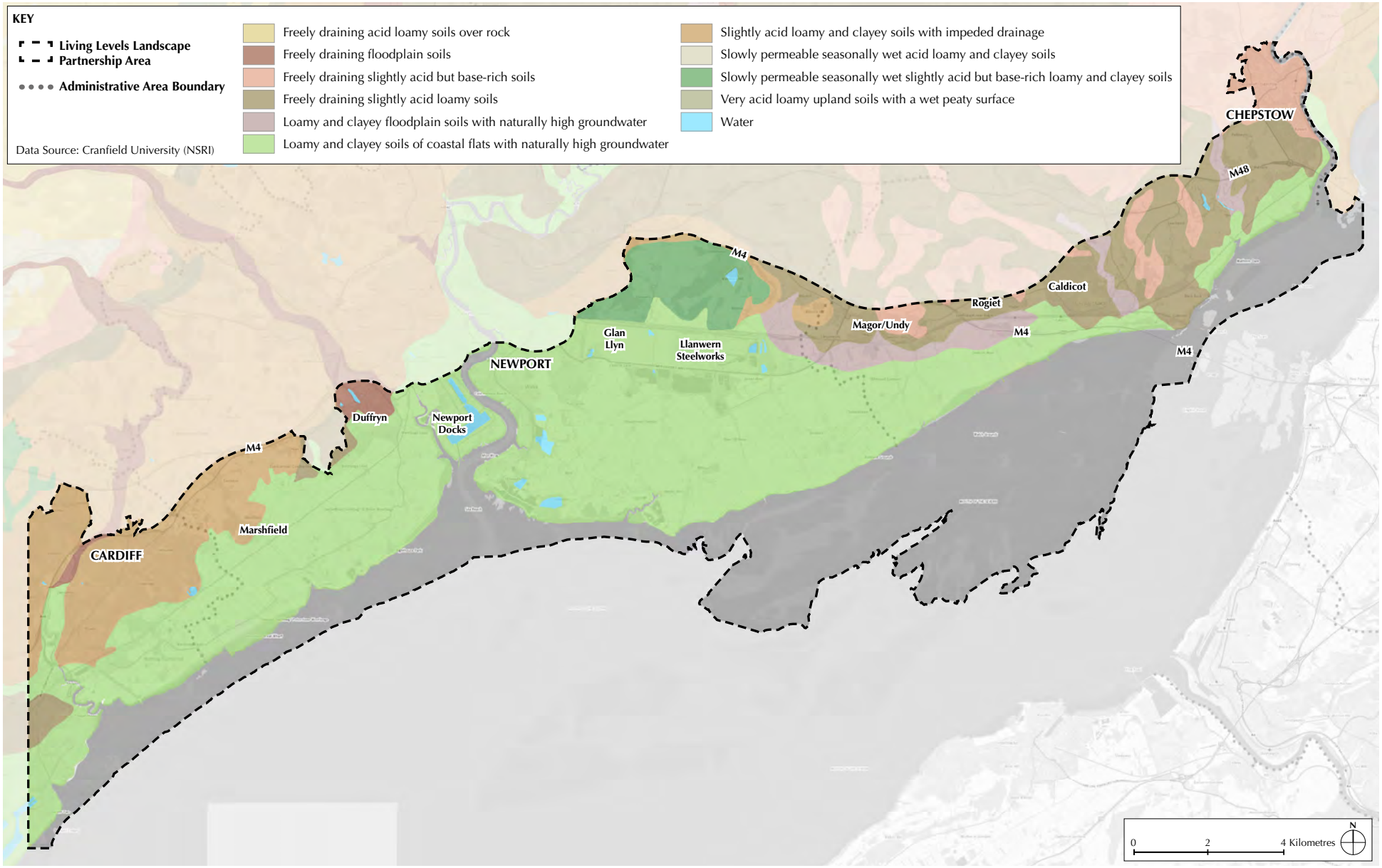


Figure 2.4 Soils



2.3 Historic Landscape

2.3.1 LANDMAP generally defines the Historic Landscape as historic land uses, patterns and features that are prominent and contribute to the overall historic character of the contemporary landscape. This section presents an overview of how the Gwent Levels' Historic Landscape has developed, identifying the historic land uses, patterns and features that resulted from the activities of people who used and shaped the land to serve their needs in the past.

2.3.2 The historic development of the Gwent Levels landscape is described below based on information from the Cultural Heritage Desk Based Assessment undertaken by Wessex Archaeology for the M4 Corridor around Newport Environmental Statement (Welsh Government, March 2016).

Prehistoric

2.3.3 Although there is some evidence for human settlement in Wales as early as 225,000 BP, this seems to have ceased by about 175,000 BP with no activity recorded until at least 60,000 BP.

2.3.4 There is a general paucity of evidence for activity in the ***Lower Palaeolithic period*** in Wales, therefore the recovery of a small quantity of material of this date from the Gwent Levels should be regarded as potentially significant (Aldhouse-Green, 2004). Some Lower Palaeolithic material was also recovered during the archaeological investigations associated with the construction of the Second Severn Crossing.

2.3.5 The ***Mesolithic period*** is one generally seen as being characterised by the presence of hunter-gathers groups traversing the landscape with seasonal exploitation of resources, although some settlements may well have been more permanent. The rising sea-level following the last glacial maxima would have resulted in the Gwent Levels being established as an area of tidal mudflats and saltmarshes, with reed swamps along the fen-edge (Rippon, 1996). During this time a considerable amount of material was deposited across what is now the Gwent Levels through processes of alluviation and peat formation. The deposition rate was not constant and there would have been periods of erosion but the overall environment was a depositional one. The deposits of this period are collectively referred to as the Lower Wentlooge Formation.

2.3.6 The wetlands would have provided opportunities for fishing, fowling and hunting as well as the collection of edible plants. These activities could have taken place from temporary encampments on drier land within the Levels but equally so from the higher land just to the north, which was also quite heavily wooded during the Mesolithic period.

2.3.7 There are few sites of Mesolithic date in Gwent that have been subject to detailed archaeological examination, but several that have been investigated are within the Levels or on the adjacent dry land. At Uskmouth, footprints of Mesolithic women, men and children, animals such as aurochs (wild cattle), deer and wolves, and also many bird species, have been found in laminated silts that were overlain by peat deposits radiocarbon dated to 6250 +/- 80 BP, whilst similar examples found in the intertidal zone at Magor Pill are slightly later at 5720 +/- 80 BP (Aldhouse-Green et al., 1992). Excavations at Goldcliff identified a Late Mesolithic site which seems to have occupied a small wooded island surrounded by saltmarsh (Bell et al., 2000; 2001, 2002; 2003, 2007a). Several hundred worked flints were recovered from stratified contexts along with a substantial assemblage of animal bone, some of which display evidence for processing.

2.3.8 At the end of the Mesolithic (c.4000 BC), the rise in sea level began to slow down although mean sea level was still approximately 8 m below the present level (Allen, 1990). A series of peat deposits formed at this time as land plants colonised the mudflats and tidal saltmarshes – these are collectively known as the Middle Wentlooge formation (Rippon, 1996). The initial vegetation would have been wet alder woodland with subsequent open reed swamps.

2.3.9 There is limited evidence for activity during the ***Neolithic period*** on the Gwent Levels and the surrounding higher ground. This may indicate that activity here may have been very limited during that period. However, for the wetland areas it could also mean that the evidence of Neolithic events remains buried beneath later material. Some material of early Neolithic date has been found at Llandevenny.

2.3.10 A skull of possible Neolithic date was recovered from Alexandra Docks in Newport, whilst other human remains also of potential Neolithic date were found in the early 20th century at Ifton Quarry just to the east of the area (Schulting, 2009). A few pieces of worked flint have been recovered from alder carr peat dated to the Neolithic at Vurlong Reen (Parkhouse and Lawler, 1990) and further material of similar type was recovered from the fill of a palaeochannel at Caldicot (Nayling and Caseldine, 1997). The full corpus of Neolithic finds in the wetlands on either side of the Severn Estuary has been summarised by Bell (2007b).

2.3.11 In contrast to the situation for the Neolithic, a considerable amount of information has been collated over recent years with regard to activity in the Gwent Levels during the ***Bronze Age (c. 2,200 - 700 BC)***. Much of this has been the result of programmes of investigation focused on the intertidal zone, where structures and associated material of Bronze Age date are exposed at low tide in certain locations. This work has demonstrated possible seasonal activity within and adjacent to palaeochannels at Peterstone along with more extensive activity (including settlement) at Rumney Great Wharf. The peats exposed in the intertidal zone have preserved the bases of wooden posts and stakes allowing for the reconstruction of structures. In places the remains of whole trees are also preserved in such peats and are often referred to as 'submerged forests'.

2.3.12 The current state of knowledge has been recently summarised by Bell (2013). In addition to settlement evidence there are also fragments of boats of Bronze Age date found at Caldicot (Parry and McGrail, 1991; 1994) and at Goldcliff (Bell, 1992).

2.3.13 On the dry land adjacent to the fen-edge, evidence of Bronze Age activity includes finds of metalwork (mostly axes and spearheads), also scatters of worked flint and monuments such as standing stones and burial mounds (round barrows). It is clear that activity during the Bronze Age was extensive across the whole of the area, including the Levels. Some of the recorded Bronze Age activity within the Gwent Levels continued on into the early part of the ***Iron Age (c. 700 BC - AD 43)***, including settlement in what is now the intertidal zone west of Goldcliff Point and also activity at Magor Pill (Allen and Rippon, 1997) and at Greenmoor Arch (Locock, 2000). However, this period is more generally characterised by a substantial marine transgression in which much of the Levels were reflooded and alluvial clays known as the Upper Wentlooge Formation were deposited. The landscape would have returned to one dominated by tidal mudflats and saltmarshes, although some areas of reed swamp were present and peats continued to form in some locations.

2.3.14 On the higher dry land to the north, evidence of Iron Age activity is dominated by the larger hillforts such as those at Wilcrick Hill and Tredegar. Smaller settlements, both enclosed and unenclosed, are likely to have been present within the land between the hillforts.

Roman

2.3.15 The initial efforts to drain parts of the Levels were made during the ***Roman period (AD 43 - 410)***. The full extent of this drainage remains unknown and most of the reclaimed land was subsequently flooded. However, some of the major drainage elements and axial alignments within the present landscape could have been first established during this time (Allen and Fulford, 1986; Allen et al., 1992; Fulford et al., 1994; Rippon, 1996, but see also Parkhouse and Parry, 1990 and Marvell, 2004). Any sea wall constructed at this time is likely to have been seaward of the present one and no evidence has survived for a Roman sea wall.

2.3.16 However, there is extensive evidence for Roman activity (including settlement) across the Levels and extending within the intertidal zone beyond the present sea wall (cf. Allen, 1998; 2000; Neumann, 2000). The establishment of such settlements with associated land use may

have required the construction of banks as well as ditches in order to control water flow.

2.3.17 Investigations undertaken ahead of the establishment of the Newport Wetland Reserve near Goldcliff identified several banks that displayed evidence for maintenance and alterations. The fills of the associated ditches suggested heavy episodic flooding rather than smaller silting events thus it appears that the banks were successful in providing some level of protection against regular inundation (Locock, 1997).

2.3.18 Palaeoenvironmental evidence indicates that the landscape across the Levels was open and predominantly pastoral, although some agriculture may well have been possible (Meddens, 2001; Meddens and Beasley, 2001). Livestock would have included cattle and sheep, although horses were also presented in reasonably high numbers. Known Roman settlements are mainly located on the slightly higher ground at the coastal and estuary edges. However, this may be a distribution based on opportunity for observation rather than a genuine distribution. Evidence of Roman navigation along the network of channels within the Levels is provided by the discovery of a well-preserved boat of early 4th century date at Barland's Farm, during work ahead of the construction of the Gwent Europark (Nayling and McGrail, 2004).

2.3.19 It appears that most, if not all, of the land reclaimed and used during the Roman period was subsequently inundated, with the deposition of alluvium (up to 700 mm thick) across the former ground surface which in places is preserved as a buried soil. This is likely to have been an episodic process in which different parts of the landscape were subject to various stages of deposition and stabilisation.

Early Medieval and Medieval

2.3.20 The limited evidence for Gwent in the ***Early Medieval period (c. AD 410 - 1066)*** points to a certain amount of continuity in both land use and settlement. It is likely that the void left behind by the departing Roman authority was taken up initially at least by members of local elites, with activity continuing in key sites such as Caerleon and Caerwent. The latter site may have been the location of an early monastic community. Most of the evidence for activity within the Levels during this period comes from documentary sources, predominantly descriptions of estate boundaries but also references to possible landing places. It is likely that there was some limited recolonisation, with small embanked 'infield' enclosures and potentially canalisation of natural channels (Rippon, 2000).

2.3.21 Caerwent remained as the main ecclesiastical centre of Gwent in the 6th and 7th centuries. Early churches were established throughout the region including examples at Newport (the precursor to the cathedral) and also at Bassaleg, Coedkernew and Great Pencarn.

2.3.22 There are also accounts of Viking raids on south Wales during the late 9th and early 10th centuries AD. Part of a boat thought to be of Scandinavian type construction was found during the construction of the Alexandra Dock at Newport in 1878 and a timber from this vessel was subsequently dated to approximately AD 950 (Hutchinson, 1984), although this was from the inner rings and a slightly later (possibly 12th century) date may be more appropriate.

2.3.23 Another boat was found in the intertidal area close to Magor Pill. This was dated (through dendrochronology) to around AD 1240 and was of shallow draft, ideal for traveling along the small tidal creeks of the estuary and utilising small ports or landing places. It had been carrying iron ore from Glamorgan to an unknown location when it foundered in the creek (Nayling, 1998).


PART OF
PETERSTONE
MARSHFIELD PARISH
SAINT MELLONS PARISH
PARISH OF PETERSTONE
RUMNEY PARISH
PETERSTONE CHURCH
Great Gout
Peterstone Great Wharf
Sea Wall
From Rumney
BRISTOL CHANNEL

2.3.24 In contrast to this is the Newport Ship – a much larger vessel of 15th century date which was found on the west bank of the River Usk within Newport during construction of the Riverfront Arts Centre. This was a merchant ship trading along the Atlantic coast and was probably built in northern Spain around AD 1450 (Nayling and Jones, 2013).

2.3.25 The current landscape of the Gwent Levels is predominantly a result of the process of drainage and recolonisation which commenced during the ***Medieval period (c. AD 1066 - 1500).*** This was linked to the post-Conquest settlement of south Wales and the influx of English settlers with associated socio-economic elements that affected land ownership and land use. Some of the drainage may be associated with monastic ownership and the establishment of grange farms both on the Levels and on the dry land. Monks Ditch appears to represent a clear boundary within the Levels, with land to the east potentially being held by English lords whilst that to the west was held by Welsh landlords (Rippon, 1997; 2014).

2.3.26 Small settlements were established on the dry land at the fen-edge (e.g. Llandevenny, Bishton, Llanwern, Coedkernew, Magor, Undy) and exploited areas of the back-fen. Other settlements were established on the Levels proper; these were mostly dispersed but with some distinct foci (e.g. Redwick, Goldcliff, St Brides, Peterstone) and these were able to utilise the remaining open saltmarshes as well as the back-fens. A settlement was clearly present at Newport itself at this time, probably centred on the early church at Stow Hill which subsequently developed into the cathedral church of St Woolos. The castle further to the north and on the west bank of the River Usk dates to around the 14th century.

2.3.27 Over the last few decades the field patterns on the Gwent Levels have been studied in order to understand the history and sequence of this reclamation and the establishment of the drainage network. This includes not only the numerous reens (major and minor) which drain the wetlands but also the embanked watercourses that channel the runoff from the uplands to the north across the Levels to the coast. The process of reclamation and settlement was not constant and certainly there was a time at the end of the 14th century when population decline and climate change led to the (temporary) abandonment of some areas of land (cf. Rippon, 1996; 1997).

2.3.28 The dispersed settlements across the Levels include individual farmsteads and properties, often within a moated enclosure for drainage purposes.

Post-medieval and Modern

2.3.29 The process of reclamation and enclosure of common land continued on throughout the ***Post-Medieval period (c. AD 1500 - 1800)*** with the back-fens being the areas that were predominantly the last to be enclosed and drained – in some cases that did not happen until the 19th century. There appears to have been an increased emphasis on pastoralism and a decrease in arable farming and this has continued until the present day. Settlements expanded and there was an increase in the number of dispersed farmsteads and roadside cottages. There was also considerable development at Newport where a thriving port was established.

2.3.30 The ***19th century*** saw major changes within the area. Most notably this includes the establishment and expansion of the docks at Newport into one of Wales' leading coal ports. At the same time the settlement here developed into one of the largest towns in Wales.

2.3.31 The Town Dock was opened in 1842 to address the needs of the coal and iron exporters and was expanded in 1858. The Alexandra Dock was initiated in the 1860s and the North Dock and associated lock opened in 1875. A South Dock opened in 1893 but was soon extended and an enlarged dock was opened in 1907 with a new South Lock opening in 1914. Just to the north of the docks the River Usk is spanned by the Newport Transporter Bridge. This was constructed to link the town with

industrial development on the east side of the river and was opened in 1906. A gondola or moving platform is suspended from a high level beam and carries vehicles and passengers across the river. The bridge is almost 74 m high and spans more than 195 m.

2.3.32 The South Wales to London Mainline railway cuts across the northern part of the Gwent Levels. It was constructed in the mid-19th century (this section opened in 1850) as the South Wales Railway and was engineered by Isambard Kingdom Brunel, enabling his Great Western Railway to extend the link from London into south Wales.

2.3.33 During the Second World War, a number of military positions were established around Newport in order to defend the docks, which were a strategic target for enemy airborne assault. A number of features associated with these wartime defences are still present in the area.

2.3.34 The M4 motorway runs across the eastern part of Caldicot Level and forms the northern boundary of the area. A new road from London to South Wales was first proposed in the 1930s, and in 1956 the Ministry of Transport announced plans for the M4 as one of the first major post-war trunk road improvement projects. Between 1966 and 1996, the Severn Bridge (now a Grade I listed structure), carried the M4 motorway across the River Severn and River Wye from Aust in South Gloucestershire to Chepstow in Monmouthshire. The Second Severn Crossing opened in 1996, together with new link motorways on either side of the estuary to divert the M4 over the new crossing. The existing route over the original Severn Bridge was redesignated the M48.

2.3.35 Modern development within the Levels and the adjacent land also includes the huge steelworks complex at Llanwern, the Uskmouth power stations, chemical and aluminium plants and also the industrial estates and business parks such as the Gwent Europark and Imperial Park. There has also been considerable settlement growth in and around the major urban conurbations of Newport (such as the Glan Llyn new community under construction on land adjacent to the west of Llanwern Steelworks) and Cardiff, and also in the surrounding villages including those on the Levels.

The Historic Landscape

2.3.36 The national importance of the Gwent Levels as an outstanding example of a landscape 'hand-crafted' by people, preserving clear evidence of distinctive patterns of settlement, enclosure and drainage systems, is recognised by its inclusion on the Register of Landscapes, Parks and Gardens of Outstanding Historic Interest in Wales as a Historic Landscape of Outstanding Historic Interest (see **Figure 2.5**).

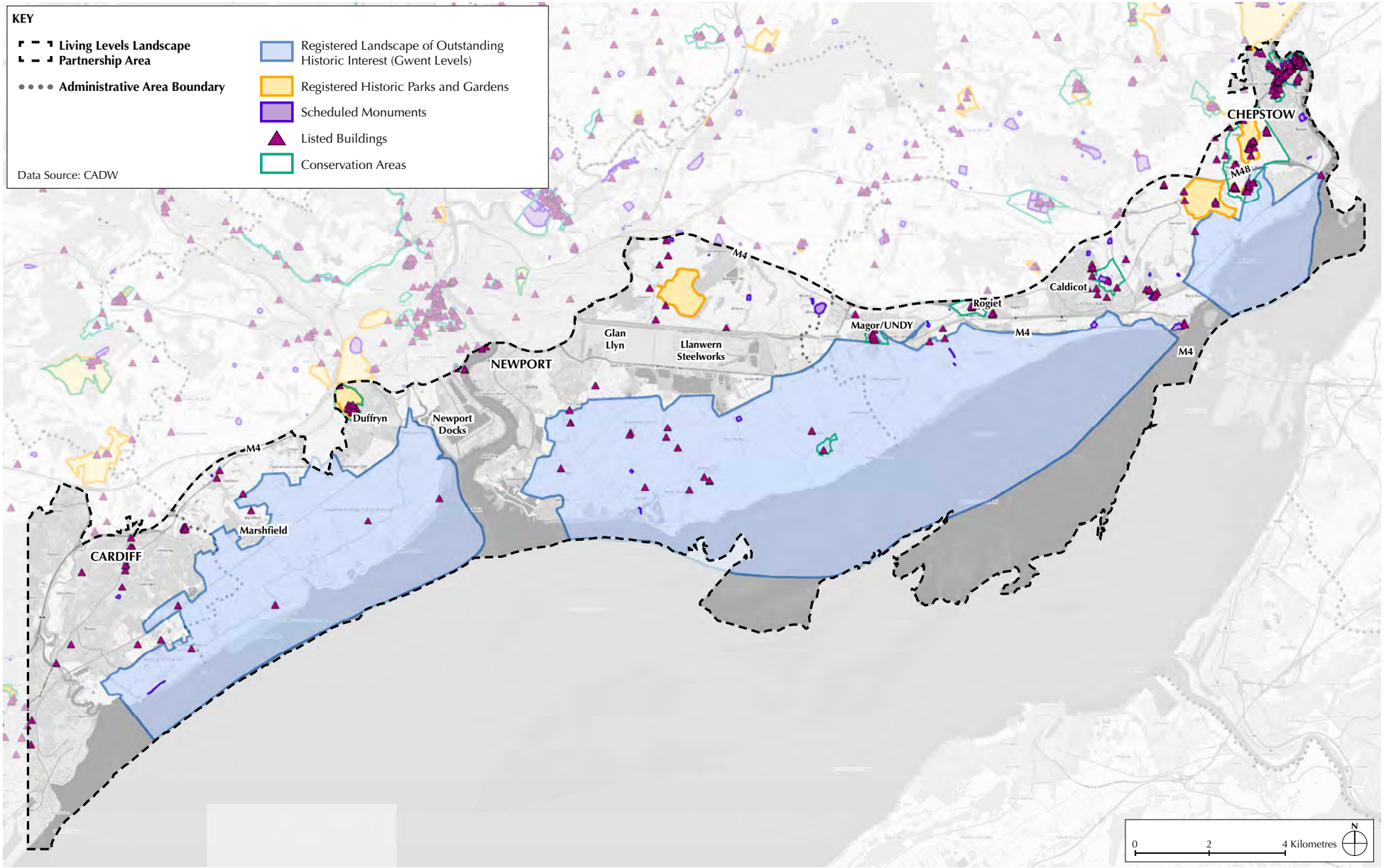
2.3.37 The following description of the surviving features and significance of the historic landscape is based on the Historic Landscape Characterisation report (undated) for the Gwent Levels Historic Landscape of Outstanding Historic Interest prepared by the Glamorgan-Gwent Archaeological Trust.

2.3.38 The "historic landscape" includes all aspects of people's exploitation of a particular environment that survive and contribute to its present character. It is important to stress that individual sites or historic landscape features, while important in themselves, assume a greater significance when viewed in a wider landscape with their contemporary and related features; the sum of the whole is greater than the sum of each part.

2.3.39 The Levels are also rich in earthworks preserving elements of the medieval and later landscape. These include several moated farmsteads, sea and reen-side banks and surface ridging in fields created to improve drainage.

2.3.40 The Gwent Levels consist of up to c.13m of alluvium and peat, stratified within which there are abundant traces of people's exploitation of that

Figure 2.5 Designated Heritage Assets



wetland environment during the prehistoric period onwards. Particularly rich are the peat deposits, which preserve wooden structures as well as a record of the changing environment covering many thousands of years. Recent years has shown that entire prehistoric landscapes lie buried in the Levels.

2.3.41 The distribution of major archaeological discoveries shows a marked bias towards the intertidal zone, since this is where the alluvium that overlies the prehistoric and Roman landscapes has been eroded away. Like the peat layer itself, this density of archaeological sites is likely to continue inland, but simply lie undiscovered. Another concentration of sites lies along the fen-edge, where there has been considerable development exposing the archaeological remains.

2.3.42 A variety of processes have led to the creation of the "historic landscape", giving rise to different areas possessing their own character. A broad distinction can be drawn between landscapes created in a gradual way, and those that were laid out in a single episode.

2.3.43 The former can be termed "irregular", and are of great complexity. They have small irregularly shaped fields, often incorporating the meandering lines of former tidal creeks. A piecemeal process of landscape formation occurred, in the eleventh to fourteenth centuries ("high medieval" period). Roads are sinuous and broad, often with an abundance of roadside waste; these "droveways" were vital for moving livestock from summer to winter pastures. Settlement was dispersed, with hamlets, isolated farmsteads and cottages scattered throughout the landscape. There were a number of commons that became the focus for settlements (eg Broadstreet in Nash; Whitson; and Peterstone).

2.3.44 Colonisation started on the higher ground towards the coast. The lower-lying "backfen" was only drained later, as population rose, increasing the demand for land. A sequence of reclamations can often be identified, as communities gradually drained the back-fen. These areas tend to have landscapes of an "intermediate" nature; rather more regular in lay-out than the "irregular landscapes", but not so rigidly planned as the "regular" variety. Intermediate areas are characterised by a fairly rectilinear pattern of fields and roads, with just the occasional farmstead or cottage.

Levels Lingo **Fen**

A low and marshy or frequently flooded area of land.

2.3.45 The "regular" landscapes are very different. Their fields are rectangular and occur in large blocks of similar sized fields. The roads are straight and narrow, lacking roadside waste. There is very little settlement, mainly as these landscapes occupy be lowest-lying land. A very different process of reclamation was responsible for their creation; the large-scale and rapid enclosure of extensive tracts of land, in a single episode.

2.3.46 In addition to the distinctive and characteristic field patterns belonging to different phases of enclosure described above, other key surviving features of the Gwent Levels' historic landscape are:

- Water Management and the Drainage System
- Access and Bridges
- Historic Settlement Patterns, Buildings and Structures
- Historic Orchards

2.3.47 These are described below.

Water Management and the Drainage System

2.3.48 The distinctive pattern of the drainage system in the Gwent Levels landscape is illustrated on **Figure 2.1** and **Figure 2.8**.

2.3.49 As highlighted above, the Gwent Levels were created through the enclosing and draining of tidal saltmarshes, and are still dominated by the need to manage water. Without sea walls, all the Levels would be frequently inundated by the sea.

2.3.50 Another constant problem is managing rainfall and run-off from the uplands, which is dealt with by a complex system of drainage channels. Large gullies known as "grips" carry water off the surface of fields into the network of field ditches, and are by far the commonest form of surface drainage. Upland run off was dealt with by major rivers and winter sewers.

Levels Lingo **Grips**

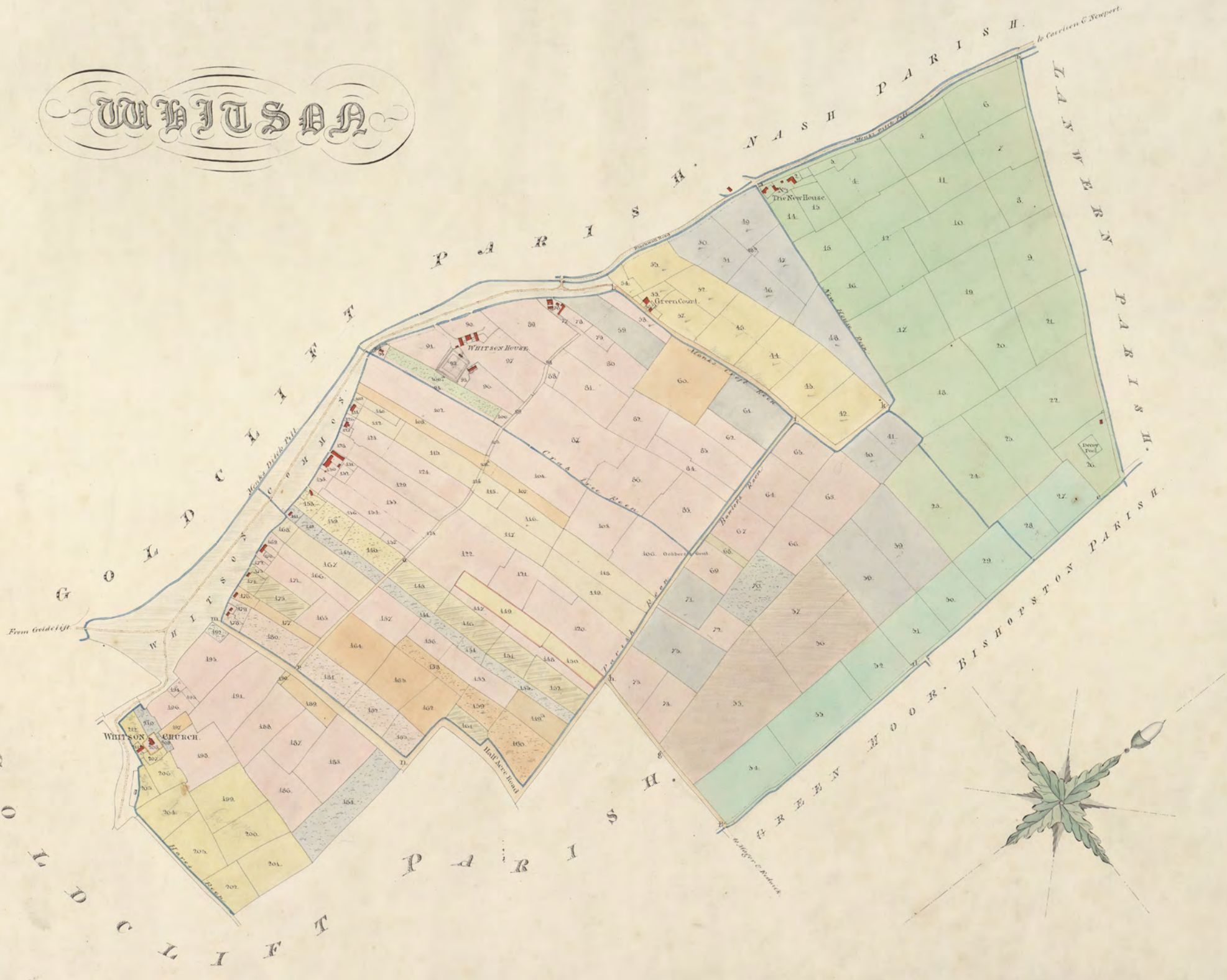
A small or open furrow or ditch for carrying water off. Grips are a system of surface draining where a rectangular pattern of shallow furrows are cast, leading the surface water to the headland and so into the adjacent field ditch.

2.3.51 Water then drains from these into major watercourses known as reens. The reen network is the key feature of the Levels, both in terms of their ecological importance and the historic landscape. The reens provide the boundaries and framework for most of the sub-character areas defined in Chapter 3.0.

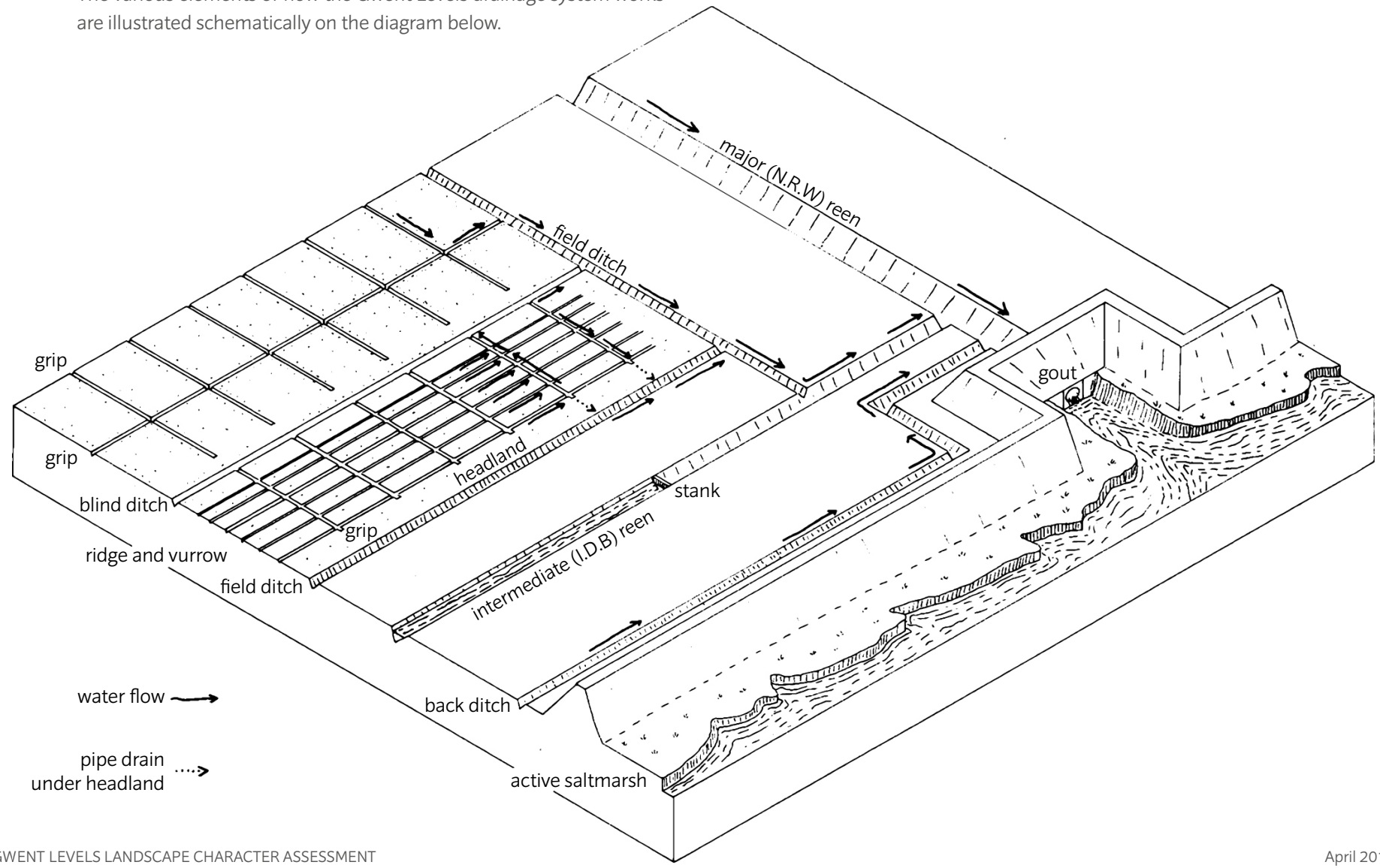
Levels Lingo **Reens**

From the Welsh 'rhewyn', reens is the local word for the watery ditches that criss-cross the landscape like arteries, the primary feature of a complex drainage system that was dug over centuries, and which included a subtle variety of components, from parallel field depressions to shallow surface grooves called 'grips'. On the Levels, it was the responsibility of those along its banks to maintain it annually or face action from the Court of Sewers.

WHITSON


NASH PARISH.
GOLDCLIFF PARISH.
LLANWERN PARISH.
BISHOPSTON PARISH.
GREEN MOOR.
WHITSON
COMMON
WHITSON HOUSE.
WHITSON CHURCH.
The New House.
Green Court.
Monks Ditch Pill
Monks Ditch Rhyne
Monks Ditch Rhyne
Monks Ditch Rhyne
Barrack Rhyne
Barrack Rhyne
Hall Acre Road
Hall Acre Rhyne
From Goldcliff
to Caerleon & Newport
to Magor & Redwick

2.3.52 The method of drainage was first established in the Levels nearly 1800 years ago. It takes the form of a hierarchy of drainage channels, which are now of considerable historic and nature conservation importance. The various elements of how the Gwent Levels drainage system works are illustrated schematically on the diagram below.



2.3.53 The maintenance of this system has always been a co-operative effort by farmers and the authorities in power. The former have tried to protect their livelihoods and prevent fertile lands being destroyed by flood. The latter, beginning with the Roman legions and continuing with the medieval monasteries, marcher lords, the Commissioners of Sewers, and a range of modern bodies, have been seeking to preserve their interests in, and responsibilities for, the Levels as a whole.

Levels Lingo **Cast**

A term used locally in the Gwent Levels for the way people cleared silt with a spade or shovel in order to make ditches.

2.3.54 The whole drainage system in the Levels relies upon the sea wall. Historically the wall has retreated, with much of its present line dating from the late medieval period. In a total length of c.35km, there are many different styles and dates of wall which were steadily improved and modified between 1954 and 1974.

2.3.55 However, following a heavy storm in 1990 when these sea defences were tested to the extreme, a 10 year programme of raising and strengthening the wall was undertaken. This produced a much more standardised structure hiding the existing complexities, which make the short lengths of relict sea wall at Rumney Great Wharf, Peterstone Gout and alongside Collister Pill even more valuable.

Levels Lingo **Pill, Pil or Pwl**

Pill may be derived from the Welsh 'pwll' meaning pool. In the Gwent Levels it originally meant the whole course of the main rivers but is now used to mean the tidal creek below a gout.

2.3.56 The saltmarsh beyond the sea wall has traditionally provided summer grazing. Only a limited number of farmers on the Wenthooge Level have grazing rights to continue this practice, which assists in maintaining the diversity of the plant communities. There are also extensive tracts of common land on Wenthooge Level, for which local land owners continue to have grazing rights.

Levels Lingo **Earthing, turfing & heading**

Earthing, turfing and heading are the processes to repair and raise the height of a sea wall.

2.3.57 The first tier in the hierarchy of drainage channels that divide up the Gwent Levels are the rivers and the c.64 km of main reens in which upland streams have been canalised to run across the low-lying levels and out through a tidal flap system (gout) to the sea. Some of these main reens, such as Monksditch and Mill Reen, flow between raised banks onto which the periodic clearings of the reens are dumped. In places such as Monksditch near the Whitson sub-station and the north end of Blackwall in Magor, the reen sides are revetted by stone walls and timber facings.

Levels Lingo **Gout**

The gout is a simple tidal flap system similar to that used by the Romans nearly 2000 years ago. Fresh water from the ditches and reens goes through the sea wall at low tide via a flap and out to the sea. When the tide comes in, the incoming seawater pushes against the flap and closes it. The fresh water on the other side of the wall builds up temporarily in the reens until the tide turns and goes back out. The weight of the fresh water then pushes the flap open again – draining out to the sea until the next high tide.

The word "Gout" comes from the Old English word "gota", and Middle English "gote", meaning watercourse, channel, drain or stream. The same word can be seen in Goyt, Cheshire and Gut in various places in Britain.

Levels Lingo – **Noghole, noggor or noggle**

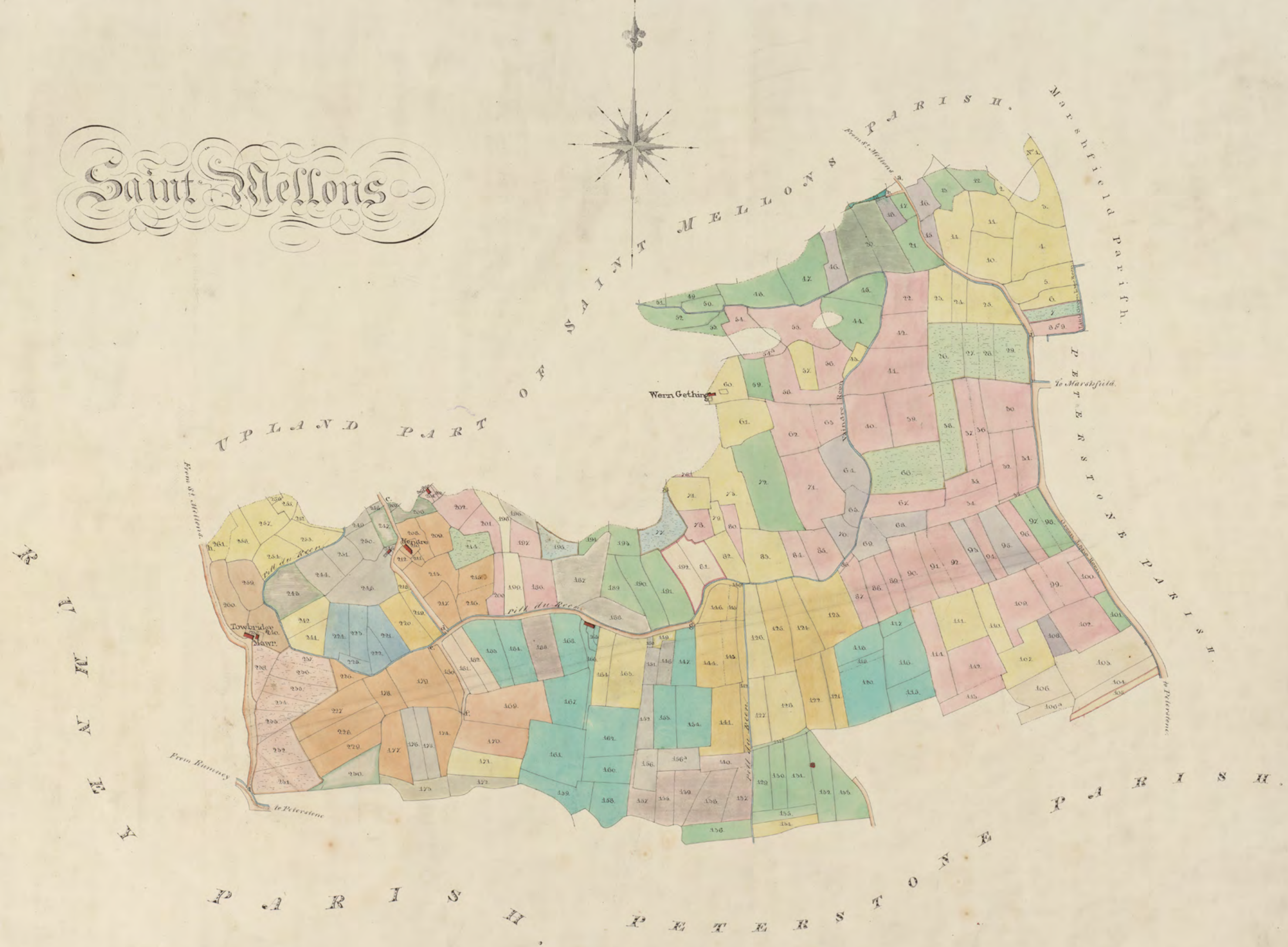
A wooden peg in the planks in the bottom of a pill over a gout which can be lifted to allow water into a local reen system. These structures have only been recorded and survive on Monksditch.

2.3.58 The next tier in the hierarchy of drainage channels are the c.137km of lesser reens. Water levels are managed in these reens by pens known as "stanks", in which wooden planks can be set to raise the water levels in summer and reduce them in winter.

2.3.59 Another important feature are the "walls", which seem to have been low earth banks built on the uphill or seaward side of those reens dug to drain the back-fen. They provided additional protection from winter flooding to the better land behind. Another feature of these reens is the lines of pollarded willows planted to strengthen the bank sides.

Levels Lingo – **Stanks**

Stanks are ponds but in the Gwent Levels the word has come to apply to the temporary dam or weir which held the water back –the local name for a moorhen 'stankhen' derives from 'stank'.


Saint Mellons
UPLAND PART OF SAINT MELLONS PARISH.
Marshfield Parish.
PETERSTONE PARISH.
RUMNEY PARISH, PETERSTONE PARISH.
Wern Gething
Hendre
Towbridge Mawr
To Marshfield
From St. Mellons
pill du Reen
From Rumney
to Peterstone

2.3.60 By far the largest tier in the drainage hierarchy is the c.1200km of field ditches maintained by individual landowners. Here, the clearance of ditches and management of the associated hedges may extend over a 10 to 30 year cycle.

Levels Lingo - **Reaping and Scouring**

Reaping and scouring refers to the twice-yearly reen maintenance tasks, which involved cutting down the riparian vegetation and cleaning out the watercourse of vegetation and debris.

2.3.61 Traditionally, the ditches would have been kept open with occasional pollarded willows to help support the banks but not hedges, and the ditches used as wet fences to keep the stock in. For example, in the lowest-lying back-fens, the fields are characterised by stands of reeds and isolated willows.

Levels Lingo – **Sluice**

A door on the side of a pill with a lock and key to open and shut to allow water into a reen when required.

2.3.62 The lowest tier of the drainage hierarchy is the surface ridging. Skilfully created by hand digging or ploughing, these slight earthworks provide a network of shallow surface drainage gullies which take water off the field into ditches and reens. They do not survive in fields that have been underdrained and ploughed, which commenced from the late 1950s after improvement to the drainage system.

Levels Lingo – **Brinker**

A person who owns land on one side of a reen, wall or pill and is responsible for its maintenance – derived from "Brinker", a person living on the brink or border.

Access and Bridges

2.3.63 Access around the Levels depended upon the larger droveways, which form part of the framework of each character area. Tracks and paths were carried over the reens and field ditches by scores of small bridges. Some may be several hundred years old, and fine examples survive along Mireland Pill Reen (Goldcliff) and Rush Wall (Magor). Stone, brick, concrete and wooden bridges over the watercourses all survive, but many are in decay or have collapsed.

2.3.64 The loss of routes due to bridge decline is associated with the improvement of key bridges, such as those on public rights of way, encouraging use along one single route rather than one from each dwelling to a common destination such as the local church. Some of the old routes went into disuse when the railway was built, as they crossed the tracks and so people stopped using them.

Historic Settlement Patterns, Buildings and Structures

2.3.65 The dispersed settlement of isolated farms in the coastal parts of the Wentlooge and western Caldicot Levels (all "irregular landscapes"), contrasts with the nucleated village of Redwick and linear settlement along Whitson Common. The back-fens are largely devoid of settlements ("intermediate" and "regular" landscapes), though the fen-edge has always been a favoured location for occupation.

Levels Lingo – **Perch**

A perch is a commonly used unit of length and area measurements for allotments. It is used in the Levels for measuring land, fences and walls, varying locally but was later standardized at 5½ yards.

2.3.66 The historic farm houses and farm buildings have always been at the centre of the area's economy. In some cases, farm complexes have been abandoned by new institutional owners.

2.3.67 As shown on **Figure 2.5,** there are 4 Conservation Areas within the study area designated as being of special architectural or historic interest. Redwick, the largest nucleated village on the Levels, is a designated Conservation Area. Conservation Areas are also found in parts of Chepstow, Mathern and Rogiet.

2.3.68 There are also 37 (7 of which are Grade I) statutory listed buildings within the study area designated as being of special architectural or historic interest (see **Figure 2.5**). These include for example the recently restored Grade II Listed Pye Corner Farm in Nash, which is thought to have been initially constructed in the 17th century; the Grade II* Church of St Mary in Marshfield, which is likely to date from the 13th or 14th century date; and the Grade II* Church of St Bridget in St Brides Wentlooge, which is probably 12th or 13th century in origin.

2.3.69 A considerable number of other historic buildings and structures have been recorded within the study area, which are not included on the national statutory list nor on any local list. These range from farmhouses and farm buildings to mills, cottages, bridges and railway sidings, and Second World War military structures such as pillboxes and the barrage balloon bases near Pye Corner. There are also timber and concrete features within the intertidal muds along the fringes of the Severn Estuary.

Historic Orchards

2.3.70 Alongside most farms used to be an orchard, and the surviving examples are an important feature of the Levels. The end of cider making locally means that most orchards are no longer commercially viable. However, there are some fine examples, notably in Goldcliff, Redwick and Magor. The Gwent Levels orchards have produced their own specific apple and pear varieties.

Buried Archaeology

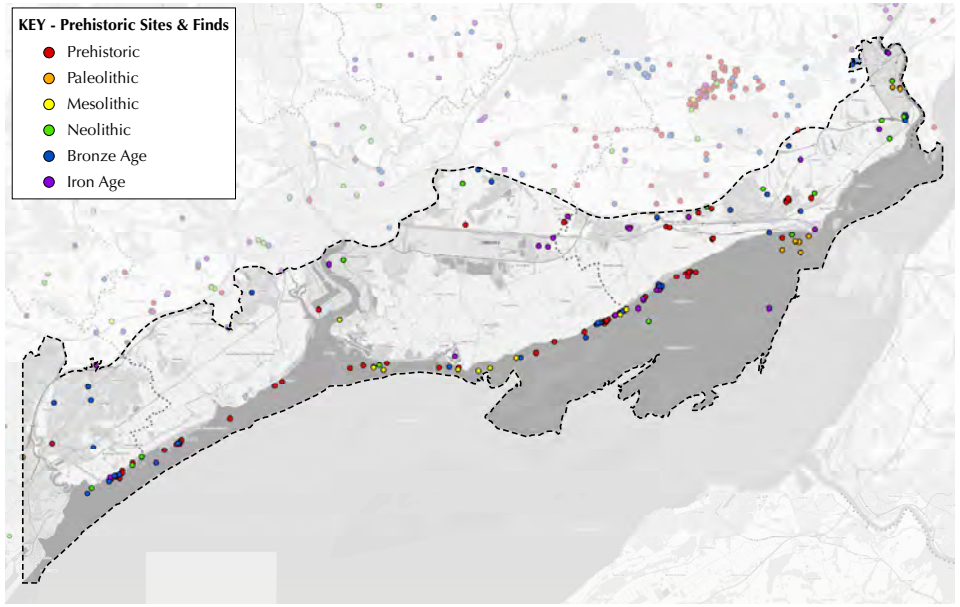
2.3.71 The area contains a wealth of archaeological and heritage assets of national importance, much within the waterlogged soils across the area, illustrating the history of human occupation and management of a reclaimed coastal landscape.

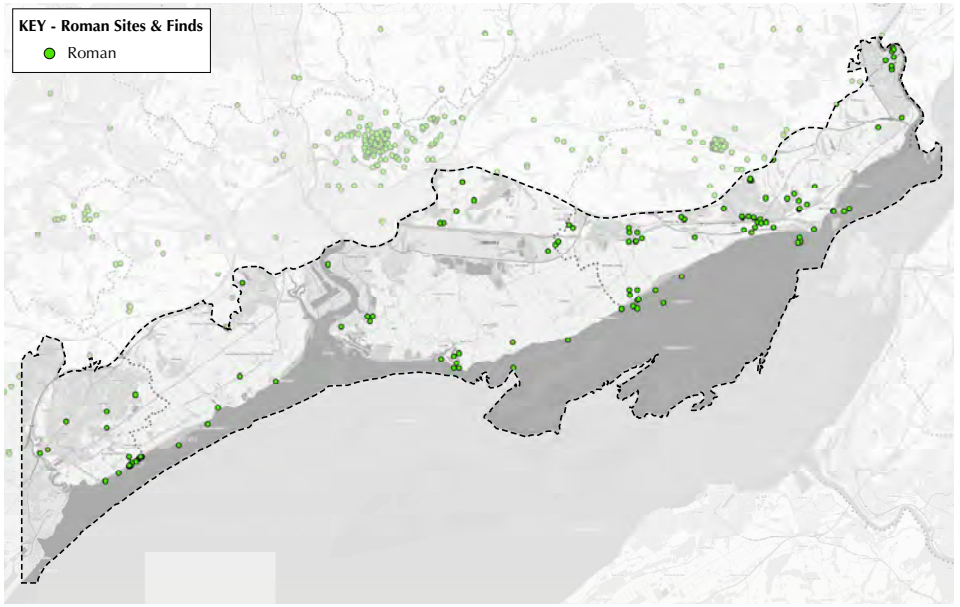
2.3.72 The distribution of recorded archaeological sites and monuments within the study area from the Historic Environment Record held by the Glamorgan-Gwent Archaeological Trust are shown on **Figure 2.6.**

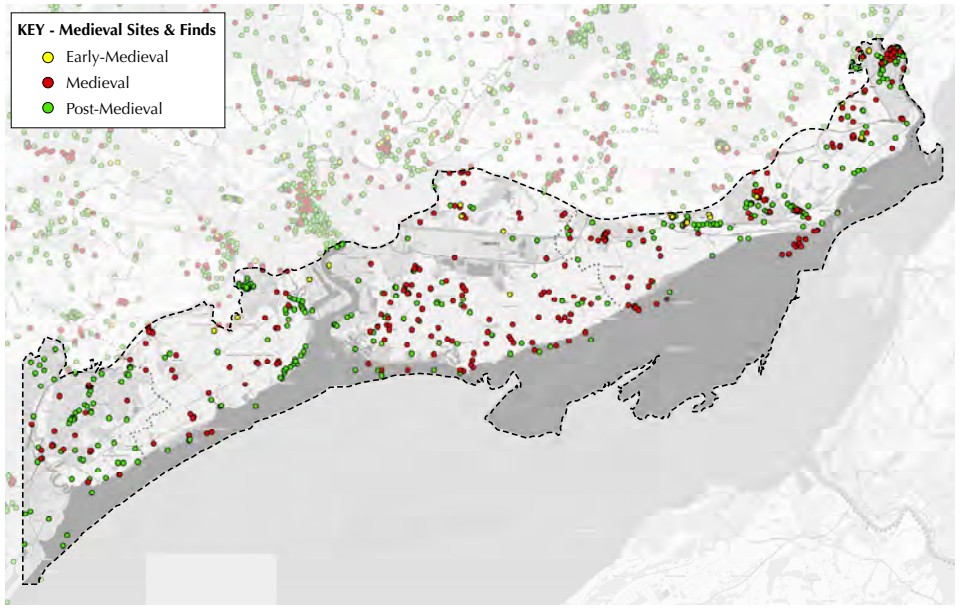
2.3.73 Recent work has shown that the Levels are particularly rich in buried archaeology, of national and international importance, both in the intertidal zone and inland of the sea wall.

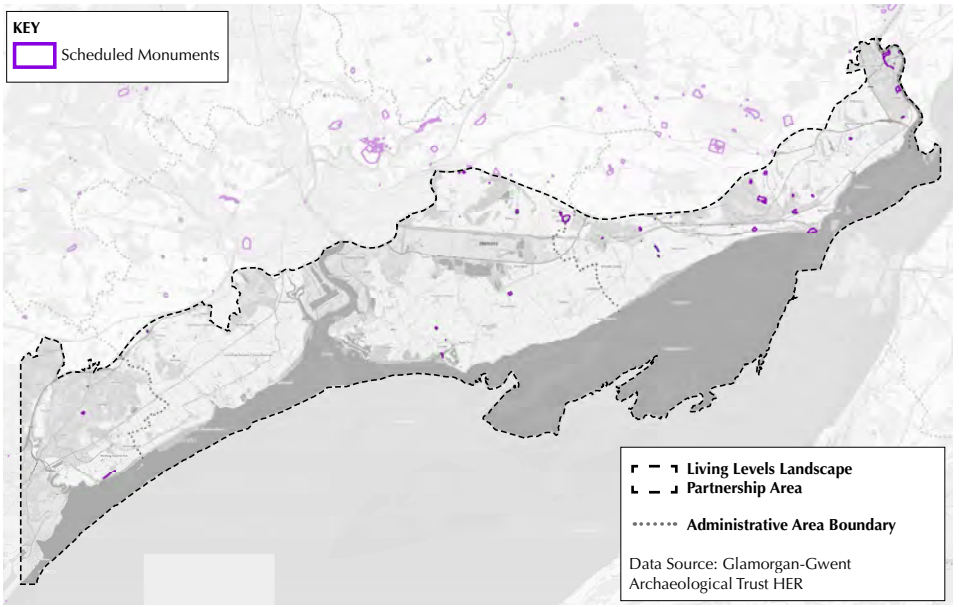
2.3.74 Over most of the Levels, prehistoric and Roman landscapes are sealed by later alluvium. Because of the depth of this alluvium even the most advanced methods of non-interventional prospection cannot identify

Figure 2.6 Historic Sites and Monuments









such sites without excavation. However, this blanket of alluvium, and the resulting waterlogged conditions, give rise to excellent preservation of archaeological deposits.

2.3.75 As shown on **Figure 2.5,** there are 14 Scheduled Monuments within the study area designated as being archaeological sites and monuments of national importance. These include for example the Goldcliff moated house site, almost certainly of medieval date; the Grangefield moated site of a medieval grange farm which was an early property owned by the Cistercian abbey of Tintern; and relict seabanks in Rumney and Undy.

The Severn Estuary

2.3.76 Past human activities have long been governed by the vast tidal range within the Severn Estuary, which has seen major and minor fluctuations in the heights and range of tides since the last glaciation caused by variations in both the land and sea level.

2.3.77 Behind the present course of the estuary, the hand-crafted landscape of the Gwent Levels reflects people's evolving and often precarious relationship with these circumstances over the last ten thousand years. Because of recurrent phases of inundation and alluviation, there is a proven potential for extensive, buried, waterlogged, archaeological and environmental deposits belonging to the earlier landscapes, which extend beyond the seawalls and banks into the intertidal mudflats. These include the remains of Neolithic/Bronze Age settlement sites, as evidenced by human footprints, lithic finds, butchered animal bone, brushwood trackways and roundhouses (e.g. in the vicinity of Collister Pill). The national importance of the inter-tidal area for its uniquely rich archaeological and historical resource is recognised by its inclusion in the Gwent Levels Registered Landscape of Outstanding Historic Interest in Wales.

2.3.78 The long-standing relationship between local communities on the Gwent Levels and the estuary is evidenced by small, traditional landing places for cross-channel trade, which serviced communities such as Peterstone, Goldcliff, Rumney and Redwick, and are associated with early medieval ship finds. Intertidal fishtraps from the same period are found at Goldcliff, West Pill and Caldicott, with the traditional method of "putcher" fishing continuing to be practiced by some local fisherman.

Levels Lingo - **Putcher or Putcheon**

A funnel shaped basket traditionally made from hazel rods and willow plait for catching salmon and eels in the River Severn and tributaries.

2.3.79 Local fishing fleets and recreational charters continue to exploit the rich marine resources, trawling the sand banks for plaice, turbot, whiting and rays, whilst beach netting and angling occurs along the coastline, particularly on Wentlooge Level.

2.3.80 The importance of the Estuary for maritime trade burgeoned from the medieval period onwards, particularly following the Industrial Revolution which transformed Cardiff into one of the largest coal ports in the world (the coal sourced from the valleys supplied the Naval fleet). The import and export of goods and raw materials along the estuary fed the expansion and wealth of Cardiff, Newport, Bristol and Gloucester. The pattern of ship wrecks illustrate both the dangerous navigational conditions and the estuary's role as a maritime traffic route (with losses associated with the Cardiff approaches and hazards such as the Aldridge Shoal).

2.3.81 As well as trade and exploitation of the area's natural resources, the strategic role of the Estuary as a key entry point into Britain by sea has long been recognised. Both the Roman and Viking fleets made approaches via the Bristol Channel and Severn Estuary and occupied the wider area.

2.3.82 Flat Holm Island, south of the study area, was fortified in the 1860s as a defence against invasion, forming part of a line of defences, known as Palmerston Forts, built across the Bristol Channel to protect the approaches to Bristol and Cardiff. The fortifications were enhanced in the 20th century to serve the two World Wars. Ship wrecks associated with the two World Wars provide a legacy of the area's role in more recent conflicts; vessels involved in D-Day embarked from Newport, as well as Cardiff and Barry. Today, the Estuary retains its long-standing role in marine transportation, with Avonmouth (Bristol) now expanded to be one of the UK's major ports. Although Newport's port functions have declined since their 19th century peak, it still plays an important role in the import and export of a range of products including containers, steel, aggregates forest products and dry and liquid bulks. Newport sees around 1.5 tonnes of goods pass through its port each year.

2.4 Cultural Landscape

2.4.1 LANDMAP generally defines the Cultural Landscape as the links between landscape and people, from the fundamental way in which cultural or human activity shapes the landscape, to the way in which culture shapes the way people think about landscape. This section presents an overview of how the Gwent Levels landscape has, or is being, visibly and recognisably fashioned by particular historical and contemporary cultural activities or processes, and how it has been directly represented, depicted or described in art, literature or folklore.

Farming

2.4.2 The Levels is principally a reclaimed, man-made landscape protected across much of its area by sea walls, and criss-crossed with a subtle but practical system of drainage. Field patterns vary widely, at times the product of cultural evolution, at others to meet prevailing systems of agriculture or to respond to topographical features. Historically, it is thought that in the earliest days the land was used largely as summer pasture before the successive engineering skills of the Romans and, later, monastic houses and the Normans developed the present sophisticated methods of draining the land and preventing encroachment of the Severn Estuary waters.

Industry and Settlement

2.4.3 Settlement patterns on the levels vary between the larger (but still small) groupings on the rising back lands, single farms at the end of narrow roads (frequently running alongside reens) and small clusters of houses. Wentlooge Level has seen the encroachment of business parks adjacent to Cardiff. The western coastal area here is now the Lamby Landfill site on the coast where the Rhymney River meets the Severn Estuary.

2.4.4 Further inland, where the landscape setting is more dominated by the modern urban sprawl of Cardiff and Newport, there are fewer remaining features of cultural importance. Llanwern Steelworks began production in 1961, and was formally opened by HM The Queen in 1962. Built in the back land area of Caldicot Level to the south of and adjacent to a three mile stretch of the Great Western Railway, it stood alone in the countryside to the east of Newport. Since that time the City has gradually spread eastwards to the site boundary. Although steel making ceased in 2001, there is still some sizable infrastructure based on the site. The redundant part of the works is scheduled to be transformed into the extensive Glan Llyn residential development with new schools, a district centre, sports fields, shops offices and restaurants that will greatly extend the conurbation of the City.

Transport Infrastructure

2.4.5 Motorways, other major highways and railways dominate the northern fringes of the Levels landscape, providing both a means of rapid access to and bypass of the region. The Levels are principally located to the south of the Cardiff-London Railway, except towards the north-east where they appear between the railway and the M4 and M48 that cut through the northern fringe of the Levels.

Leisure and Recreation

2.4.6 The Gwent Levels landscape is used by local communities and visitors for a range of outdoor leisure and recreation activities, in particular walking, cycling and bird-watching.

2.4.7 Facilities and destinations include promoted recreational routes (such as the Wales Coast Path, Sirhowy Valley Walk and the Rhymney River Walk); country parks (Caldicot Castle and Tredegar House); nature reserves (Newport Wetlands, Magor Marsh and Great Traston Meadows); villages (such as Redwick and Peterstone); Hendre Lake near St Mellons; and the Transporter Bridge (a distinctive landmark, visitor attraction and crossing point for users of the Wales Coast Path).

2.4.8 Further details about leisure and recreation facilities in the Gwent Levels can be found in the Living Levels Destination Management Plan.

Levels Lingo - **Reen vaulting**

Reen vaulting was a popular local sport once practised by people in the Gwent Levels.

The Linguistic Landscape

2.4.9 Set in the context of an overall decline in Welsh speaking, reading and writing across Wales, communities in different parts of the Gwent Levels have seen both an increase and decrease in the use of the Welsh language from 2001 to 2011:

Welsh Language in the Gwent Levels

In the **Monmouthshire** part of the Gwent Levels, there was a rise in Welsh language speakers from 9.7% to 9.9%, one of only two areas in Wales to see a rise in this period. A major contributing factor to this rise was the growth of two Welsh medium primary schools in the County, one of which (Ysgol Gymraeg y Ffin) is located in Caldicot. At the time of the last Census (2011), 11.2% of the population of Severnside stated that they were able to speak Welsh, as well as 8.3% saying they could speak, read and write in Welsh.

In the **Newport** part of the Gwent Levels, the percentage of people aged 3+ years who could speak Welsh at the time of the last Census in the electoral ward of Llanwern (on Caldicot Level) was 11.2% compared with 9.3% for Newport and 19.0% for Wales. The percentage of people aged 3+ years who could speak Welsh at the time of the last Census in the electoral ward of Lliswerry (on Caldicot Level) was 8.9%. The percentage of people aged 3+ years who could speak Welsh at the time of the last Census in the electoral ward of Marshfield (on Wentlooge Level) was 9.2%.

In the **Cardiff** part of the Gwent Levels, the Census indicated that only 7.8% of those aged 3+ in the electoral wards of Llanrumney, Rumney and Trowbridge (on Wentlooge Level) are Welsh speakers, which is below the city average of 11.1%.

2.4.10 The Welsh language and history of the area have been interwoven through the culture over the ages. The names of agricultural fields, places, farmsteads and houses in the Gwent Levels are a mix of Welsh and English. Over the years, new people have moved in to find work, to retire or for a lifestyle change. Also, people (mostly young) have moved out of the area, predominantly in pursuit of education or in search of work. These changes have a profound effect on the use of the Welsh language and the culture.

Folklore

2.4.11 The Gwent Levels are mentioned in the Mabinogion, the collection of tales of early Welsh literature that intertwines myths, folklore, tradition and history. The story of the 'Tides' tells of a log which used to block a holy well and became covered in filth and mud. The Tyrigs used to stand on the log and it drifted out every fourth tide. However, it always found its way back, completely cleansed. According to local folklore the sides of Monksditch, the 13th Century drainage ditch probably constructed by the monks at Goldcliff, are laced with smuggler's brandy.

The Artistic Landscape

2.4.12 The favourite subject of the prolific English landscape and topographical artist Henry Gastineau (1791–1876) was coastal scenery. Gastineau produced a series of water-colour paintings of views in the Mathern and Caldicot Levels for *'Wales Illustrated'* (1830-1831). These included *'Caldicot Castle, Caldicot Level, Monmouthshire'* (a distant view of the castle with sheep and cattle by a brook in the foreground); *'Mathern, from St. Pierre Pill, Monmouthshire'* (a view across fields to the village of Mathern near Chepstow); *'Mathern Palace, Monmouthshire'* (a view of the mediaeval bishop's palace near Chepstow with cattle in the foreground); and *'Sudbrook Chapel on Caldicot Level, Monmouthshire'* (a view of the chapel ruin on the estuary).

2.4.13 Contemporary artists have also been inspired by the scenery of the Gwent Levels. For example, oil paintings of Wentlooge Level by landscape artist Peter Brown, produced in 2012 for an exhibition called 'Brown and Corsellis' at Cardiff's Albany Gallery, capture views of reed-fringed reens within the pastoral landscape.

2.4.14 The River Usk inspired the poetry of Paul Henry who lived in Newport, which is the subject of his 2005 poem 'Between Two Bridges' set against the backdrop of the Newport cityscape: "*Between two bridges I follow him…Past a wave sculpted in steel, a boat they found inside the mud and thought an ark to save the port… The cradle under the big bridge is a pendulum, marking time. It ferries its load, back and fore…The river shuffles on to the sea.*"

2.4.15 The rising and falling tides along the Gwent Levels' coastline were an inspiration to Anne Cluysenaar, a renowned Belgian born poet. Cluysenaar drew on the surroundings of her adopted home in Monmouthshire in poems such as *Timeslips* (1997), which reflected on slippages of time in landscape.

2.4.16 Born in St Brides Wentlooge in 1867, the actor Lynn Harding achieved international recognition in a 62 year career sharing stages with such greats as John Gielgud, Ralph Richardson and Anthony Quayle. Harding played Professor Moriarty in Sherlock Holmes, Bill Sykes in Oliver Twist on Broadway and Owain Glyndwr in Shakespeare's Henry VII on BBC Radio. Even at the height of his career, Harding frequently returned to his home village of St Brides, giving short performances in aid of various village affairs and local charities, especially those for poor children.

Public Perceptions of the Landscape

2.4.17 Feedback from the Living Levels community engagement process has been reviewed to gain an understanding of the public perceptions of the Gwent Levels landscape. From the range of comments received, it is evident that local people are extremely proud of and value their area. The feedback is summarised below in relation to the LANDMAP aspects:

- **Geological Landscape** – it is generally understood that fluvial and coastal processes are a key influence in shaping the Gwent Levels and making it a "distinctive and uncommon landscape".

- **Historic Landscape** – while there is a clear awareness of specific heritage features in the landscape, some people were unaware of the historic significance of the Gwent Levels landscape as a whole (e.g. "I have never heard it labelled as the Gwent Levels until now").

- **Cultural Landscape** – local people appear to have a deep affinity with the Gwent Levels landscape, as a place of memory and as a closely knit community (e.g. "I remember as a child building dens, jumping ditches and swinging in the withy trees"). Access to the Gwent Levels via public rights of way for horse riding, rambling, cycling, running and dog-walking is highly valued (e.g. "very easily accessible" and the "cycling is the best in the country").

- **Landscape Habitats** – the importance of the Levels as a sanctuary for wildlife, and as a place where people can reconnect with the natural environment and learn about wildlife, is widely understood and valued by the community (e.g. "incredible we have this nature on our doorstep" and "the best thing is to have space to explore and be closer to nature").

- **Visual and Sensory** – the changing light, fresh air and open skies of the Levels is widely valued by the public, as are the opportunities afforded for a tranquil, peaceful escape from busy city life (e.g. the Gwent Levels are "only a few miles from Newport but it's a different world!" and they are "romantic, beautiful and natural").

Forces for Landscape Change

2.4.18 The principal cultural forces for landscape change are explored below, along with key considerations for how these changes can be managed to conserve and enhance the distinctive landscape character of the Gwent Levels. The principal forces for landscape change from cultural activities relate to:

- Management of the drainage system
- Management of flooding and adapting to climate change
- Changes in agricultural land management practices
- Expansion of settlements and new built development
- Sustainable uses of historic farm houses and farmsteads
- Infrastructure development and improvements (roads and energy)
- Development of leisure and recreational facilities

Management of the drainage system

2.4.19 The extensive network of field drainage ditches and reens are one of the most distinctive landscape features of the Levels, and are also of high biodiversity value. These watercourses are vulnerable to neglect through lack of appropriate maintenance, changes in drainage and land use.

2.4.20 The historic role of governance of the drainage system was an important factor in shaping and reinforcing landscape characteristics over time. Throughout the Gwent Levels, it was the farmers working in partnership with the Caldicot and Wentlooge Internal Drainage Board who were responsible for maintaining the system of reens and ditches

which makes the area habitable for people and wildlife.

2.4.21 The Caldicot and Wentlooge Internal Drainage Board's responsibilities were transferred to NRW in 2015. NRW is now responsible for maintaining the c.64 km of main reens and c.137km of lesser reens within the new Caldicot and Wentlooge Internal Drainage District that covers the Gwent Levels. In addition, NRW maintain the main rivers - the embanked natural watercourses, such as Monksditch and Elver Pill Reen, whose banks are raised during periodic cleaning. The remaining c.1200km of field ditches that criss-cross the Levels are maintained and funded by individual landowners.

2.4.22 Following the transfer of the Internal Drainage Board's responsibilities to NRW, there is potential for loss of local expertise and traditional water management practices needed to sustain this unique landscape and its nationally important wetland habitats.

2.4.23 The earthworks associated with the embanked natural watercourses and artificial reens are major historic features within the landscape, and are vulnerable to damage. In places such as Monksditch near the Whitson sub-station and the north end of Blackwall in Magor, the reen sides are revetted by stone walls and timber facings, which are also vulnerable to change. The continued management of this system is critical to ensure that different types of historic features are protected for the future.

2.4.24 Water levels in the reens are managed by pens known as "stanks", and these brick and concrete structures remain an important feature of the Levels and need to be properly maintained. Another important and increasingly rare feature, are the "walls" which seem to have been low earth banks built on the uphill or seaward side of those reens dug to drain the back-fen. The lines of pollarded willows planted to strengthen the bank sides of reens are an important part of the historic landscape as well as of ecological importance, and are vulnerable from a lack of management and neglect.

2.4.25 The Gwent Levels SSSI is under threat from scrub encroachment along the field ditch and reen edges, especially where on both sides, which is shading out features of conservation interest such as aquatic plants. Traditionally, the ditches would have been kept open as wet fences to keep stock in, with occasional pollarded willows planted to help strengthen the banks. The dominance of double hedged ditches and reens is increasingly threatening not only biodiversity, but also the ability of the drainage system to work and drain the land and protect it from flooding.

2.4.26 The field ditches maintained by individual landowners are vulnerable to loss as larger fields are created from several smaller ones. For example, in the remaining agricultural areas of the Caldicot Level, 18% of the boundaries that existed during 1886 have been lost, while in Wentlooge Level the figure is 40%. The lowest tier of the drainage hierarchy, surface ridging, is the most vulnerable of all. This consists of the "grips", skilfully created by hand digging or ploughing. These slight and fragile earthworks are vulnerable in fields that are underdrained and ploughed.

2.4.27 Stone, brick, concrete and wooden bridges over the watercourses all survive, but many are in decay or have collapsed and, as a result, the integrity of the public footpath network is affected in places.

Management of the drainage system - key considerations

Key considerations associated with management of the drainage system as a distinctive landscape feature of the Levels include the desirability of:

- Conserving the traditional open character and wildlife value of field ditches and reens, and their associated historic grip

surface drainage and headland features, aiming to increase their connectivity with core sites of ecological interest.

- Active management of scrub to reduce the dominance of double hedged ditches and reens.
- Increasing grassland strips along field drains and watercourses in areas of arable land to capture sediment and nutrients.
- Conserving and enhancing riparian habitats associated with ditches, reens and wetlands, timing dredging and reed cutting operations to avoid the nesting season of breeding birds.
- Working in partnership with farmers to encourage environmentally sensitive land management practices that harvest and conserve water, and prevent pollution of watercourses by creating buffer areas between points of potential diffuse fertiliser applications/nutrient inputs and sensitive riparian habitats.
- Maintaining water levels to protect as yet undiscovered buried archaeology.

Management of flooding and adapting to climate change

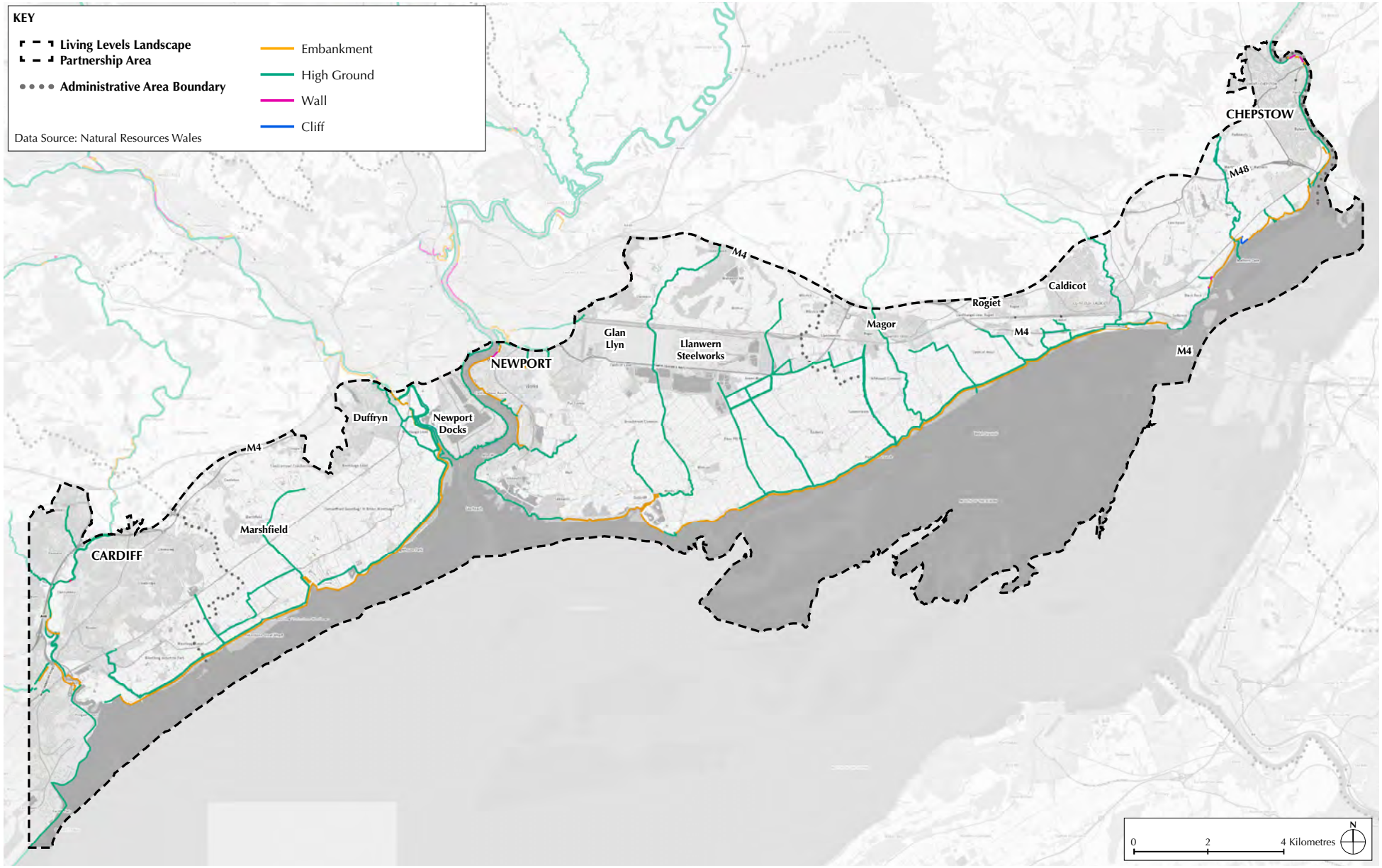
2.4.28 The sea wall/embankment and network of main rivers and reens are an important part of the existing flood defences within the study area as shown on **Figure 2.7**. A number of historic flood events on the Gwent Levels are embedded in local memories; a plaque on the outer wall of the Church of St Thomas the Apostle in Redwick commemorates the great flood of 1606 when many thousands of people and animals died: other examples can be seen on churches in Goldcliff and Peterstone.

2.4.29 Strategies for management of flood risk within the Gwent Levels have been developed by NRW in plans for the South East Valleys catchment (covering Wentlooge Level), the Usk catchment (covering Caldicot Level) and the Severn Vale catchment (covering Mathern Level). Together with the Severn Estuary Shoreline Management Plan, these plans recognise the outstanding historic landscape significance and high nature conservation value of the Gwent Levels, and the fundamental role that water management plays in sustaining these interests.

2.4.30 The whole drainage system in the Levels relies upon the sea wall. Historically the wall has retreated, with much of its present line dating from the late medieval period. In a total length of c.35km, there are many different styles and dates of wall which have been steadily improved and modified over the years. Recent improvements to raise and strengthen the sea wall have produced a much more standardised structure hiding the existing complexities, which make the short lengths of relict sea wall at Rumney Great Wharf, Peterstone Gout and alongside Collister Pill even more valuable. The traditional practice of using the saltmarsh beyond the sea wall for summer grazing assists in maintaining the diversity of the plant communities, but is now only continued by two farmers on the Wenthooge Level.

2.4.31 There is increasing evidence to suggest that rising water levels, both tidal and river (fluvial), are threatening the roosts of the Severn Estuary's waterfowl and waders, causing the phenomena of 'coastal squeeze'. In the future, it may become increasingly necessary to manage and plan for a changing coastline by developing robust networks of semi-natural wetland habitats (intertidal habitat, marshes and inland lagoons) with the potential to reinforce landscape character, increase opportunities for biodiversity and making the coast more resilient to flooding from the sea. The current Severn Estuary Shoreline Management Plan considered the feasibility of managed retreat along the Severn Estuary, but identified limited opportunities for such measures along the Gwent

Figure 2.7 Flood Defences



Levels coastline. In addition, peat deposits and wetland habitats, as well as the estuarine muds, soils and habitats, can store and sequester large quantities of carbon.

2.4.32 Seasonal and unseasonal flooding, affected by the changing climate, presents a challenge to the agricultural productivity of the area, to some of the species and habitats present and to some homes and livelihoods. Conversely, drought sometimes also challenges farming and wildlife that depends on presence of water.

2.4.33 Recent work has shown that the Levels are particularly rich in buried archaeology, of national and international importance, both in the intertidal zone and inland of the sea wall. Over most of the Levels, prehistoric and Roman landscapes are sealed by later alluvium. Because of the depth of this alluvium even the most advanced methods of non-intrusive archaeological investigation cannot identify such sites without excavation, making them very vulnerable to loss through ignorance. However, this blanket of alluvium, and the resulting waterlogged conditions, gives rise to excellent preservation of archaeological deposits. Any disturbance of the alluvium, or lowering the water-table, threatens to alter these conditions.

Management of flooding and adapting to climate change - key considerations

Key considerations associated with management of flooding and adapting to climate change in the Levels include the desirability of:

- Ensuring that flood risk and shoreline management plans continue to recognise the outstanding historic landscape significance and high nature conservation value of the Gwent Levels, and the fundamental role that water management plays in sustaining these interests.
- Working in partnership with all those with a stake in the long-term sustainability of the area to develop consensus around approaches to addressing the challenges of climate change, and its environmental and economic consequences.

Changes in agricultural land management practices

2.4.34 As shown on **Figure 2.8**, the Gwent Levels is predominantly under agricultural land use. The activities of the agricultural sector are therefore a key influence on the character of the landscape. Despite the urbanising influences of settlement encroachment, industrial land uses and transport/energy infrastructure, most of the Gwent Levels landscape still has a largely rural, pastoral character.

2.4.35 As a result of the soil quality, favourable climate and the availability of water, the area has very high yielding pasture and lush meadows that produces notable volumes of meat and dairy produce. However, much agricultural activity is dependent on the management of water levels and flooding and a fragile balance between water and farming exists. The majority of the Gwent Levels are generally of low quality agricultural land (Agricultural Land Classification Grade 4) due to the combination of heavy textured subsoils and poor drainage. There are also some pockets of higher quality agricultural land which support arable fields in drier areas.

2.4.36 Over the years, there has been a slow but significant shift from traditional farming practices to more intensive agricultural regimes. There has also been a fragmentation of farm businesses, which has given rise to the problem of dispersed or disconnected land holdings seeing pressure to infill ditches to allow for modern farming. There are also increasing numbers of smallholders with holdings typically less

Figure 2.8 Land Use

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

than 10ha whose main income is not farming, but who use the land for horses, other livestock or amenity reasons. Neither type of land owner fit well into current agri-environmental schemes.

2.4.37 A lack of responsibility of land owners to manage the field ditch edges threatens the whole area due to flood risk through scrub encroachment and ditch blocking by trees. The threat comes from changes in livestock that is not local to the area and not knowledgeable about wet fences, and changes in owners of land who do not realise their responsibilities. In addition, slurry storage and fly tipping are challenges for water quality improvements on the Levels. Fly grazing and overgrazing on the saltmarsh beyond the sea wall on the Wenthooge Level is having a negative effect on the botanical and ecological interest of the intertidal areas. Overgrazing is also an issue on common land within Wenthooge Level, such as Peterstone Great Wharf.

2.4.38 There are a number of remnant orchards on the Caldicot and Wentlooge Levels that were once a more typical landscape feature of the Gwent Levels. However, the end of cider making locally means that most orchards are no longer commercially viable. Land primarily managed for nature conservation is also a notable land use within the Levels. Conservation initiatives that seek to secure the future ecological value of the Gwent Levels through engagement with farmers to promote environmentally sensitive land management and drainage practices have helped maintain and create habitats upon which many of these species depend. Parts of the area are also managed by nature conservation bodies, such as the Newport Wetlands Nature Reserve (NRW and RSPB) and the Magor Marsh Nature Reserve (GWT).

2.4.39 Changes in agri-environmental schemes and agricultural subsidies are significant drivers with the potential to alter the balance and quality of land uses and sensitive landscape elements within the Gwent Levels' landscape, including fragmentation of ecological networks and damage to important historic landscape features.

Changes in agricultural land management practices - key considerations

Key considerations associated with changes in agricultural land management practices that could influence the Gwent Levels' distinctive landscape character and biodiversity value include the desirability of:

- Protecting the pattern and function of field ditches and grips with reens, wetland habitats and meadows supporting large and characteristic populations of birds and invertebrates, and other biodiversity.
- Preserving for future interpretation the area's archaeological resources, historic features and geological interests from damage and loss, directly and by maintaining high ground-water levels reducing soil desiccation and further benefitting wetland ecology.
- Maintaining the strong sense of tranquillity, wildness and remoteness, traditional grazing and hay production, and distinctive skylines and big skies; with the predominantly undeveloped, pastoral landscape underpinned by a viable and vibrant agricultural community and economy.
- Promoting and maintaining extensive management of wetland habitats and grasslands to allow for greater floristic diversity and biodiversity, particularly alongside drains and ditches.

- Identifying opportunities for enhancing the biodiversity of arable habitats by managing arable field margins and buffering existing trackways and track verges to reduce the impact of fertiliser or herbicide use.

- Conserving and enhancing the character and connectivity of meadows, wetland and meadow habitats developed as part of wider landscape-scale habitat re-creation initiatives.

- Identifying opportunities to extend and connect ecological habitats along embankments, ditches, roads and droveways, giving priority to corridors that link existing core habitats such as ditches, wet grasslands, reedbeds and lagoons and sites of ecological interest on the fringes of the Gwent Levels.

Expansion of settlements and new built development

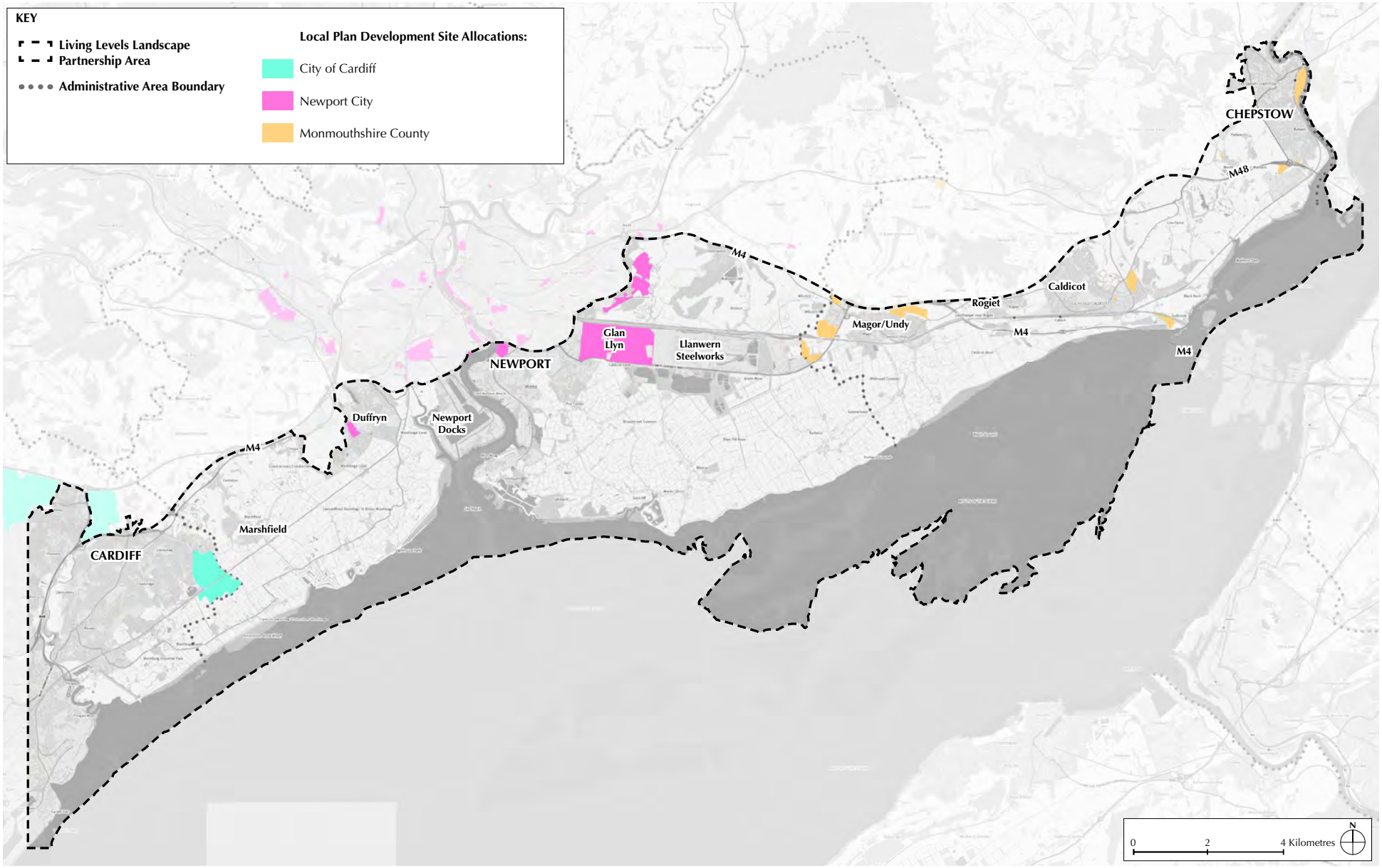
2.4.40 Detailed analysis of the potential impacts of new development and infrastructure on the Gwent Levels landscape is beyond the scope of this Study. With the exception of national infrastructure projects that are subject to the policies and decision-making of the Welsh Government, the Monmouthshire, Newport and Cardiff Local Development Plans set out policies for guiding development and land use change within the study area in accordance with the national Planning Policy for Wales.

2.4.41 Extensive urban land uses have encroached onto the Gwent Levels during the 19th and 20th centuries (see **Figure 2.8**), and there remains continued pressure for residential, industrial and commercial development around the edges of the Levels – all key components in driving a buoyant local economy.

2.4.42 Over the last 50 years or so, there has been considerable loss of the historic Gwent Levels to urban development leading to fundamental landscape changes as its traditional rural open character is fragmented and diluted in places. By 1995, c.50% of Wentlooge Level had been developed (for the Tesco Warehouse, Cleppa Park, Celtic Lakes, Tredegar Park and the Springs developments) and c.30% of Caldicot Level had also been developed (for the Llanwern Steelworks, Gwent Europark, Uskmouth Power Station and the Aluminium and Chemical works), which together led to the loss of 910ha of wetland habitat.

2.4.43 This trend has continued where Local Development Plans allocated sites for residential and commercial development on the Levels, such as the Pwll-Mawr Business Park on Wentlooge Level east of Cardiff. In some places, remnants of the Levels historic landscape pattern can be found within these areas of built development where open ditches and reens have been retained. In other places, the network of ditches and reens has been lost as visible features within the built development.

Figure 2.9 Local Plan Development Sites



2.4.44 As shown on **Figure 2.9**, the local planning authorities' current Local Development Plans allocate sites for residential and mixed use development around the fringes of existing settlements within the Gwent Levels. The largest development on Caldicot Level in Newport is the Glan Llyn site on previously developed land that was part of the Llanwern Steelworks. Greenfield sites for residential and commercial development are also allocated on the Levels, particularly around the fringes of Cardiff, but also around the fringes of Chepstow and the Severnside settlements in Monmouthshire. Many of these sites include land with the Gwent Levels SSSI.

Expansion of settlements and new built development - key considerations

Key considerations associated with settlement expansion in terms of its relationship to the landscape setting of the Gwent Levels include the desirability of:

- Working towards creation of strengthened landscapes on the fringes of Cardiff and Newport (Glan Llyn) where urban development is planned, which draw on and reflect the existing positive character features and elements to more effectively integrate areas of major new development into the Gwent Levels landscape.
- Identifying and conserving any existing remnant historic landscape features on the fringes of settlements, such as smaller pastures, open field ditches/reens, orchards and green lanes, and incorporating these within proposed green infrastructure networks.
- Integrating new development (together with associated infrastructure in the form of lighting, signage and fencing) with existing tree belts where feasible.
- Integrating the rears of new residential development (houses, back gardens, outbuildings and fences) in middle distance views across fields with carefully-sited tree planting using locally appropriate native species (such as willow, ash, oak and apple), particularly where there is an existing linear settlement pattern.
- Conserving the quality and rural character of village gateways to maintain the typical low-key, subtle transition from rural to village landscape through use of carefully-sited tree planting using locally appropriate native species.

Sustainable uses of historic farm houses and farmsteads

2.4.45 The character of the Levels is strongly influenced by historic settlement patterns, buildings and structures, which will only be maintained if these are retained in sustainable uses. Historic farm houses and farm buildings are threatened where landholdings are combined or abandoned by new institutional owners. Groups of farm buildings, often associated with clusters of trees as windbreaks, are a particular focus in views across the open landscape of the Levels, and many of these farmsteads have potential for expansion and/or conversion for agricultural or other residential and/or commercial uses.

Sustainable uses of historic farm houses and farmsteads – key considerations

Key considerations associated with integrating new farm development into the landscape setting of the Gwent Levels include the desirability of:

- Conserving the scale and proportion of farmsteads within the context of the surrounding large-scale landscape; farm buildings are typically seen in conjunction with groups of mature trees and are often perceived as tree clump 'islands' within an otherwise open landscape. In some areas, farmsteads are associated with linear shelterbelts. New large-scale agricultural buildings need to be carefully integrated within these existing landscape patterns and associated with tree planting which extends the existing pattern of tree groups and belts and provides a backdrop to views from public roads and footpaths.

- Minimising visible changes to the surrounding agricultural landscape, as land use changes (such as the introduction of garden boundaries, lighting and other suburban features) have the potential to be more visually intrusive than built development in this large-scale landscape mosaic.

- Integrating new large-scale agricultural buildings in the open landscape by careful choice of form, orientation and colour of buildings. Whenever possible, new agricultural buildings need to relate to an existing cluster of buildings and to existing groups of mature trees which can provide a backdrop to views.

Infrastructure development and improvements (roads and energy)

2.4.46 Large-scale infrastructure is a typical feature in many parts of the study area. The historic relationship between the Gwent Levels and its hinterland has been significantly disrupted by modern railway, motorway and industrial infrastructure, which creates a perception of the Gwent Levels as a somewhat 'hidden' landscape. The Levels has also become cut off and isolated by the industrial infrastructure around Newport Docks and Uskmouth Power Station, and by the Llanwern Steelworks and the adjacent Solutia Works.

2.4.47 While a key component in helping sustain the national economy, the Welsh Government's proposals for the M4 around Newport (see **Figure 2.10**) are likely to exacerbate this situation and present a significant challenge for protecting the integrity of the historic landscape, biodiversity and sense of tranquillity. Nationally significant infrastructure projects include two proposals for tidal lagoons schemes, which would present significant changes to the existing seascape character of the Severn Estuary within the study area. Wind turbines are also a distinctive, frequent and highly visible form of renewable energy infrastructure on the Levels, and proposals for large-scale photo voltaic arrays in 'solar farms' can have potentially significant landscape and visual effects where poorly designed or sited.

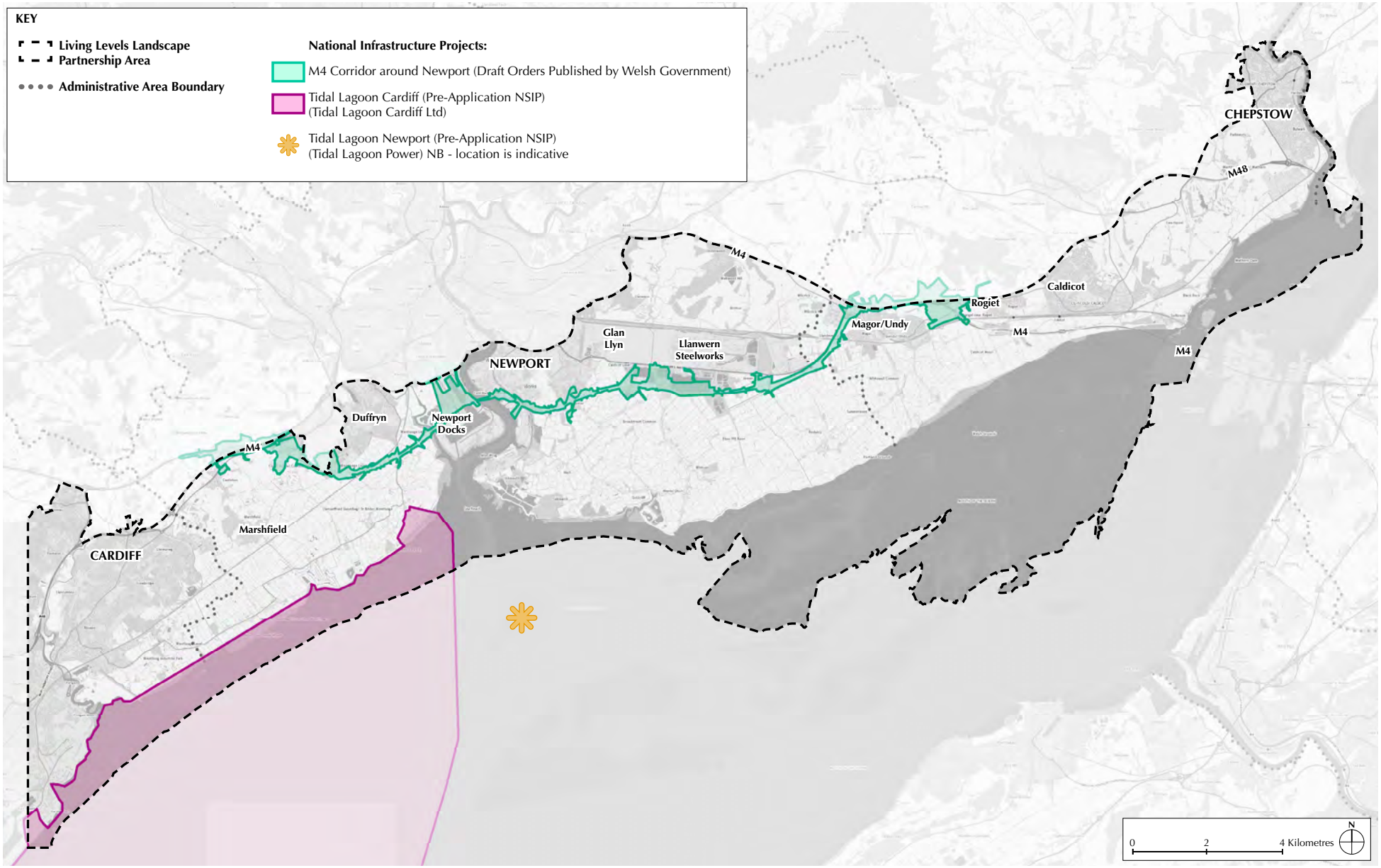
2.4.48 The towers of the 133kV overheard electricity transmission lines marching across the landscape are also prominent features of the Levels. Abrupt engineered embankments associated with drainage, local roads and utilities infrastructure, are also a typical feature in many parts of the study area. In some places, the approach has been to avoid integration of infrastructure, which can serve to draw attention to these features in the open landscape.

Infrastructure development and improvements (roads and energy) - key considerations

Key considerations associated with integrating existing and new infrastructure into the landscape setting of the Gwent Levels include the desirability of:

- Extending existing patterns of tree clumps and belts, where present, with new planting that is carefully designed to screen the abrupt embankment slopes that are associated with new infrastructure such as roads; in open landscapes, it may be more appropriate to avoid screen planting.
- Seeking opportunities to create grassland habitats on existing road verges, bare ground and newly constructed embankments, to provide valuable ecological corridors for pollinators and invertebrates through an intensively farmed landscape.
- Integrating new road developments or altered alignments with the existing distinctive patterns of roads and droveways as far as possible.
- Carefully-sited tree planting using locally appropriate native species alongside new or altered roads in places to reduce the perceived scale of road developments, integrate with the existing network of rectilinear boundaries and add variety to local views.
- Environmental compensatory measures to mitigate unavoidable residual adverse impacts of major infrastructure projects, such as the construction of new reens, ditches and reed beds, which can have potential archaeological impacts.

Figure 2.10 National Infrastructure Projects



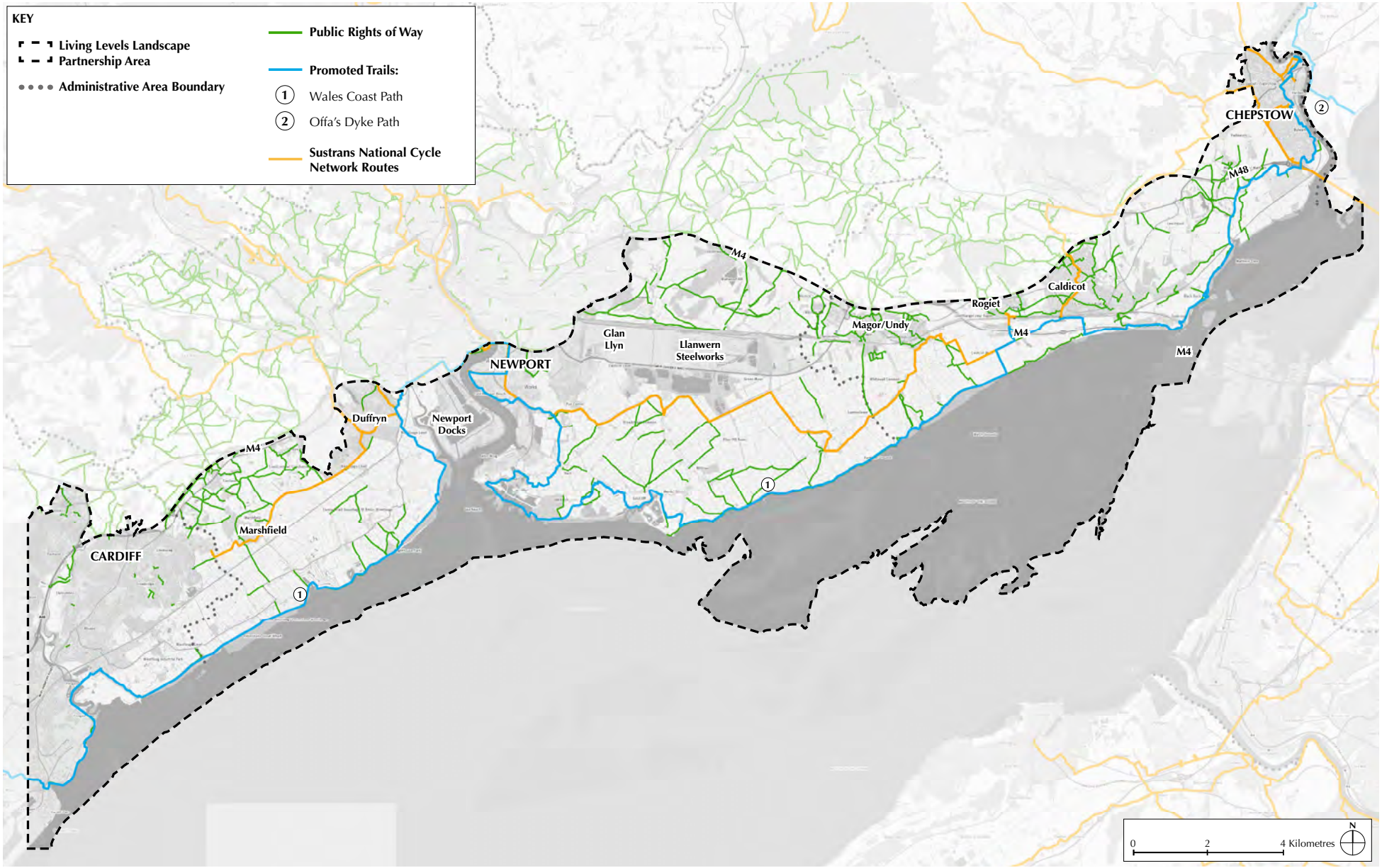
Development of leisure and recreational facilities

2.4.49 The existing access and recreation facilities within the study area are shown on **Figure 2.11**. There are a range of opportunities to develop improved facilities for access and recreation for encouraging people to access, appreciate and enjoy the Gwent Levels' landscape, history and nature. Footpaths, cycleways and interpretation signage need to be sensitively designed, but can be accommodated in all the landscapes within the study area.

Development of leisure and recreational facilities – key considerations

Key considerations associated with integrating the development of leisure and recreational facilities into the landscape setting of the Gwent Levels include the desirability of:

- Sensitive routing of footpaths and cycleways in relation to habitats of high biodiversity value for birds to minimise disturbance.
- Carefully-sited tree planting using locally appropriate native species to screen and soften the visual impact of prominent large-scale development of leisure facilities in the long, open views that are typical of this landscape, particularly where associated with the bustle, colours and movement of cars and caravans; and integrating such development within local landscape patterns and boundaries and taking opportunities to create a range of inter-connected habitats which contribute to existing ecological networks.
- Seeking opportunities to develop local circular walks and viewpoints, which reduce the perceived scale of the landscape and provide local destinations on the doorsteps of urban communities within the countryside close to where people live.
- Seeking registration for droveways that are rights of way through use to preserve them from privatisation and development.



- Providing new or managing existing small car parks at known starting points for walks to encourage their use, avoiding the erosion of verges as a result of casual car parking on narrow roads and minimising large-scale car parks and leisure facilities within areas that could diminish the special qualities of the distinctive landscape.

- Seeking opportunities for permissive access, particularly in areas that are close to settlements, public rights of way, viewpoints or heritage features, including archaeological sites.

2.5 Landscape Habitats

2.5.1 LANDMAP generally defines Landscape Habitats as the semi-natural habitats and vegetation cover that influence landscape and biological diversity, land cover and the way that land is used and enjoyed at a broad landscape-scale. This section presents an overview of Landscape Habitats in the Gwent Levels, identifying the special features of the extensive designated sites of European, national and local importance and value for wildlife.

2.5.2 The Gwent Levels is home to a rich assemblage of wildlife. The exceptionally high productivity of the alluvial soils has been a catalyst for on-going investment in drainage and agricultural improvement within the Levels since Roman times. The predominant semi-natural habitats are the extensive network of reens and ditches, which have become valuable remnant wetland habitats providing a refuge for rare and endangered wetland species. The diversity of habitats and the wide range of ecological niches is dependent on sustaining the traditional management of the reens and ditches. The inter-tidal habitats of the Severn Estuary and the riparian habitats of the Rivers Wye, Usk and Rhymney are also important areas for biodiversity within the study area.

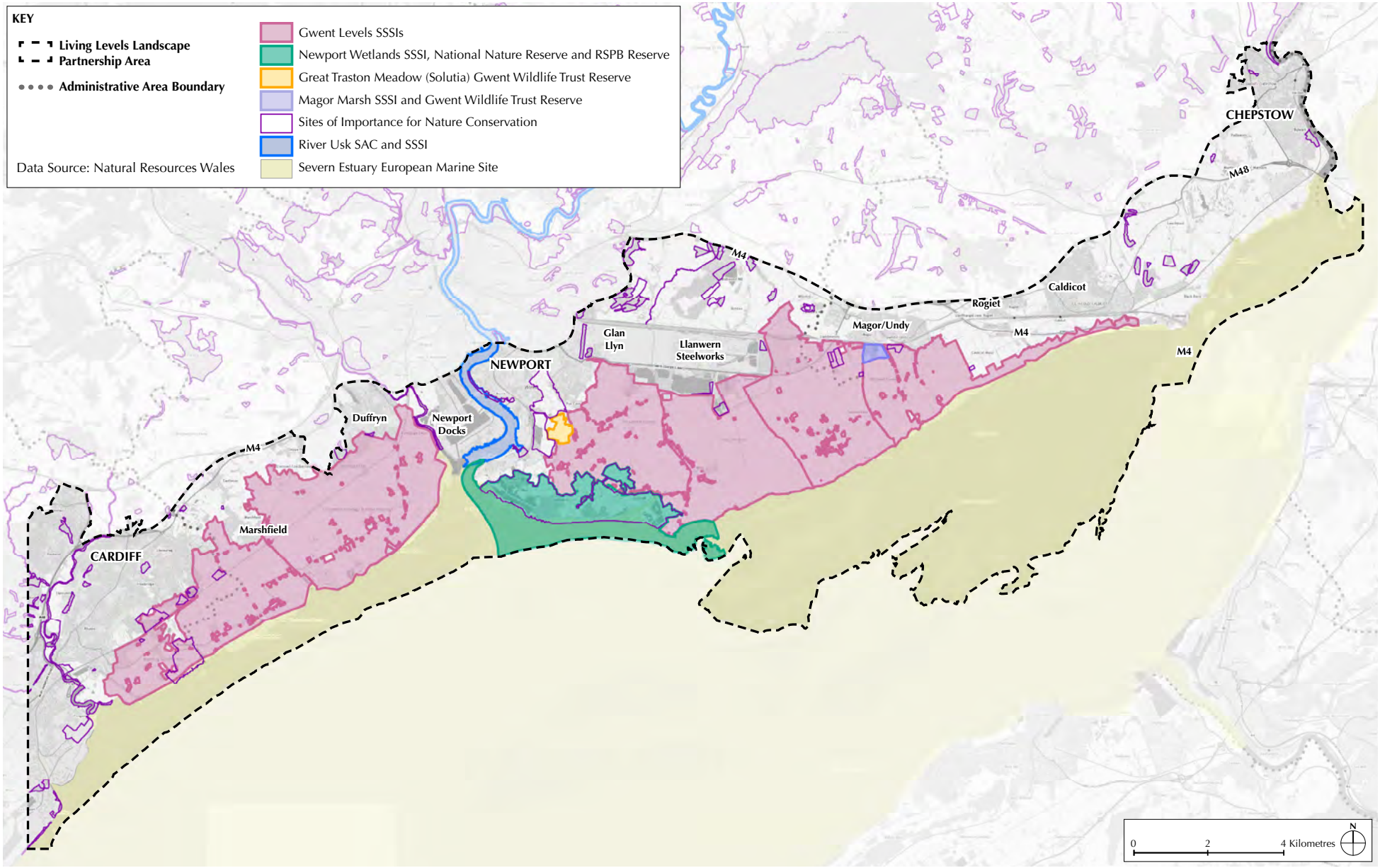
2.5.3 In 2016, a breeding pair of common crane reintroduced onto the Somerset Levels across the Severn Estuary by the Great Crane Project successfully raised a fully-fledged chick on the Gwent Levels – thought to be the first for some 7,600 years.

2.5.4 As shown on **Figure 2.12**, the majority of the study area is designated as being of European, national and local nature conservation importance and value. The special features of these designations are summarised below (full details can be found in the GI Strategy).

2.5.5 Much of the Gwent Levels is covered by six nationally designated Sites of Special Scientific Interest (SSSI). The Gwent Levels SSSIs include the Rumney and Peterstone SSSI on the western part of Wentlooge Level; the St Brides SSSI on the eastern part of Wentlooge Level; the Nash and Goldcliff SSSI on the western part of Caldicot Level; the Whitson SSSI and the Redwick and Llandevenny SSSI on the central part of Caldicot Level; and the Magor and Undy SSSI on the eastern part of Caldicot Level. The special features common to all of the SSSIs are reen and ditch habitat; insects and other aquatic invertebrates; and the shrill carder bee. The reens and ditches within the Gwent Levels support a wide range of aquatic plants, including many rare or scarce species, which in turn support a wide variety of other wildlife. There is a diverse community of insects and other invertebrates (for example, water beetles) inhabiting the reens and ditches. The assemblage of water beetles found across the Gwent Levels is unique in Wales and includes the great silver beetle, which is found nowhere else in Wales and is restricted to only a few other sites in southern England. The annually mown ditch banks and rough grassland areas provide habitat for the shrill carder bee, as they contain the flowers preferred by the bee for sources of nectar and pollen, such as red clover, creeping thistle and black knapweed. The reens and ditches also provide habitat for protected species including otter, water vole, grass snake and amphibians.

2.5.6 Located on the western edge of Caldicot Level, the **Newport Wetlands SSSI, National Nature Reserve and RSPB Centre** is of importance for its bird species. The Newport Wetlands Reserve is owned and managed by Natural Resources Wales, apart from the Centre and a small area of land surrounding it which is managed by the Royal Society for the Protection of Birds (RSPB). The special features of this relatively extensive area of newly created wetlands, constructed as compensatory habitat for the Cardiff Bay Barrage, are its reens and ditches; reedbeds; higher plants; over-wintering birds; breeding birds; and insects and other aquatic invertebrates. The site supports nationally important numbers of shoveler and black tailed godwit, together with other over wintering species. During summer, the wet grassland, saline lagoons and reedbeds support a variety of breeding birds, including populations of avocet, redshank, lapwing, water rail, Cetti's warbler and bearded tit. The habitats also support a diverse assemblage of aquatic invertebrates and aquatic plants. Part of the Reserve lies within the Gwent Levels (Nash and Goldcliff) SSSI.

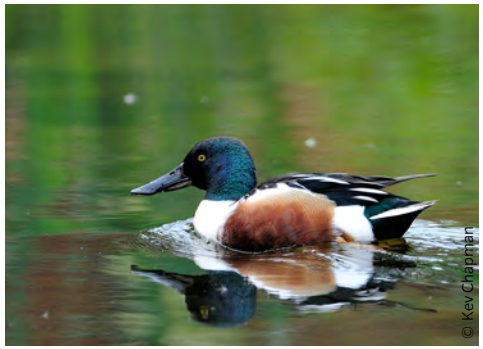
Figure 2.12 Ecological Designations



2.5.7 The **Great Traston Meadows Nature Reserve** is located to the north of Newport Wetlands near Pye Corner. It is owned by Eastman and managed by the Gwent Wildlife Trust. The main habitat is grazing marsh, with associated ditches, reens and grips. Pollarded willows line many of the reens. The site is important for its diversity of wetland and grassland plants, breeding birds and invertebrates. Much of the reserve lies within the Gwent Levels (Nash and Goldcliff) SSSI.

2.5.8 Located on the eastern part of Caldicot Level, **Magor Marsh SSSI and Magor Marsh Nature Reserve** are the largest remnant of the formerly extensive peat fenlands near the Gwent coast. The Magor Marsh Nature Reserve is owned and managed by the Gwent Wildlife Trust. The special features of this relatively small site are its marshy grassland; neutral grassland; swamp; standing water; and wetland invertebrate assemblage. The site supports a variety of common reed, sedge and submerged and emergent aquatic plants. Areas of wet meadow and both willow and alder and carr woodland with an intersecting system of drainage ditches, reens and ponds are present. The site is an important breeding ground for water and marsh birds. The Nature Reserve comprises the Magor Marsh SSSI together with two additional blocks of land (Barecroft Common) within the Gwent Levels (Redwick and Llandevenny) SSSI.

2.5.9 As shown on **Figure 2.12**, the study area also includes a large number of **Sites of Importance for Nature Conservation** (SINCs). Examples of these local non-statutory sites include the **Afon Ebbw River SINC** (a major river system flowing into the River Usk south of Newport Docks with associated semi-improved neutral grassland and marshy grassland, swamp, scrub and semi-neutral woodland); the Solutia Site SINC (a series of improved and semi-improved grasslands with traditional ditches and ponds east of the River Usk in Newport); and the **Blue House Farm SINC** south of Magor (a botanically interesting tall mosaic of damp and dry grassland habitats enclosed by ditches and reens).



2.5.10 Within the study area, the **River Usk SAC and SSSI** runs through Newport to the confluence with the River Ebbw at Newport where it enters the Severn Estuary. The special features of the SAC are the presence of a range of fish species (including sea lamprey, brook lamprey, river lamprey, twaite shad, Atlantic salmon and bullhead) and otter. The special features of the SSSI are running water; otter; fish species; and a group of rare craneflies. Scarce higher plant communities at the river's tidal reaches are also of special interest. Although not a special feature of the designation, there is a good range of breeding birds associated with the riverine habitats. The SSSI designation includes some areas of adjacent habitat, such as woodland, marshy grassland, stands of tall herb, swamp and fen vegetation, saltmarsh and coastal grassland.

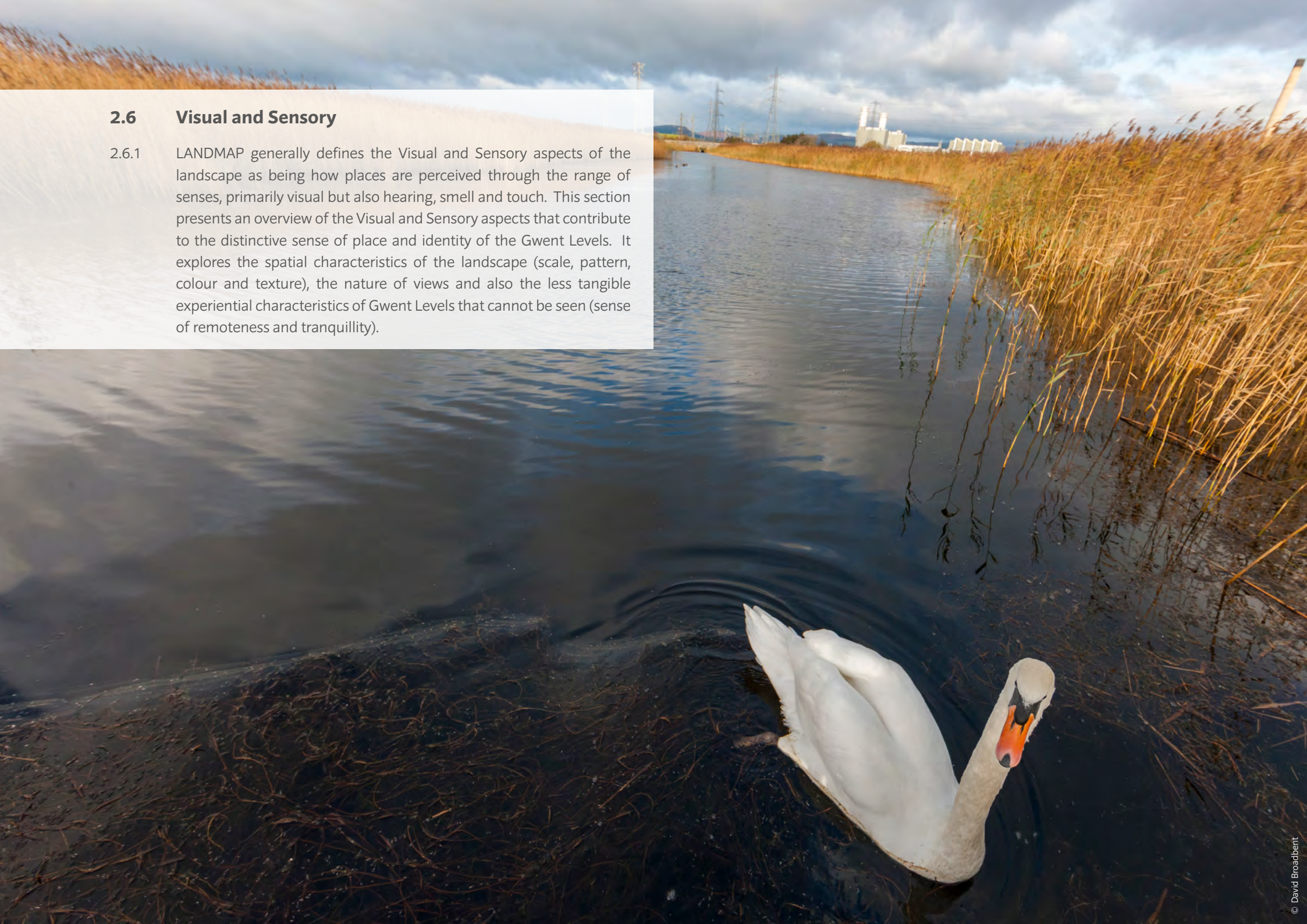
2.5.11 The **Severn Estuary European Marine Site** incorporates SAC, SPA and Ramsar site designations. The special features of the European Marine Site are the estuary; its subtidal sandbanks; intertidal mud and sand; atlantic salt meadow/saltmarshes; reefs; migratory fish (river and sea lamprey, twaite shad, salmon, eel, sea trout and allis shad) and assemblage of fish species; internationally important populations of migratory and wintering bird species; internationally important populations of waterfowl; rocky shores; and freshwater grazing marsh/neutral grassland. The River Severn is also designated as a SSSI, the special features of which are the estuarine fauna, which includes invertebrate populations of considerable interest in addition to the internationally important populations of wintering waterfowl and migratory fish. In addition, the estuary fringes including areas of saltmarsh supporting a range of saltmarsh types are also special features of the SSSI.

2.5.12 The designated sites and nature reserves form the core of the ecological network of wetland habitats that is crucial for the survival of many rare and endangered flora and fauna species. The ditches, wetlands and inter-tidal habitats are highly significant ecosystems, and

together these form an essential component of the range of ecosystem services provided for Gwent Levels as a whole. Conservation initiatives promoted by the RSPB, GWT and other local nature conservation bodies offer opportunities for public access, outreach and education environmental programmes that are inspiring the next generation to care for the future conservation of wildlife on the Levels.

2.6 Visual and Sensory

2.6.1 LANDMAP generally defines the Visual and Sensory aspects of the landscape as being how places are perceived through the range of senses, primarily visual but also hearing, smell and touch. This section presents an overview of the Visual and Sensory aspects that contribute to the distinctive sense of place and identity of the Gwent Levels. It explores the spatial characteristics of the landscape (scale, pattern, colour and texture), the nature of views and also the less tangible experiential characteristics of Gwent Levels that cannot be seen (sense of remoteness and tranquillity).



Sense of Place

2.6.2 First impressions of the Gwent Levels to some people are of an unassuming and relatively empty, flat and open agricultural landscape next to the Severn Estuary. The small number of dispersed rural villages and remote farmsteads within the Levels sit in the shadow of extensive urban areas (the cities of Newport and Cardiff, and the town of Chepstow and the 'Severnside settlements' in Monmouthshire), juxtaposed with major energy infrastructure (the Usk power station, high voltage power lines and the Llanwern Steelworks) and bypassed by busy transport routes (mainline railway, motorways and the Severn bridge crossings).

2.6.3 The former vast Llanwern Steelworks plant is in the process of being dismantled, but some substantial structures remain including large pylons and power lines. The mainline Swansea to London railway passes through the northern part of the Levels, with two lines of pylons running parallel to the railway. Development has encroached on the Levels, particularly industrial development around the main settlements, with associated traffic. Fly tipping and means of preventing it through bunds is apparent. The east of the Levels is subject to background noise from traffic on the busy M4 and M48 motorways.

2.6.4 On further inspection however the Gwent Levels is revealed to be an appealing and remarkable coastal landscape of high skies and low horizons. The pattern of linear rectangular fields is a distinctive element of much of this vast, open and extensive landscape, with a more sinuous pattern prevailing in some areas. The most distinctive feature of the Levels is the network of reed-fringed field ditches and reens that criss-cross the landscape like arteries, the primary feature of the complex drainage system constructed over many centuries. As illustrated on on **Figure 2.1** and **Figure 2.8**, the intricate network of watery ditches and reens appear like a dense grid of city streets, carrying water from the uplands safely out to sea in order to protect the reclaimed land from flooding.

2.6.5 Occasionally, the reens are associated with outgrown but often gappy hedges, pollarded willows or other field trees. In the area around Caldicot, intrusive lines of post and rail fencing are more common, particularly where the fragmentation of farmland has led to a rise in smallholdings and horsi-culture. Roadside reens are larger allowing open views across parts of the Levels, and are crossed with low timber bridges.

2.6.6 In the west, there are extensive views across the open landscape of Wentlooge Level towards the backdrop of hills to the north. Views from Wentlooge Level of the Severn Estuary to the south are blocked by the

5m high sea wall embankment. Where the Wales Coast Path follows the top of the sea wall, extensive views are possible for walkers eastwards across the Estuary towards England and westwards across Wentlooge Level. Open views are possible across agricultural parts of the area from the north as the Levels are less enclosed and allow views to the sea wall in places. The Severn Estuary itself is not visible but there is a feeling of openness and exposure. In the east, views are possible across Caldicot Level, and there are long, exposed and windswept views of the English coastline, the Severn Bridge and the Second Severn Crossing. There are also some fine farmhouses and buildings associated with the older villages, including small churches which act as minor landmarks. A significant number of power lines and pylons converge on the power station at Uskmouth, visually dominating the landscape on the western fringes of Caldicot Level.

2.6.7 Beyond the seawall, the vast mudflats, saltmarshes and open water of the Severn Estuary are fundamental to the setting and character of the Gwent Levels. This is a dramatic and dynamic seascape of big skies, a sense of light and panorama, including views of the two colossal white bridges spanning the silt-laden tides of the estuary. Its character varies

from day to day, and from season to season, and is much influenced by the considerable tidal range, ever changing light and weather conditions, and the effect of these on the texture and colour of the estuary itself; the dynamics of early morning sea mists which burn off to reveal the detail of the coast, or end of day spectacular sunsets, are one of the classic changes that evoke sensual and spiritual responses in many people. Others include the changing mood of the foreshore in response to weather and sky conditions as light reflects off open water and mudflats when the tide recedes; and the changing intricate pattern of the winding creeks and channels within the foreshore as high tides deposit sediment and new courses are continuously eroded by rivers. The expanses of windy saltmarsh and mud exposed at low tide are used by tens of thousands of migratory waders and waterfowl which arrive from Northern Europe each winter, roosting and feeding on the Estuary's saltmarsh and mudflats and filling the coast's cold air with raucous babble.

2.6.8 In summary, the key visual and sensory qualities that give the Gwent Levels its unique sense of place are considered to be:

- The low horizon, level topography and broad skies, often augmented by dramatic cloudscapes, sunsets and sunrises.
- Strong linearity and distinctive geometric pattern of enclosure, drainage, watercourses, lanes and historic route-ways.
- Distinctive drainage pattern of canalised rivers, drains, reens and ditches, accentuated by lines of pollard willows
- The sea wall, and banks carrying roads/droveways between farmsteads and villages, often form the only upstanding landscape features in some places.
- The large assemblages of waterfowl and waders that visit the coastal mudflats and wetlands, and the vast flocks - murmurations - of starlings gathering on the Levels in autumn and winter forming mesmeric and dramatic aerial displays.
- A sparse settlement pattern related to subtle topographical variations, the simple and utilitarian style of buildings often reflecting the functional nature of the landscape.
- In summer, a verdant and fertile landscape with lush vegetation across meadows and along watercourses; this contrasts with the often wild, bleak and sense of remoteness experienced on the Levels in winter.
- Vibrant cities and towns around the edge of the Levels reinforce its strong sense of tranquillity, remoteness and wildness away from human occupation in many places.

2.6.9 There are a number of distinctive places and destinations, key gateways and primary access routes that provide opportunities for people to engage with, experience and appreciate the special qualities of the Gwent Levels. For example:

Mathern Level & Hinterland:

- Wales Coast Path between Chepstow and Caldicot
- Severn Estuary
- Severn Bridge
- Second Severn Crossing
- Swansea to London Mainline Railway
- Black Rock and Sudbrook Point (on Wales Coast Path)
- Chepstow Castle (on Wales Coast Path)
- River Wye

- Mathern Village (on Wales Coast Path)
- Caldicot Castle Country Park

Caldicot Level & Hinterland:

- Wales Coast Path between Caldicot and Newport
- Severn Estuary
- Swansea to London Mainline Railway
- Caldicot Town
- Caldicot Rail Station (on Wales Coast Path)
- Caldicot Moor
- Rogiet
- Severn Tunnel Junction Rail Station (on Wales Coast Path)
- Magor/Undy
- Magor Marsh Nature Reserve
- Wilcrick Hill Fort
- Llanwern Park
- Llanwern Steelworks
- Redwick Village (link to Wales Coast Path)
- Whitson Village (link to Wales Coast Path)
- Goldcliff Village (on Wales Coast Path)
- Goldcliffe Pill (on Wales Coast Path)
- Newport Wetlands Nature Reserve (on Wales Coast Path)
- Newport Wetlands Centre (on Wales Coast Path)
- The East Usk Lighthouse (on Wales Coast Path)
- Great Traston Meadows Nature Reserve (on Wales Coast Path)

Newport & Uskmouth:

- River Usk
- Uskmouth and Severn Estuary
- Newport Docks (on Wales Coast Path)
- Newport Transporter Bridge (on Wales Coast Path)
- Newport City Bridge (on Wales Coast Path)
- Newport Riverside Park
- Newport Rail Station
- Newport Castle

Wentlooge Level & Hinterland:

- Wales Coast Path between Newport and Cardiff
- Severn Estuary
- Swansea to London Mainline Railway
- River Ebbw
- Sirhowy Valley Walk
- Tredegar House Country Park
- The West Usk Lighthouse (on Wales Coast Path)
- St Brides Village
- Lighthouse Park/Inn (on Wales Coast Path)
- Castleton Village
- Marshfield Village
- Peterstone Gout (on Wales Coast Path)
- Peterstone Great Wharf (on Wales Coast Path)
- Peterstone Village
- Hendre Lake near St Mellons
- River Rhymney (on Wales Coast Path)
- Rhymney River Walk

2.6.10 Opportunities to strengthen and enhance the character of these distinctive places and destinations, key gateways and primary access routes as an integral part of the Gwent Levels' green infrastructure network are highlighted in Section 3.0.

3.0 CHARACTER OF THE GWENT LEVELS LANDSCAPE

3.1 General

3.1.1 This chapter explains the approach to characterisation of the Gwent Levels landscape and provides descriptions of each landscape character area, identifying key qualities that are particularly sensitive to change and providing guidance for directing landscape change in ways that conserve and enhance the distinctive characteristics of the area. It also identifies opportunities for improving green infrastructure assets within each character area.

3.2 Characterisation Overview

3.2.1 Landscape characterisation is the process of identifying and describing variations in landscape character – the distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. Characterisation involves identifying landscape types and areas of similar character, classifying and mapping them and describing their character at a scale appropriate to the purpose of the study.

3.2.2 This study re-interprets and builds on existing landscape character assessments, LANDMAP data and other related information to provide a bespoke, local LCA of the Gwent Levels which fits within the hierarchy of current landscape characterisation work for each of the three local authorities within the study area. The characterisation process has been undertaken to a LANDMAP 'level 4 assessment' in terms of detail. The existing landscape character assessments within the study area are:

- Monmouthshire Landscape SPG – Volume 2: Landscape Character Assessment (2017)
- Newport Special Landscape Areas (2013)
- Cardiff Review of Landscape Character Areas (2008)
- Gwent Levels Historic Landscape Characterisation (undated)

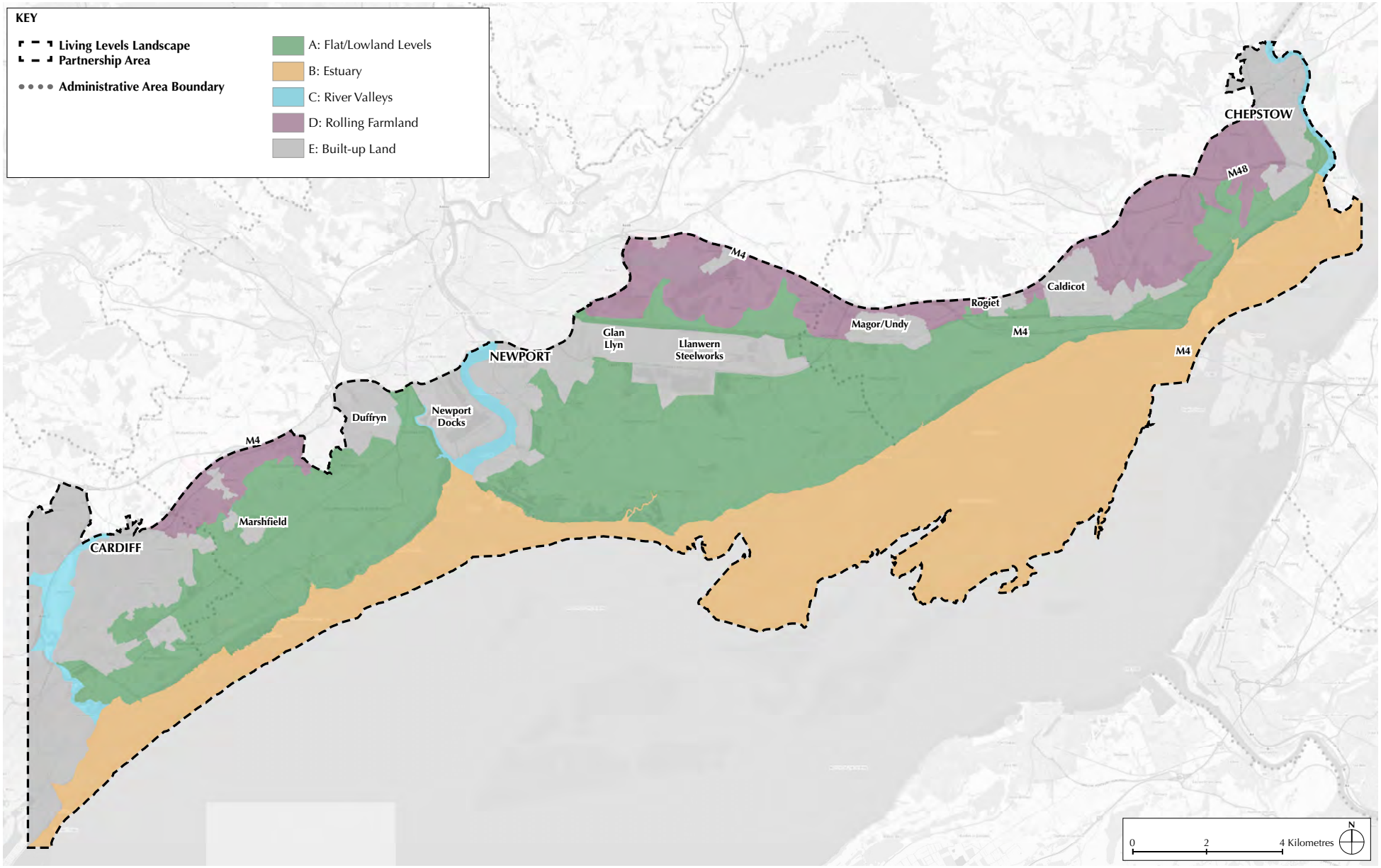
Landscape Character Types

3.2.3 Landscape Character Types within the Gwent Levels are shown on **Figure 3.1**. Landscape Character Types are generic types of landscape that may occur in different areas, with broadly similar and distinctive patterns of geology, topography, drainage, vegetation, historic land use, settlement and field shapes. The Landscape Character Types are:

- **A – Flat Lowland/Levels**
- **B – Estuary**
- **C – River Valleys**
- **D – Rolling Farmland**
- **E – Built-up Land**

3.2.4 The historic relationship between the Gwent Levels and the adjacent settlements of Cardiff, Newport, Magor, Rogiet, Caldicot and Chepstow has been significantly disrupted by modern railways, motorways and urbanisation. Despite the proximity of these major conurbations and large towns, today there are limited visual connections and cultural associations with the Levels, which create a perception of the Gwent Levels as a somewhat 'hidden' landscape.

Figure 3.1 Landscape Character Types



Landscape Character Areas

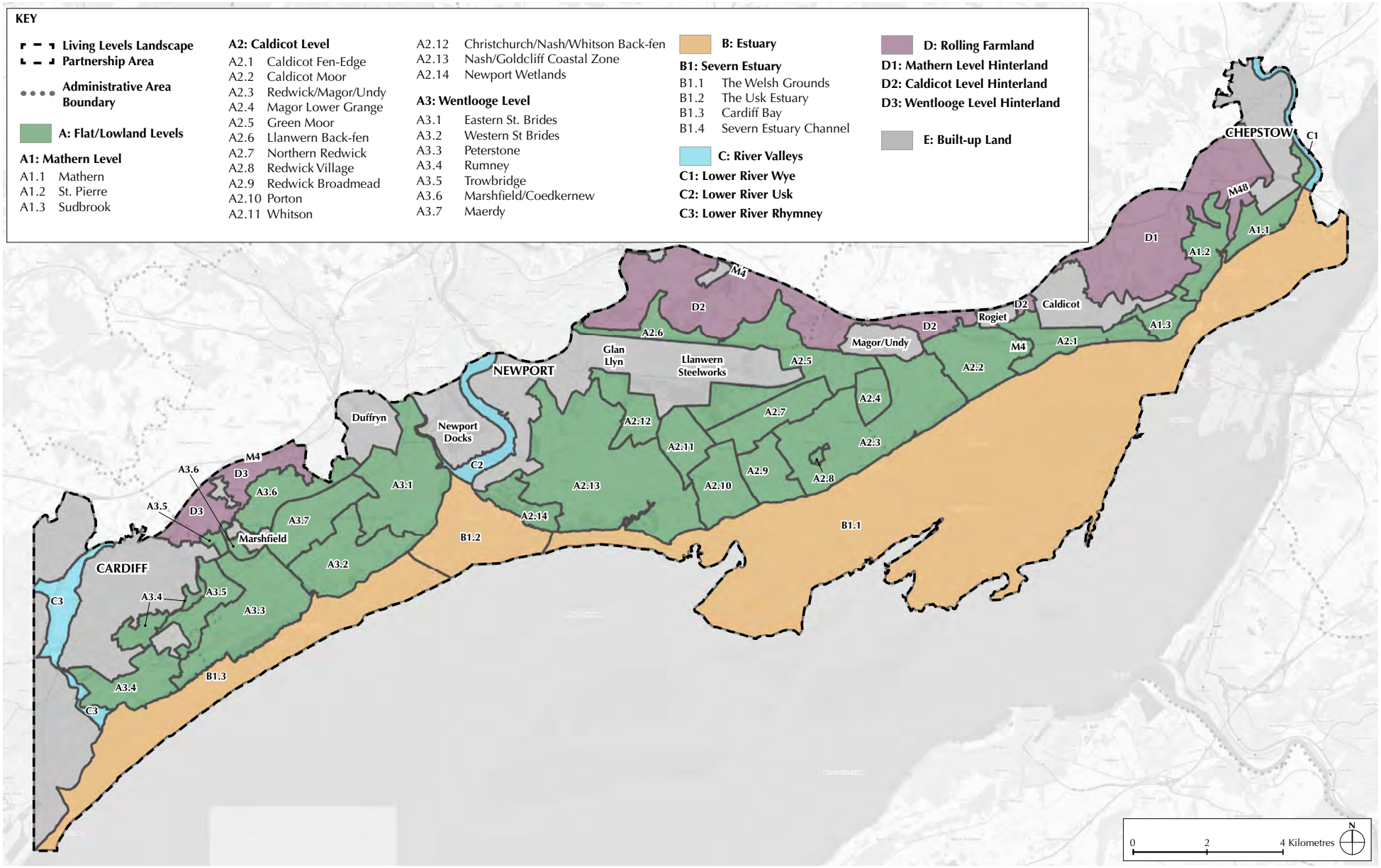
3.2.5 The Landscape Character Types within the study area are sub-divided into Landscape Character Areas as shown on **Figure 3.2**. Landscape Character Areas are unique and discrete geographical areas of landscape that share generic characteristics with other areas of the same type, but have their own individual distinctive characteristics/ qualities that give the area its particular identity and sense of place. The Landscape Character Areas identified within the study area are:

- **A1 – Mathern Level**
- **A2 – Caldicot Level**
- **A3 – Wentlooge Level**
- **B1 – Severn Estuary**
- **C1 – Lower River Wye**
- **C2 – Lower River Usk**
- **C3 – Lower River Rhymney**
- **D1 – Mathern Level Hinterland**
- **D2 – Caldicot Level Hinterland**
- **D3 – Wentlooge Level Hinterland**

3.2.6 In some cases, the Landscape Character Areas are further sub-dived into more detailed sub-areas to reflect localised variations in character - such as the Redwick Village Sub-Area (A2.8) that is found within the Caldicot Level Character Area (A2). These sub-areas are largely based on the Historic Landscape Character Areas defined by the Historic Landscape Characterisation report (undated) for the Gwent Levels Historic Landscape of Outstanding Historic Interest prepared by the Glamorgan-Gwent Archaeological Trust.

3.2.7 The descriptions developed for each Landscape Character Area within the study area are structured as follows:

- **Location** – a brief description of the Area's location in context of the study area.
- **Distinctive landscape characteristics** – a summary of the key landscape features/elements and patterns that contribute to the local distinctiveness of the Area.
- **Landscape character** – a concise and evocative description of how the distinctive landscape features/elements and patterns combine to give the Area (and sub-areas where appropriate) its local identity and sense of place.
- **What's important and why?** – a summary of (i) the Area's key qualities and (ii) the high and outstanding values for each LANDMAP aspect.
- **Forces for change** – a summary of the key forces for change, current and future, that have an influence on the condition of the Area.



- **Landscape sensitivity** – a concise description of the inherent sensitivity of the Area to change.

- **Landscape guidelines** – a summary of planning/management guidelines and design principles for protecting, conserving and enhancing the Area's distinctive characteristics.

- **Green infrastructure opportunities** – a summary of (i) key green infrastructure assets (public access routes, landscape destinations and biodiversity) within the Area (and sub-areas where appropriate) and (ii) opportunities for improving these assets.

3.2.8 Within the sub-area descriptions, there are 'Levels Lingo' boxes which highlight the historic origins of selected local place names. These help to bring the story of local landscapes and places to life.

3.3 Flat/Lowland Levels (A)

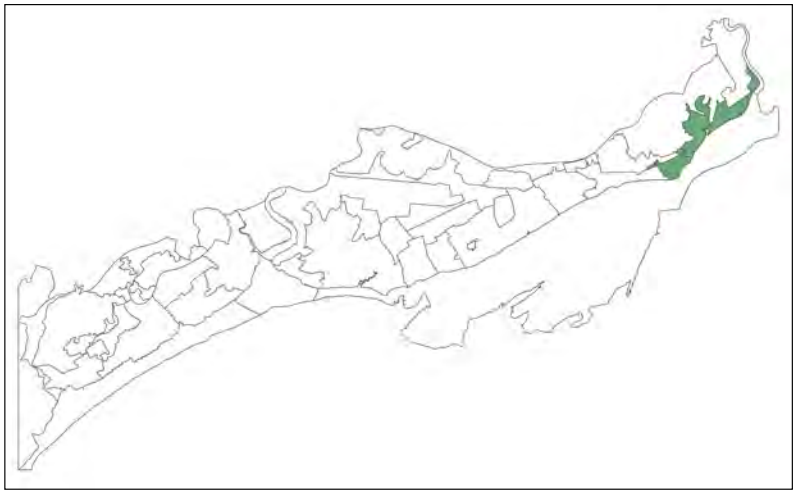
3.3.1 The Flat/Lowland Levels Landscape Character Type comprise an extensive low-lying area of drained agricultural land located on the floodplain of the Severn Estuary in Wales. This landscape type comprises three discrete areas of reclaimed estuarine alluvium that collectively form a coastal plain up to 6km wide. The two most extensive areas are Wentlooge Level, which extends from Cardiff and the River Rhymney to the mouth of the River Usk south of Newport, and Caldicot Level, which extends between the River Usk and the bedrock promontory at Sudbrook in Monmouthshire. A third smaller area of alluvium is found on Mathern Level between Sudbrook and the River Wye in Monmouthshire. The Flat/Lowland Levels landscape is of outstanding national historic interest, and is also of national nature conservation importance.

The Landscape Character Areas found within this Landscape Character Type are described below.

A1 – Mathern Level

Location

The Mathern Level is an open, flat area of coastal lowland located on the floodplain of the Severn Estuary between Sudbrook and the River Wye in Monmouthshire.



Distinctive landscape characteristics of Mathern Level

- Mosaic of regular, irregular and linear fields of reclaimed pasture
- Fields defined by an intricate network of mature hedges, lines of pollarded willow and streams and ditches
- Settlement is limited with scattered houses and farmsteads
- Large structures of the Second Severn Crossing, railway line and double lines of pylons
- Newpark Industrial Estate visually dominates the eastern end of the area

Landscape character

Mathern Level is an open flat coastal lowland located on the floodplain of the Severn Estuary. A mosaic of regular, irregular and linear fields of reclaimed pasture, defined by an intricate network of mature hedges, lines of pollarded willow and an intricate network of streams and ditches, rich in internationally rare flora and fauna. In places this structure has been eroded where over-intensive management has resulted in the breakdown and enlargement of fields. Historically a landscape hand-crafted by humans, the Mathern Level has been home to a wealth of settlers. Today, settlement is fairly limited with scattered houses and farmsteads, though the large structures of the Second Severn Crossing, railway line and double lines of pylons have substantially affected the visual and ecological diversity to the east. Newpark Industrial Estate lies on the eastern end of Mathern Level.

Mathern Sub-Area (A1.1)

This sub-area relates to a small parcel of coastal alluvium. Though the earliest references to reclaimed meadows in this area are sixteenth century, the landscape was almost certainly created in the high medieval period (eleventh to fourteenth century). There is only very limited documentary evidence relating to the area of alluvium in Mathern and Chepstow. Numerous meadows are first recorded from the sixteenth century, though they are likely to have been reclaimed several centuries earlier. A "monks mead" hints at an association with the Bishops of Llandaff, who owned Mathern.

Key historic landscape characteristics:

- Irregular field pattern
- Earthern seawall
- Drainage features include major artificial channel
- Sinuous droveways
- No settlement

A discrete parcel of coastal alluvium, separated from the St. Pierre Level by the bedrock ridge at Red Cliff. This area had a typical "irregular landscape", with two sinuous droveways, though no settlement. The Mathern/Chepstow parish boundary followed a major artificial channel of unknown date. The coastline is protected by a low earthen sea wall. Though once an area of typical "irregular landscape", this unusually small parcel of coastal alluvium has been damaged by the removal of so many field-boundaries. The few surviving hedges are mainly cut. The railway and a set of pylons are also visually intrusive. Overall, therefore, the integrity and coherence of this landscape has been greatly damaged, though it remains a quiet and discrete area of wetland landscape beside the Estuary.

Levels Lingo - **Mathern**

Mathern is said to have derived its name from "Merthyr Tewdric" - the martyrdom of St. Tewdric, King of Glamorgan, who died here in the 6th century from the effects of a wound received in battle against the Saxons, and who was afterwards esteemed a saint and martyr. During the 12th century, the shorted name Mateyrn (place of a king) came into common use for the village.

St Pierre Sub-Area (A1.2)

This sub-area relates to reclamations around the mouth/valley of St. Pierre Pill. The date when reclamation took place is not known, but is probably medieval. The valley was certainly tidally flooded in the post-Roman period. This area has a long history of cross-estuary communication. St. Pierre Pill in particular has very important documentary associations. It is recorded as a post-Roman landing place, associated with St. Teudrig. A ninth century source provides the first description of the tidal cycle in Britain. An important medieval/post-medieval ferry crossing ran from Sudbrook Point. This crossing may have had Roman origins, as substantial quantities of Roman material have been found in the area. The Second Severn Crossing sweeps across the Estuary just to the south.

Key historic landscape characteristics:

- Communications (ie long-established ferry-crossing/landing point)
- Irregular field pattern
- Drainage features (reens, ridgeing/surface drainage)
- Seawall
- Fen-edge settlement (medieval)
- Historic associations

This is a discrete parcel of coastal alluvium, surrounded by bedrock on three sides. A wide flood plain that leads north to the churches of Mathern and St. Pierre is an integral part of the Level. This area has an "irregular landscape" with the substantial St. Pierre Pill as its focus. In places the areas of alluvium either side of the Pill are quite narrow, though a more substantial area exists to the south west, in the shadow of Sudbrook Point. There are traces of ridging, particularly to the south west. The sea wall is a simple low earthen bank, without modern concrete reinforcement. There is an unbroken fen-edge between the alluvium and uplands. Several farms lie along this prime settlement location including Wallstone, a settlement probably established by the English marcher lords in the late eleventh or twelfth century. This area, perhaps best thought of as an expanded valley flood plain, is unique within the Gwent Levels. The range of landscape elements is limited, but they are fairly well preserved. Most of the hedges are scrubby, with a relative abundance of mature trees. There is some arable. This is quite a coherent landscape, retaining much of its integrity. It is generally in good condition, though bisected by the embanked railway line; a series of pylons are also visually intrusive, but there are fine views of the Severn crossings. There are very important, early documentary references to St. Pierre Pill.

Levels Lingo - **St Pierre**

While the name sounds French, it is possible that the name St Pierre originates from a Welsh family; Pŷr. St. Pierre's Pill is one of several inlets that since Roman times have had considerable influence on the development of the southern part of the Gwent.

Sudbrook Sub-Area (A1.3)

This sub-area relates to land in and around the village of Sudbrook.

Key landscape characteristics:

- Slightly higher area of land than the adjoining St Pierre Sub-Area (A1.2) and Caldicot Fen-Edge Sub-Area (A2.1)
- Exposed bedrock promontory at Sudbrook Point and Black Rock
- Red cliffs at Black Rock rich with fossils
- Irregular, medium to large-scale field pattern
- Long views across the Estuary towards England framed by the Severn Bridge and the Second Severn Crossing
- Housing development of different building styles and scales
- Pumping station and railway cottages

Sudbrook is a linear settlement bordering the Severn Estuary with long views at the settlement-edge towards the English coastline, although internal views are more restricted. Long linear brick terraces built to house the workers of the railway and paper mill follow the only route into this settlement. The tall towers of the paper mill dominate internal views though there are few views of the settlement within the wider landscape. However, its industrial heritage becomes immediately apparent past the railway bridge along the Sudbrook Road, forming a visual marker within the surrounding landscape. There are long views of the English coastline, the Severn Bridge and the Second Severn Crossing. Exposed and windswept, the irregular, medium to large-scale fields of mixed agriculture, are bounded by a mosaic of hedges. These boundaries have been subject to over-intensive management and have been replaced by post and wire fencing in places, whilst further west, hedges have been neglected becoming overgrown and gappy with scattered mature trees.

What's important and why?

Key Qualities of Mathern Level

- The area has a distinctive open and exposed flat levels character and has a strong sense of place.
- Long views are available across the Severn Estuary and the Severn crossings.
- The landscape is typified by reens and ditches that are lined with pollarded willow and hedges.
- In places the integrity of this landscape has been retained but diminished in places by replacement of reens and hedges with fencing and the lines of pylons and railway running through the area.
- A recognised landscape of outstanding historical value being included in the Register of Historic Landscapes, Parks and Gardens. A landscape hand-crafted by humans and reclaimed over a long period of time from tidal marshes with the building of sea walls and a complex pattern of drainage watercourses.
- The reens are rich in plant species and communities, many of which are rare or absent in other Level systems.
- It is a fragile landscape comprising reens, ditches, pasture with grips and ridge and furrow.
- Scattered dwellings and farmsteads, very sparsely populated, predominantly open agricultural land with spectacular views over the Severn Estuary.

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 4 aspect areas within the character area, of which 3 are of High value and 1 is of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 8 aspect areas within the character area, of which 3 are of High value and 4 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 11 aspect areas within the character area, of which 7 are of Outstanding value for this aspect (NB. this study recognises local variations in levels of ecological value within the LANDMAP aspect areas)
- ***Visual & Sensory*** – there are 14 aspect areas within the character area, of which 1 is of High value and 4 are of Outstanding value for this aspect
- ***Geological Landscape*** – there are 7 aspect areas within the character area, of which 1 is of High value for this aspect

Forces for change

The key forces for change on the character of the Mathern Level landscape are:

- Potential expansion of Newpark Industrial Estate.
- Potential cumulative effects of continued small scale 'out of keeping' infrastructure and services and expansion of intensive farming - poultry sheds at Leechpool.
- Exposed, windy nature of the Mathern Level provides potential for wind energy generation. Single/small scale development of wind turbines generally out of scale and form with existing landscape; vertical elements can have a significant detrimental visual impact on the coastal levels and adjacent estuary edge. Proposals for large-scale photo voltaic arrays in 'solar farms' can also have potentially significant landscape and visual effects where poorly designed or sited.
- In places the integrity and coherence of the landscape has been retained, however intrusive development is putting considerable pressure on this landscape with the breakdown of the field boundary structure resulting in the loss of, species-rich pasture and reen habitats.

Landscape sensitivity

Key qualities of the Mathern Level landscape that are sensitive to inappropriate change include:

- Strong rural and historic landscape character associated with the traditional management of the field drainage system
- Proximity to, and setting within national and international environmental designations
- Setting within an Area of Archaeological Sensitivity, presence of numerous SAMs.
- Open, level, unique landscape type with clear panoramic and long distant views of the estuary
- Lack of existing development and subsequent sensitivity to vertical elements

Landscape guidelines

- ***Townscape***: There is very little settlement within Mathern Level, primarily isolated farmsteads and a few scattered dwellings along Leechpool Holdings, distinctive painted/rendered stone built cottages and stone built farmhouses:
  - » New development should strongly reference the vernacular detailing, materials and building style/type in the area, settlement form and pattern should complement the existing fabric - cottage housing.
  - » Details on frontages/elevations should reflect local styles -brick highlights/detailing on corners and around windows that. Avoid large expanses of glazing and suburban detailing

- ***Settlement Edges:*** Settlements in Mathern Level tend to be dispersed single dwellings with strong relationship with adjacent roads/linear landscape features – reens:
  - » New development should integrate with the existing built fabric and reflect a similar density and ratio of open space to built development.
  - » Avoid sub-urbanised treatment such as close boarded fencing, post and rail etc - use traditional materials stone and brick or hedgerow planting.
  - » Reinforce traditional open character of field ditches and reens with occasional pollarded willows.
- ***Public Access***: Enhance public access and understanding of the special qualities of the Mathern Level landscape.
- ***Renewable Energy***: Ensure that proposals for wind turbine and solar farm developments are fully assessed to avoid adverse landscape and visual impacts, both individually and cumulatively, on the special qualities of the Mathern Level landscape.

Green infrastructure opportunities

Key green infrastructure assets in Mathern Level:

- ***Wales Coast Path***: access to sea wall/historic defences
- ***Protected and designated sites***: Severn Estuary SSSI, SAC, SPA and Ramsar site
- ***Accessible green spaces***: Black Rock Picnic site, Bushy Close Wood (MCC), Warren Slade and Park Redding, Chepstow (MCC)
- ***Views***: dramatic long distance views from along the Wales Coast Path at Black Rock and Sudbrook Point across the Severn Estuary towards England framed by the two Severn Bridge Crossings.

Opportunities for improvement:

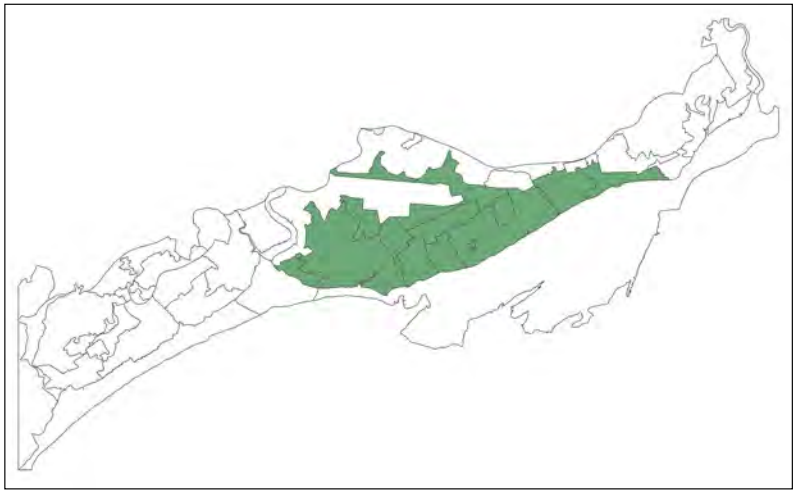
- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Mathern Level landscape.
- ***Provision of improved pedestrian paths, rights of way and cycling routes***: to enhance connections between settlements at Sudbrook, Leechpool and Chepstow and the wider Mathern Level landscape.
- ***Landscape setting enhancement***; reinforcing character of simplistic, open and wide ranging panoramas within fringes of settlements by encouraging low density development, sympathetically designed using local building styles and materials.
- ***Settlement edge treatment***: reinforcing character and improving appearance of settlement edges by using local building styles and materials for boundary treatments.

- ***Habitat and landscape management***: restore and enhance the traditional open character and function of field ditches and reens as 'wet fences' with occasional pollarded willows through management of scrub/hedgerow encroachment along edges to enhance biodiversity and protect integrity of the drainage system; where possible, recreate traditional pattern of smaller fields and meadow management (including hay cut as preference over silage cut).

A2 – Caldicot Level

Location

The Caldicot Level is an extensive character area, which extends between the River Usk in Newport and the bedrock promontory at Sudbrook in Monmouthshire.



Distinctive landscape characteristics of Caldicot Level

- A flat, open and exposed historic landscape of reclaimed pasture
- Variety of field patterns and drainage channels/reens
- Field enclosures generally regular and neat
- More piecemeal field patterns south of Undy and Magor Pill
- Extensive mature overgown trees/hedgerows
- The historic reens, hedgerows and tree lines including pollarded willows are mostly intact
- Part of the M4 corridor, lines of pylons/powerlines and views of the Second Severn Crossing are visually dominant
- Settlement pattern largely confined to linear residential development along the reenside roads and scattered farmsteads.
- Predominantly detached/cottage housing - rendered/painted rubblestone with tiled/slate roofs

Landscape character

The Caldicot Level forms part of the extensive area of reclaimed marsh and wetlands from Cardiff to Chepstow. Reaching up to 10 metres AOD, the area is characterised by its network of drainage ditches (reens) which vary in form and character. It is a flat, open and exposed historic landscape of reclaimed pasture with a variety of regular and irregular field patterns divided by reens.

Field enclosures are generally regular and neat, and south of Undy and Magor Pill more piecemeal patterns with extensive mature overgown trees/hedgerows create a somewhat unkempt character. The historic reens, hedgerows and tree lines, including pollarded willows, are mostly intact.

Part of the M4 corridor, lines of pylons/powerlines and views of the Second Severn Crossing visually dominate the east of the area. Settlement is largely confined to linear residential development along the reenside roads at Whitewall Common and Magor Pill/Marsh to the west and associated with the railway to the east, elsewhere scattered farmsteads. Predominantly detached/cottage housing typically of rendered/painted rubblestone with tiled/slate roofs. A unique landscape defined by its flat levels, historical character and fragile reen system.

The eastern edge of the area is characterised by regular, rectilinear pattern, whereas around Whiston and Caldicot the pattern is more sinuous. These variations reflect the different periods of reclamation and have a consequent effect upon settlement and road pattern. Particular examples are provided at Redwick, the largest nucleated village on the levels surrounded by a number of large orchards and at Whitson, where a distinctive linear pattern of settlement along the line of a street common is found.

The vegetation pattern reflects the differing periods of enclosure. The main lines of vegetation follow the drainage ditches and these vary from no vegetation through the reeds and scrub to strong lines of trees, primarily willows and oak. The main visual detractors are the interface with Llanwern Steelworks site on its northern boundary and the cluster of overhead power lines that focus upon Uskmouth power station. The construction of lagoons at the Newport Wetland RSPB Reserve has modified the landscape pattern but has increased biodiversity in this part of the area. This is reflected in its designation as a National Nature Reserve and SSSI.

Once found more extensively across the Levels at different times in prehistory, Caldicot Level contains the only surviving peat bog on the Gwent Levels. The area around Barecroft Common, Magor Marsh (Whitewall Common) and Bridewell Common south of Magor is a unique area of lowland peatland fed from a spring source, occupying one of the lowest parts of the Gwent Levels. The occurrence of peat fenland is responsible for the considerable diversity of wildlife found in this area, and the primary reason why it has largely escaped agricultural improvement. Localised but increasingly rare examples of surface field drainage also exist in this part of Caldicot Level.

Caldicot Fen-Edge Sub-Area (A2.1)

This sub-area relates to an unusual area of small irregular fields by the fen-edge. The first documentary references to this area are early thirteenth century, making these some of the earliest documented meadows on the Gwent Levels. The enclosure of these open fields and small commons started around the sixteenth century, and as completed in the nineteenth century. A Roman settlement, enclosed by several substantial ditches, lies by the fen-edge at Stoop Hill. Caldicot was also an important pottery-producing centre, and kilns have been found close to the edge of the alluvium. In terms of historical landscape, these areas have some of the earliest documentary references to reclaimed meadows on the Levels, dating back to the thirteenth century (i.e. Temple Mead).

Key historic landscape characteristics:

- Small irregular shaped fields result of piecemeal reclamation these include the important well-documented "Temple Mead"
- Sinuous droveways
- Small parcels of common, historic associations

This is an area of reclamations that fringe the fen-edge around Caldicot village, bounded by Ifton Reen to the west. This is a landscape of small irregular shaped fields, sinuous droveways and small parcels of common. These areas were carved out of the common moor in a gradual and piecemeal fashion; one such individual episode is represented by the roughly oval area defined in the field-boundary pattern, by the sea wall to the south of Rogiet. This was "Temple Mead" documented in the thirteenth century. There were no settlements. Early air photographs show some of the finest "ridge and furrow" resulting from medieval ploughing, on the Gwent Levels (since destroyed). No fields survive with ridging/surface drainage.

Though "irregular landscape" of this type is found widely on the higher coastal areas further west, it is unusual to find it adjacent to the fen-edge. Early documentary evidence and the survival of Temple Mead enhance the importance of the landscape. The value of what little survives is diminished by the presence of the Second Severn Crossing and urban/industrial development around Caldicot. However, the coherence and integrity of "Temple Mead" is high.

Caldicot Moor Sub-Area (A2.2)

This sub-area relates to "regular landscape" resulting from Parliamentary enclosure in 1850.The whole landscape was created in 1800 through the enclosure of the former common. This area was a common pasture for several local communities and is referred to in many medieval and later documents.

Key historic landscape characteristics:

- Homogeneity
- Drainage features (no grips)
- Seawall includes relict medieval seawall (SAM)
- Regular field pattern of square to rectangular fields
- Grid of green lanes
- No settlements
- In-filled tidal creeks

This area is bounded by Collister Pill to the west, the fen-edge and Second Severn Crossing to the north/east and the coast to the south. Ifton Reen lies to the east. The landscape consists of a grid of green lanes and square to rectangular fields. There are no settlements. A relict medieval sea wall lies to the west of Collister Pill (a Scheduled Ancient Monument), and the modern (1850) sea wall lies along the present coast. Many fields contain the undulating traces of former tidal creeks, which have silted up since the construction of the sea wall. This is one of the few areas where there is an unbroken landscape from coast to fen-edge. The slight increase in elevation towards the coast is discernible on the ground.

This is one of only two surviving major nineteenth century Parliamentary landscapes on the Levels. Because it was created through the enclosure of common land (as was the case of the now largely destroyed Green Moor), as opposed to open fields (e.g. Broadmead), it is unique. All the features date to c.1850. Therefore, this is an extremely rare landscape of a single period and very homogenous nature. It is also one of the very few areas of fen-edge that survive. No fields have grips, though there are extensive earthworks of infilled tidal creeks. There is a marked variation in the nature of the reens: those to the north tend to be better maintained, whereas to the south they are more scrubby or well vegetated.

Overall this is a very coherent landscape, with good integrity. However, part of the area has been destroyed by the Second Severn Crossing. Much of the remaining land is outside the bounds of the SSSI. Agricultural improvement has led to the loss of a significant number of hedges, which makes the impact of the Second Severn Crossing all the greater. There are also rows of pylons running across the Moor.

Redwick/Magor/Undy Sub-Area (A2.3)

This sub-area relates to complex "irregular landscape" with some dispersed settlement.

Key historic landscape characteristics:

- Irregular field pattern of small fields (includes some regular areas),
- Drainage features (reens, surface drainage) include major medieval reens,
- Seawall includes relict sea wall (SAM)

An area of higher coastal land comprising Windmill Reen and Broadmead to the west; Ynys Mead Reen, Lower Grange and the fen-edge to the north; and Collister Pill/Caldicot Moor to the east. This diverse landscape has a pattern of small irregular fields like the Nash/Goldcliff sub-area. Undy Common has a "regular landscape" resulting from nineteenth century enclosure.

There is a range of other features, including some fine bridges. West of Magor Pill the sea wall is rubble faced with a wave return wall; to the east it is a simple earthen bank with dressed stone facing. The wall sits uncomfortably over the landscape creating a series of triangular fields. A well-preserved relict sea wall runs along Collister pill (a Scheduled Ancient Monument). There are a number of major medieval reens (e.g. Windmill and Coldharbour) and the embanked Mill Reen.

The remains of a 13th-century boat, used for trading along and across the Severn Estuary, and perhaps with Ireland, were found buried in the mud of the estuary close to Magor Pill. The boat was found to have been carrying iron ore from Glamorgan. It is the largest wreck find of its period in Welsh waters and probably the largest found so far in the British Isles.

This is a typical and mainly well-preserved example of "irregular landscape", with great diversity or elements. Redwick village stands at the centre, while Mill Reen and the Collister Pill relict sea wall are other focal (if linear) features. Most areas have a mixture of scrubby and cut hedges; south of Redwick village they are more wooded. Around Coldharbour Pill, north of Redwick village and the south east of Undy have seen many fields enlarged and hedges well cut.

Overall, both integrity and coherence of the landscape are high. While some areas have suffered from agricultural improvements, otherwise its condition is good; there are few intrusive modern buildings. Some fine ridging, especially to the south of Redwick village and in Undy.

Magor Lower Grange Sub-Area (A2.4)

This sub-area relates to another of Tintern's estates, drained in the mid-thirteenth century. The landscape around Lower Grange in Magor dates primarily to the mid-thirteenth century when the monks of Tintern were given permission to enclose and drain it. However, the outer boundaries, including Blackwall and Whitewall are earlier. There are a series of medieval references to Whitewall and the drainage of Tintern's "Lower Grange". The local name of Whitewall may relate to the same causeway, which would have connected the area to a small now-vanished harbour on the Severn Estuary known as Abergwaitha or Aberweytha.

Key historic landscape features include:

- Drainage features include major reens (no surviving ridging/ surface drainage)
- Lanes with road-side waste
- Ribbon settlement and enclosure on roadside waste
- Regular rectilinear field pattern
- Important monastic association (monastic grange)

Whitewall Reen lies to the east, Pill Street to the south, and Blackwall Reen to the west. Part of Magor Marsh Nature Reserve lies to the north. The principal elements of this landscape include the three roads/reens that form the east, west and southern sides. Pill Street to the south and Whitewall to the east formerly had wide strips of roadside waste, which have been enclosed and partly occupied by cottages. Blackwall to the west is a green lane; stone facing of the actual wall survives in places.

The field-boundary pattern is characterised by large rectilinear fields, which though recently enlarged, retain their historic character. The only farmstead is Lower Grange Farm itself. To the east lies Mill Reen, a raised watercourse that carries upland water across the Level to the coast at Magor Pill (in the same way as Monksditch does in sub-areas A2.10, A2.12 and A2.13). This is a very rare landscape on the Gwent Levels in that its origins are documented. The association with the monks of Tintern Abbey increases that importance. It is also a very coherent landscape with a high group value. There are extensive views of the uplands, providing a sharp contrast to the extensive flat plain that is the Levels.

All of the fields are improved with no surviving ridging/surface drainage. Most hedges have been cut or removed, though there are a few trees around the farm itself. The area has seen particularly extensive ploughing. Despite agricultural improvement and the two sets of pylons which cross the area, this remains a well-preserved landscape. Parts of Blackwall and Mill Reen are in good condition, and the pattern of large fields retains their original character. The area is a fine example of a documented monastic grange with well-defined boundaries. Overall, the integrity of this landscape is high, and though its coherence is currently more limited, this could be restored through field-boundary replacement.

Levels Lingo - **Magor**

Magor (welsh Magwyr) means 'a wall' and is thought to originate from the Latin maceria, meaning masonry walls or ruins. It may relate either to a now-lost Roman villa in the area, or alternatively to sea defences or a causeway built by the Romans. Magor and the surrounding area contain many Roman ruins and artefacts, and the village centre was originally located at the inner edge of salt marshes which the Romans began to reclaim as farmland.

Green Moor Sub-Area (A2.5)

This sub-area relates to a simple landscape in the back-fen of Redwick/ Llandevenny/Magor. The framework of major reens and lanes date to at least the mid-sixteenth century, and probably earlier. However, the pattern of fields is largely post-medieval. The areas north and east of the railway were enclosed first, possibly in the seventeenth or eighteenth centuries; Green Moor proper, south of Llanwern, was enclosed c.1850. When the Gwent Europark was under construction, a nearly complete Roman boat was discovered besides a stone and timber quay; the conserved remains are now in store in Newport Museum. In the medieval/post medieval period, Green Moor was an extensive common pasture used by many of the surrounding communities.

Key historic landscape characteristics:

- Uniformity
- Strong "wetland" feel
- Regular field pattern
- Straight roads (grid-layout)
- Drainage features (reens, ridgeing/surface drainage, grips and bridges)

A low-lying area of back-fen. The southern area bounds the Steel Works, railway and Gwent Europark to the north, Rush Wall and Blackwall to the south/east. The block to the north of the railway retains its original fen-edge. The principal elements of this very uniform landscape are a very regular pattern of field-boundaries, laid out within a grid of straight roads and major reens. There are few other landscape features and just one settlement (Barland's Farm). Certain areas have good grips and some fine bridges (e.g. along Rush Wall). A duck decoy pond is documented in this area.

The condition of this landscape is mixed. To the east and north of the Gwent Europark, most boundaries survive, fields retain surface ridging, and fragmentary hedges contain a large number of mature willows; this landscape has a strong wetland feel, typical of low-lying back-fen areas. The area south of the Steelworks has been used an ash tip. South of Magor village is the Magor Marsh SSSI and the Magor Marsh Nature Reserve, which has been owned and managed by the Gwent Wildlife Trust since 1963. This area is the largest remnant of the formerly extensive peat fenlands on the Levels. It is of nature conservation value for its marshy grassland, swamp, standing water and wetland invertebrate assemblage. Traditional management methods preserve areas of rich meadow and “fen carr” vegetation.

Though once a common type of field pattern, the distinctively homogeneous back-fen landscapes are now rare. Areas north and east of the Gwent Europark are typical, in good condition and retain the original fen-edge. There are fine views of the adjacent uplands, though the area south west of Llandevenny village is over-shadowed by the Gwent Europark. Overall, the eastern and northern areas have a very high integrity and coherence

Llanwern Back-fen Sub-Area (A2.6)

This sub-area relates to a simple landscape in the back-fen of Llanwern north of the Glan Llyn development area and the Llanwern Steelworks. The framework of major reens and lanes date to at least the mid-sixteenth century, and probably earlier. However, the pattern of fields is largely post-medieval.

Key historic landscape characteristics:

- Uniformity
- Strong "wetland" feel
- Irregular field pattern
- Drainage features (reens, ridgeing/surface drainage, grips and bridges)

A low-lying area of back-fen. To the south, the area bounds the railway that runs along the edge of the Glan Llyn development site and the Llanwern Steelworks. To the north, the back-fen gives way to the well-wooded rolling farmland on higher land around Llanwern Park. The principal elements of this uniform landscape are an irregular pattern of field boundaries, laid out within a grid of major reens. There are few other landscape features and limited roads or farmsteads.

The condition of this landscape is mixed. Most boundaries survive, fields retain surface ridging, and fragmentary hedges contain a large number of mature willows; this landscape has a strong wetland feel, typical of low-lying back-fen areas. Though once a common type of field pattern, the distinctively homogeneous back-fen landscapes are now rare.

Northern Redwick Sub-Area (A2.7)

This sub-area relates to a fairly simple landscape, including Tintern Abbey's estate at Grangefield. This area was enclosed and drained probably around the thirteenth or fourteenth century. Grangefield was a farm owned by the monks of Tintern Abbey. The area to the east, known as "Black Moores" was enclosed and drained by them, probably in the thirteenth or fourteenth century.

Key historic landscape characteristics:

- Uniformity,
- Limited range of features,
- Earthworks - monastic grange, monastic boundary,
- Regular field pattern,
- Straight lanes without waste,
- Sparse settlement at periphery,
- Drainage features (reens, ridgeing/surface drainage, grip system)

A slightly lower-lying area inland of the coastal part of Redwick. Bounded by Whitson to the west, Green Moor Wall/Rush Wall to the north and Ynys Mead/Mere Reen to the south. This area of landscape is characterised by its uniformity and limited range of landscape features; a regular field-boundary pattern, with relatively few lanes, all of them straight and without roadside waste, and very few settlements. Just three isolated farmsteads all lie around the periphery (Grangefield, Greenmoor and Greenfield Farms).

The earthworks of Tintern Abbey's farm survive beside Grangefield, and are scheduled. Slight traces of a bank survive along Mere (Old English for boundary) Reen, that probably represents the boundary between Redwick's open fields in Broadmead and the Lands of Tintern Abbey to the north. There are some well-preserved grip systems, especially to the east of Grangefield. The landscape around Grangefield is historically very important due to its monastic associations, and has a high group value; this area is in rather better condition than the rest of Northern Redwick. Though the whole of this landscape block survives, and has good coherence (especially around Grangefield), its integrity has been reduced due to the intensity of modern farming.

While this character area is largely, complete, parts are poorly preserved with extensive ploughing and the removal of hedges. The extreme western part is in better condition, where hedges are predominantly scrubby, with some well wooded. This area is important, however, as a buffer zone between the industrial and commercial developments to the north, and the better-preserved, more secluded landscapes to the south. Though at present, the very open nature of the landscape affords little screening of the Steel Works or Gwent Europark developments, this could change

Redwick Village Sub-Area (A2.8)

This sub-area relates to the best-preserved and only medieval nucleated settlement on the Levels. The village of Redwick probably originated in the late eleventh/twelfth century, though as it remains in use today, a wide variety of periods are represented in the buildings. There is fine collected of documentary sources, including several detailed late medieval and post-medieval surveys. A plaque on the outer wall of the church of St Thomas the Apostle commemorates the great flood of 1606 when many thousands of people and animals died: other examples can be seen on churches in Goldcliff (sub-area A2.13) and Peterstone (sub-area A3.3). A range of Commissioners of Sewers notices relating to the drainage system are on display built into the bus shelter near the church, along with some stones that were placed along reens to demarcate the stretches which individual tenants were responsible for maintaining.

Key historic landscape characteristics:

- Nucleated village centred on cross-roads and medieval church
- Traditional buildings (post-medieval) including working farms
- Earthworks
- Traditional orchards, road-side commons
- Drainage features (reens, maintenance markers)

There is a diverse range of architectural styles attractively dispersed among small orchards and open spaces, all set within a striking man-made landscape of drainage ditches and flat fields. The remaining working farms within and surrounding the village maintain a tangible sense of the agricultural origins of the settlement, as a working community. Redwick village has a strongly rural character which is distinguished by the numerous traditional orchards and open spaces within the settlement.

The village lies at an important cross-roads in the central southern part of the parish, on the higher coastal part of the Caldicot Level. Redwick is the largest nucleated village on the Levels, focused around a nodal point in the road network. Several small areas of roadside common survive, one with a plaque commemorating the enclosure act of 1850. There are a wide variety of buildings including the medieval church, and some fine post-medieval cottages and farmhouses. There are several working farms. Earthworks to the south of the village relate to abandoned buildings and are of great archaeological potential. Several very fine orchards survive, and a cider press is preserved in a bus shelter beside the church.

Redwick is the best-preserved medieval nucleated village on the Levels, and remains generally in very good condition with few modern buildings. There are a diverse range of pleasant buildings and other landscape features including orchards, giving it a very high coherence and group value. With several working farms it retains a high degree of integrity as a working agricultural village.

Redwick Broadmead Sub-Area (A2.9)

This sub-area relates to "regular landscape" derived from the Parliamentary enclosure of open-fields. Broadmead is first recorded in 1422. It was a large tract of meadow, divided into strips which were not defined by ditches; hence it was known as an "open field". Piecemeal enclosure probably started by the sixteenth century on the eastern side, but it remained largely unenclosed until a Parliamentary Act of 1858; the present pattern of roads and fields for the first part date to that period. This was the communal meadow of Redwick village, and is mentioned in innumerable documentary sources. It survived to be mapped in 1831.

Key historic landscape characteristics:

- Regular field pattern of large rectangular fields,
- Drainage features (reens, ridgeing/surface drainage
- Bridges,
- Medieval drainage channels),
- Seawall,
- Single green lane (pollards) without waste.

The area is bounded by Elver Pill Reen/Porton to the west, Grangefield to the north, Windmill Reen to the east and the coast to the south. This homogeneous and uniform landscape is dominated by a pattern of mainly large, rectangular fields which replaced the earlier open field strips. The only road, Mead Lane, is a very straight green lane which lacks any roadside waste. There is a very limited range of other landscape features, notably some fine bridges along Mead Lane. Two major medieval artificial drainage channels, Elver Pill and Windmill Reens, lie to the west and east. The sea wall to the south has a stone rubble racing and concrete wave return wall. A few fields have ridging, and occasional ill-developed grips. Pollards are mainly restricted to hedges beside the green lane.

For the Levels, this is a very rare single period landscape, and the most extensive parliamentary enclosure of former open fields. As such it is one of the few landscapes for which an absolute date of origin can be attributed. A major characteristic is the very limited range of landscape features, notably the predominance of large rectangular fields and lack of settlement. Its condition is generally good. Hedge maintenance, however, is very diverse. This landscape has a very high integrity and coherence relating to its nineteenth century origins. It also demonstrates how landscapes were transformed through Parliamentary enclosure.

Porton Sub-Area (A2.10)

This sub-area relates to an "Intermediate" type landscape by the coast. This landscape appears to have been planned out in a single episode. Porton is documented from the mid thirteenth century. Land in Porton was held by Goldcliff Priory and Tinetern Abbey, though little documentation survives. There is a local legend that the original village has been eroded away; some claim the ghostly bells of Whitson church can still be heard.

Key historic landscape characteristics:

- Drainage features (reens, surface drainage, grip system),
- Seawall,
- Rectangular fields in planned grid of roads,
- Network of green lanes,
- Fishery features (important Putcher rank)

This landscape is bounded by Whitson to the north, Elver Pill Reen and Broadmead to the east, Mireland Pill to the west and the coast to the south. The field pattern consists of rectangular fields set within a planned grid of roads. The axial east-west road may be an enclosed street common. The two north-south roads lack any waste and survive as unmetalled "green lanes". The hamlet of Porton lies adjacent to Whitson church, and includes a fine collection of seventeenth to eighteenth century buildings. The only other settlement is an isolated farmstead by the coast. It is known as "The Fisheries", and the remains of a "Putcher rank" which trapped salmon at high tide can be seen from the sea wall at low tide.

The sea wall clearly cuts across the grain of this landscape, leading to the creation of a number of triangular shaped fields. Elver Pill (formerly Earls) Reen lies to the east; though documented from the sixteenth century, it is certainly much older. The sea wall has stone rubble facing and a wave return wall. Some well-preserved grips remain especially to the south. Some pollards are also in evidence.

It is unusual to find such a "regular landscape" so close to the coast, and is probably another example of medieval planning. It is a well preserved, very coherent landscape having a high group value, with a relatively intact field-boundary pattern, grip system and network of green lanes, all cut by the set-back sea wall.

To the south, hedges are mainly scrubby, with occasional mature willows. To the north, some boundaries have been lost, and many of the remaining hedges are well managed. Overall, this is an extremely coherent landscape with a very high integrity; the wide range of landscape elements articulate well. There are few visual intrusions, apart from the British Steel pipeline down Elver Pill Reen (though this is largely screened by hedges). The small hamlet at Porton is particularly pleasant.

Whitson Sub-Area (A2.11)

This sub area relates to the unique planned village of Whitson. This fascinating landscape was planned out during the high medieval period possibly by the monks at Goldcliff. Initially, a series of long narrow strips were laid out, surrounded by a "fen-bank". These strips were subsequently extended a number of times. The common was enclosed in the mid-nineteenth century. There is a scarcity of documentary material for Whitson, though the possible contexts for its creation, by Flemings, Goldcliff Priory or the lords of Caerleon, give the potential for strong cultural associations to be developed. A survey of 1656 describes the drainage system in detail.

Key historic landscape characteristics include:

- Drainage features (reens, banks, and ridging/surface drainage, including the medieval Monksditch)
- Linear settlement on the former common
- Fen-banks
- Green lanes
- Long narrow fields
- Pollarded trees

This landscape occupies the centre of the Caldicot Level. Monksditch lies to the west, the road around Whitson to the north/east, and a green lane to the south. The principal element is a linear settlement along a "street common", and very long narrow fields laid out longitudinally to the east. It is enclosed by a road, which is metalled to the north/west; there is a fine green lane along Parish Reen to the south/east. The main village street runs down the centre of the former common, leading to the farms, which originally all lay on the common's edge, being set back from the present road. Monksditch runs down the west side of the former common. A fine row of pollards lines Bowlease Reen.

This is a unique and fascinating example of a planned landscape and linear settlement dating to the twelfth to fourteenth century. It is unique on the Levels. There is a coherent range of landscape features giving the area a very high group value (eg Monksditch, the former common, sequence of fen-banks, green lanes). A number of boundaries have been lost but some grips are well preserved and the pattern of long narrow fields survives in essence. The area is overlooked by the Steel Works, though tree planting partly screens this. The ash dumps to the north-east are visible in the landscape.

There are many scrubby and well-wooded hedges (especially in the village), though others are cut or absent. This, along with the loss of some boundaries, leads to a rather open landscape in places, though still retaining the important pattern of long narrow fields. Overall, this is a very important and coherent landscape, retaining considerable integrity. It is a fine example of English planted settlement/reclamation in the Welsh Marches.

Christchurch/Nash/Whitson Back-fen (A2.12)

This sub-area relates to a low-lying back-fen with simpler "intermediate" landscape. The initial enclosure and drainage by reens and banks began by the fourteenth century. Individual field-boundaries are probably later (perhaps post-medieval).

Key historic landscape characteristics:

- Well-preserved drainage features (reens, banks, and surface drainage),
- Rectilinear field pattern arranged in blocks,
- Very little settlement,
- Straight roads,
- Without waste,
- Lined by pollarded willows,
- Giving a strong "wetland" feel

Area of low-lying back-fen. Once extended to fen-edge but surviving area now bounded by the Steel Works to the north and Green Moor to east. Whitson and the Nash/Goldcliff coastal zone lie to the south and west. The fairly rectilinear field-boundary pattern can be broken down into small blocks, defined by major reens and former banks that represent individual reclamations. Roads are mainly straight and without waste. There was a distinct range of other landscape features. The lowest-lying areas closest to the fen-edge were occupied by a series of commons. They were destroyed by the Steel Works, along with two duck decoy ponds and the only two farms in this character area. There are several fine lines of pollards.

This area was once representative of a common type of landscape on the Levels, covering much of the back-fen. It is characterised by a fairly homogenous rectilinear pattern arranged in blocks of several dozen fields, with very little settlement. The roads are straight, without waste and lined by pollarded willows, giving a strong "wetland" feel. Monksditch is particularly well preserved, being stone faced in places. With its lower level reen to the west, Whitson Arch bridge, and well-preserved grips in the surrounding fields, the area around the sub-station has a very high group value. Hedge management varies, with a mixture of well-cut and scrubby hedges, and a large number of mature trees around the Whitson electricity sub-station. The integrity and coherence have been damaged, though the visual impact of the Steel Works is lessened by trees.

Nash/Goldcliff Coastal Zone Sub-Area (A2.13)

This sub-area relates to a complex "irregular landscape" in higher coastal area, with small irregular fields, sinuous lanes and dispersed settlement. The higher coastal parts of this landscape were certainly reclaimed by the late eleventh/early twelfth century when Goldcliff and Nash were granted to Goldcliff Priory. Lower-lying areas inland were enclosed and drained by the thirteenth/fourteenth century. Subsequent changes in landuse, population increase leading to the proliferation of scattered farms and cottages, and the enclosure of commons and roadside waste, have meant that this has been a constantly modified landscape, but one that in essence is high medieval in date.

An abundance of prehistoric intertidal archaeology is known off Nash and Goldcliff, and this is likely to extend inland under the later alluvium. Evidence of Roman occupation was found when the Nash sludge pits were dug, during construction of the Uksmouth Power Station and around Goldcliff Point. A Roman inscription, the "Goldcliff Stone", records the work of legionaries on a linear earthwork, presumably a sea wall. A wide range of documentary material exists for this area, including a series of charters for Goldcliff Priory, and thirteenth century accounts of how the drainage system worked. Locally, there are strong cultural associations with the Priory; farmers widely attribute to reclamation of this area to the monks.

Key historic landscape characteristics:

- Diverse landscape.
- Abundant intertidal and buried archaeological remains,
- Drainage features (reens, banks, grips, surface drainage, bridges)
- Small irregularly shaped fields,
- Sinuous lanes with roadside waste,
- Dispersed settlement,
- Large commons, monastic associations.

Area of relatively high coastal land, bounded by the Severn Estuary and Newport Wetlands to the south; Uskmouth industrial development to the west; Newport urban/industrial areas and intermediate landscapes to the north; and Whitson and Porton to the east. This was, and still is, a common type of complex and diverse landscape, typical of the higher coastal parts of the Gwent Levels. It is characterised by small irregularly shaped fields, sinuous lanes with roadside waste, dispersed settlement and large commons. This wide range of well-articulated landscape elements gives it a high group value. There are strong associations with the Priory on Goldcliff Point, of which Monksditch is the most obvious aspect. Though still in use, this is of great historical significance. The areas of landscape north of Goldcliff Point, and around Chapel Lane, Clifton Common and Saltmarsh are particularly well preserved. Several areas have suffered damage from agricultural improvement, but in other areas, preservation is excellent.

The visually most positive feature of this landscape is its diversity. The northern and western areas are over-shadowed by Uskmouth, Newport and Llanwern, but towards the coast, the area is quiet and secluded. There is a great diversity of features and good preservation of earthworks demonstrating the complex drainage hierarchy. Hedge management varies considerably. There is a mixture of scrubby and cut hedges with some isolated mature trees; areas south of the Nash-Goldcliff road tend to have more scrubby hedges. Generally this is a fairly intensively used landscape with significant areas of arable, especially in south-east Nash.

Levels Lingo - **Goldcliff**

In 1188, Giraldus Cambrensis described the small cliffs at 'Goudlclyff' as "glittering with a wonderful brightness". It is thought that Goldcliff gets its name from a limestone cliff, about 60 feet high, that once rose over a great bed of yellow mica which had a glittering appearance in sunshine, especially from ships passing in the Bristol Channel.

Overall this landscape has a reasonable integrity (though many of the roads are metalled and there are many modern cottages), and a reasonable coherence (being predominantly a working agricultural landscape). This is a very diverse landscape, reflecting its long history of formation, with an irregular field-boundary pattern and sinuous lanes. Much of the once ample roadside waste has been enclosed, though traces survive (eg Saltmarsh Lane). North of Goldcliff Point, Mireland Pill forms one side of a particularly fine green lane, there were several linear street commons; most have been enclosed (eg Broadstreet), though the Clifton example survives.

The settlement pattern was mainly dispersed with farms and cottages scattered throughout the landscape. Several earthwork complexes represent the sites of abandoned settlements, including the scheduled moated site by Chapel Lane in Goldcliff. Nash and Goldcliff villages now largely consist of modern buildings, though there are a number of fine old farmhouses elsewhere.

Several reens flow through this area, most following natural meandering courses. With the exception of Monksditch, few of the reens are of particular historic significance. Monksditch (also known as Goldcliff Pill) is a raised watercourse that carries water from an upland stream to the coast, preventing the fresh water from flooding the Levels. It is first documented in the 13th century and was probably constructed by the monks at Goldcliff. Local folklore reports that the sides of Monksditch are laced with smuggler's brandy.

There are a wide range of other landscape features, such as a fine collection of bridges over Mireland Pill. The sea wall is rubble faced having been rebuilt quite recently. The survival of grips is patchy, but fine examples occur to the north of Red House Farm, either side of Chapel Road. Pollarded willows are fairly common towards the coast, particularly to the south of the Nash-Goldcliff road. The remains of the last working putcher rank in Wales stands off Goldcliff Point, which closed in 1995.

Newport Wetlands Sub-Area (A2.14)

This sub-area relates to the extensive area of wetland managed for nature conservation adjacent to the Usk estuary, south-east of Nash.

Key landscape characteristics:

- Extensive series of constructed lagoons and reed beds
- Extensive panoramic views over mudflats and saltmarsh across the Severn Estuary.

The Newport Wetlands sub-area is dominated by a series of extensive saline lagoons and reed beds, surrounded by wet grassland and some small areas of woodland and scrub. The area is surrounded by bunds and lies adjacent to the Severn Estuary. Views to the north-west are dominated by pylons with the Uskmouth power station visible above overgrown hedgerows adding to the blend of sense of wildness and industry that is characteristic of the area.

The Newport Wetlands were created in 2000 as environmental mitigation to compensate for the loss of wildlife habitats within the Taff/Ely Estuary SSSI when the Cardiff Bay Barrage was constructed. Stretching from Goldcliffe to Uskmouth, the wetlands were created on land that was once an ash covered wasteland for the neighbouring coal-fired Uskmouth power station. The ash was removed and the site re-landscaped. The Newport Wetlands received its National Nature Reserve designation in 2008. The National Nature Reserve covers some 865 hectares of terrestrial and inter-tidal habitats, and is managed jointly by Natural Resources Wales (NRW) in partnership with Newport City Council and RSPB. Appearing to "float" among the reeds and lagoons, the Wetland Centre opened in 2008 is now managed by the RSPB. It houses a shop, café, education room and conference facilities.

Throughout the reserve and along the edge of the trails there are vast tracts of reeds. As well as providing a winter home for the rare Bittern, the reed beds are also used by Otters. Cuckoos and Great-crested Grebes also breed in the reed beds. The saline lagoons are the only breeding location in Wales for Avocets, and other species also breeding here include Lapwings, Oystercatchers, Redshanks, Ringed Plovers and Little Ringed Plovers. In the spring and summer, more than 20 species of migrating waders visit the lagoons. The wet grassland areas support large numbers of wintering wildfowl and waders. Large flocks of Wigeon and Lapwings arrive, and both Shovelers and Black-tailed Godwits are present in significant numbers. In spring, Redshanks and Lapwings breed in the grasslands, and Skylarks can be heard singing overhead.

The East Usk Lighthouse was constructed in 1893 by Thomas Williams, and his family continued to tend the lighthouse for generations. Originally, it was built on legs, but now it forms part of the sea wall and stands within the grounds of the Newport Wetlands Nature Reserve. The lighthouse remains operational.

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What's important and why?

Key Qualities of Caldicot Level

- The nature conservation value is outstanding, the reens are rich in plant species and communities, many of which are rare or absent in other Level systems
- Drainage pattern - network of 'reens' separating the enclosures
- Patchwork of improved and un-improved pasture
- Combination of larger, more regular enclosures and smaller, irregular field patterns
- Extensive panoramic views across the Severn Estuary
- Newport wetlands' vast reed beds and saline lagoons
- Strong sense of place - open 'flatness' of the area with a lack of field boundaries and distinctive open ditch/reen system
- Linear and nucleated settlement/housing pattern with rendered and painted stone built buildings with brick detailing and slate and tiled roofs

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 16 aspect areas within the character area, of which 5 are of High value and 6 are of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 16 aspect areas within the character area, of which 4 are of High value and 8 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 20 aspect areas within the character area, of which 3 are of High value and 9 are of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 20 aspect areas within the character area, of which 6 are of High value and 1 is of Outstanding value for this aspect
- ***Geological Landscape*** – there are 13 aspect areas within the character area, of which 4 are of High for this aspect

Forces for change

The key forces for change on the character of the Caldicot Level landscape are:

- Settlement expansion pressures from strategic housing site around Undy and Magor; ribbon, infill and non-vernacular development pressures.
- Transport corridor development such as the proposed M4 around Newport is likely to further erode the integrity of Caldicot Level's character.
- Potential cumulative effects of continued small scale 'out of keeping' infrastructure and services
- Exposed, windy nature of Caldicot Level provides potential for wind energy generation. Single/small scale development of wind turbines generally out of scale and form with existing landscape; vertical elements can have a significant detrimental visual impact on the coastal levels and adjacent estuary edge. Proposals for large-scale photo voltaic arrays in 'solar farms' can also have potentially significant landscape and visual effects where poorly designed or sited.

Landscape sensitivity

Key qualities of the Caldicot Level landscape that are sensitive to inappropriate change include:

- Strong rural and historic landscape character associated with the traditional management of the field drainage system
- Proximity to, and setting within national and international environmental designations
- Setting within an Area of Archaeological Sensitivity, presence of numerous SAMs.
- Open, level, unique landscape type with clear panoramic and long distant views over Caldicot Level
- Development and flood risk

Landscape guidelines

- ***Townscape*****:** The settlement pattern within Caldicot Level is very distinctive with linear pattern of painted/rendered stone built cottages and contrasting brick detailing. Wider development is limited to scattered farmsteads:
  - » New development should strongly reference the vernacular detailing, materials and building style/type in the area, settlement form and pattern should complement the existing fabric - linear and terraced or cottage housing.
  - » Details on frontages/elevations should reflect local styles -brick highlights/detailing on corners and around windows that. Avoid large expanses of glazing

- ***Settlement Edge*:** Settlements in Caldicot Level tend to be small, linear settlements with strong relationship with adjacent roads/ linear landscape features/reens. This is of particular relevance south of Undy:
  - » New development should integrate with the existing built fabric and reflect a similar density and ratio of open space to built development.
  - » Avoid sub-urbanised treatment such as close boarded fencing, post and rail etc - use traditional materials stone and brick or hedgerow planting.
  - » Reinforce traditional open character of field ditches and reens with occasional pollarded willows.
- ***Public Access:*** Enhance public access and understanding of the special qualities of the Caldicot Level landscape.
- ***Renewable Energy*:** Ensure that proposals for wind turbine and solar farm developments are fully assessed to avoid adverse landscape and visual impacts, both individually and cumulatively, on the special qualities of the Caldicot Level landscape.

Green infrastructure opportunities

Key green infrastructure assets in Caldicot Level:

- ***Wales Coastal Path***: access to sea wall/historic defences
- ***Cycle routes***: National Cycle Route 4 and Celtic East Cycle trail
- ***Nature Reserves:*** Newport Wetlands Nature Reserve/RSPB Wetlands Centre, Great Traston Meadows Nature Reserve and Magor Marsh Nature Reserve
- ***Archaeological sites***: numerous Mesolithic, Iron age and Roman forts, bronze age and medieval sites, and Scheduled Monuments
- ***Villages***: Redwick; Whitson, Goldcliff, Nash
- ***Views:*** striking views from Wales Coastal Path along top of the sea wall over the estuary and the historic Gwent Levels landscape; extensive panoramic views over mudflats and saltmarsh across the Severn Estuary from Newport Wetlands.

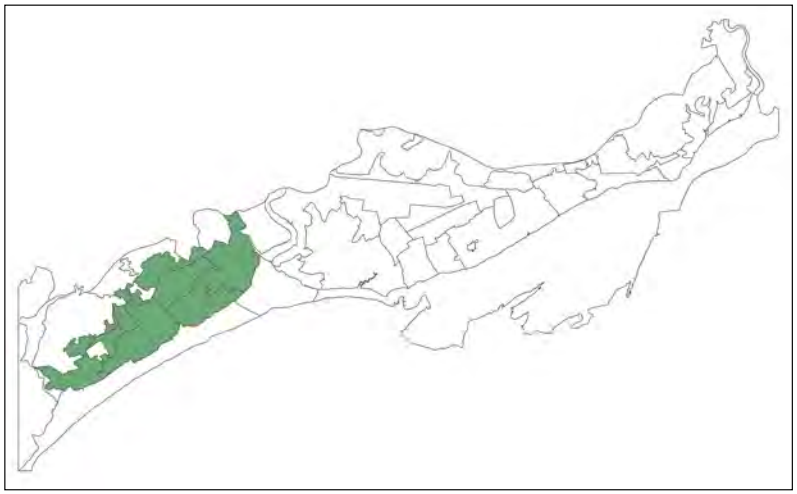
Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Caldicot Level landscape.
- ***Provision of improved pedestrian paths, rights of way and cycling routes***: to enhance connections between settlements at Caldicot, Magor and Undy and the wider Caldicot Level landscape.
- ***Landscape setting enhancement***; reinforcing character of simplistic, open and wide ranging panoramas within fringes of settlements by encouraging low density development, sympathetically designed using local building styles and materials.
- ***Settlement edge treatment***: reinforcing character and improving appearance of settlement edges by using local building styles and materials for boundary treatments.
- ***Habitat and landscape management***: restore and enhance the traditional open character and function of field ditches and reens as 'wet fences' with occasional pollarded willows through management of scrub/hedgerow encroachment along edges to enhance biodiversity and protect integrity of the drainage system; where possible, recreate traditional pattern of smaller fields and meadow management (including hay cut as preference over silage cut).

A3 – Wentlooge Level

Location

The Wentlooge Level Is an extensive character area, which extends from Cardiff and the River Rhymney to the mouth of the River Usk south of Newport.



Distinctive landscape characteristics of Wentlooge Level

- Flat and low lying, rarely rising above 10 metres AOD
- Open expanse of primarily pastoral agricultural land
- Distinctive pattern of drainage ditches or “reens” which are visually distinctive and of high ecological value
- Estuarine clay with silts and peats, forming flat topography and poorly-drained, neutral soils
- A number of linear settlements
- Highly distinctive and strong pattern of regular, rectangular small-scale fields
- Area is traversed by the London-Cardiff mainline railway and powerlines
- Rich in surviving earthworks and field patterns but also in buried archaeology

Landscape character

The Wentlooge Level is an extensive tract of low-lying reclaimed farmland, extending from Cardiff to Newport. Rarely rising above 10 metres AOD, the Level forms a large, open expanse of primarily pastoral agricultural land. Having been subject to reclamation work since the Roman times, a key landscape feature is the distinctive pattern of drainage ditches or "reens". Their pattern reflects the differing periods of reclamation. For example, the fields to the south of Marshfield are more rectangular in pattern, and enclosed by cut hedges or lined with willows. To the east of the area, the pattern is more sinuous and less defined by vegetation.

The pattern of these reens is reflected in the settlement pattern. There are a number of linear settlements, such as Broad Street Common which is a fine example of an unenclosed street common with farmsteads alongside but set back from the road (B4239). In contrast, Peterstone Wentlooge and St Brides Wentlooge are more typical nucleated settlements.

The area is traversed by the London-Cardiff railway engineered by IK Brunel for the then Great Western Railway. This had an enormous effect upon people of the area through the associated economic benefits of its construction. The sea wall along the edge of the Wentlooge Level provides open views across the Severn Estuary and beyond to the English coastline. Extensive urban development has taken place in the western part of the Level near Cardiff, but where the landscape is not built-up it retains a distinctive character. In particular, the strong and highly distinctive orthogonal field pattern appears to have been imposed uniformly on the landscape, rather than to have sprung from existing natural features.

Eastern St. Brides Sub-Area (A3.1)

This sub-area relates to a complex "irregular landscape" on higher coastal area. This landscape has formed over a long period of time; the higher coastal areas were probably recolonized in the late eleventh centuries. Lower-lying areas inland were subsequently enclosed and drained, probably in the thirteenth/fourteenth centuries. St. Brides Wharf was reclaimed in the eighteenth century.

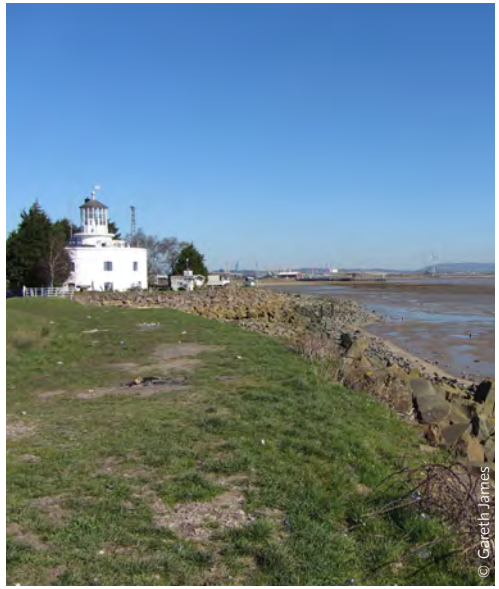
Key historic landscape characteristics:

- Diverse landscape
- Early settlement focus (near St. Brides Church),
- Irregular field pattern of small fields and sinuous roads with remnants of roadside waste,
- Dispersed settlement,
- Seawall including demolished wall,
- Drainage features include fen-banks,
- Surface ridging (mainly grips, but also rare "ridge and furrow")

This landscape occupies higher coastal land at the eastern end of Wentlooge. Tredegar Park (now the Duffryn Estate) was created in the northern part of this character area. This is a very diverse landscape, similar to the Nash/Goldcliff area. To the south of St. Brides church, an oval area defined in the field-boundary pattern probably marks the earliest settlement focus. Elsewhere, the fields are small and irregular and the roads sinuous, formerly with abundant roadside waste (indicated by long narrow fields beside the roads). The settlement pattern is largely dispersed. A relict sea wall that once ran along Wharf Reen has been demolished, though slight traces of a ramp can be seen in places. The lines of sinuous fen-banks mark the limit of this enclosed/drained landscape and the former open moors in the lower-lying back-fens. Very fine examples of surface ridging; mainly grips, but includes some "ridge and furrow" that is otherwise very rare in Wentlooge. Parts of this landscape have a relatively wooded feel, with numerous mature trees in the hedges. Other hedges are typically scrubby.

The integrity and coherence of the area are high. This is an area of landscape typical of the higher coastal lands throughout the Gwent Levels. The early settlement site at St. Brides, lines of former fen-banks, and eighteenth century reclamation of St. Brides Wharf, are components of a complex and diverse landscape, which has a high group value. There are some fine areas of surface ridging, and traces of former roadside waste.

The West Usk Lighthouse on the sea wall south of St Brides was built in 1821 by Scottish architect, James Walker. The lighthouse was on its own island up until 1856 when the land around it was reclaimed. It was a working lighthouse warning ships until 1922 when it was decommissioned. Since 1989, the West Usk Lighthouse has been a bed and breakfast.



Western St Brides Sub-Area (A3.2)

This sub-area relates to a simpler landscape, laid out within a framework of elements surviving from the Roman landscape. The major elements of this landscape are part of the Roman planned system. However, the pattern of Roman fields was largely replaced in the medieval period. A small port is documented at Peterstone from at least the sixteenth century. The place name "New Quay Gout" suggests that this may have lain in Peterstone.

Key historic landscape characteristics:

- Regular field pattern of long narrow fields,
- Significant boundaries of probable Roman origin,
- Drainage features include Peterstone Gout, the old sea wall, and a number of fen-banks (some ridgeing/surface drainage also survives),
- Limited linear roadside settlement

This landscape area occupies the higher coastal zone east of Peterstone Gout. It merges with area 15 to the east and Maerdy to the north. The principal elements are two NE-SW oriented boundaries which form continuations of elements in the Roman landscape to the west. However, the small blocks of long narrow fields between these boundaries are of medieval not Roman origin.

To the north of the main road there are a number of sinuous boundaries that represent individual episodes of enclosure in the open back-fen moor; these "fen-banks" were designed to keep freshwater from the low-lying back-fen, from flooding the old enclosed lands towards the coast. Settlements are restricted to the main road. The old sea wall and stone gout structure at Peterstone Gout are well preserved. This is an interesting landscape, at the edge of the area flooded in the post-Roman period. It is characteristic of the general Wentlooge landscape of long narrow fields and the process of reclamation of lower-lying areas through a sequence of intakes from the open moor.

The western half of this area has been affected by agricultural improvement and the construction of a golf course. Most hedges that survive are scrubby, especially to the south of St. Brides village. Further west the landscape has been extensively remodelled by a golf course and trout farm. Though not visually intrusive, they have destroyed the historic fabric of the landscape by removing many reens and grips.

Overall, the integrity and coherence of the landscape are high to the north/east, but lower to the south/west of this area. The area has suffered from agricultural improvement and the development of a golf course/trout farm complex. These developments are not visually intrusive, and the sea wall still affords fine views of an open landscape. The framework of Roman elements survives intact.

Peterstone Sub-Area (A3.3)

This sub-area relates to a "Regular landscape" of Roman date. Archaeological investigations at Rumney Great Wharf, south of Newton Farm in Rumney, have established a Roman date for the laying out of this landscape. Drainage was probably undertaken by Roman legionaries based at Caerleon. Recolonisation of the area in the high medieval period led to the establishment of Peterstone village and settlement along Broadstreet Common. The sea wall was moved back in the late medieval period. Peterstone was owned by St. Augustine's Abbey in Bristol, and this association has found its way into local tradition.

Key historic landscape characteristics:

- Regular landscape of trapezoidal blocks of very long, narrow fields dominate (of Roman origin?) street commons (some with farms of medieval origin),
- Drainage features including reens, ditches and grips, seawall (set back)

This landscape occupies the central part of the Wentlooge Level, extending from the higher coastal zone through to the low-lying back-fen. Western St. Brides and Meadry lie to the east of Broadway Reen. Trowbridge and Northern Redwick lie to the north/west. This landscape is characterised by trapezoidal blocks of very long, very narrow fields. Several major axial elements include Broadstreet Common, a fine example of an unenclosed street common with farmsteads along its edge set back from the road. The sea wall cuts uncomfortably across the landscape, and the lines of field ditches can be seen cut into the intertidal peat shelf. There is excellent grip survival.

As a surviving example of large-scale Roman reclamation, it is certainly unique in Wales, if not north-west Europe. The homogeneity of large areas, laid out in exceptionally long narrow fields, contrasts with the complex landscape along Broadstreet, where farms of medieval origin are strung out along an unenclosed street common. The area around Peterstone village and along Broadstreet Common is fairly wooded. Otherwise, the character area presents quite an open landscape, with many field ditches filled with reeds rather than having hedges. Many areas retain a very strong feeling of a landscape comprised of long narrow fields.

Overall, this landscape is of enormous importance, retaining a high degree of integrity and coherence. On the whole it is in fine condition, having escaped large-scale agricultural improvement. The sea wall affords very good views, though industrial development to the west and urban sprawl to the north does impinge.

Rumney Sub-Area (A3.4)

This sub-area relates to a complex "irregular landscape" with a dispersed settlement pattern. This is a landscape typical of piecemeal medieval reclamation, similar to Eastern St. Brides. The Manor of Rumney has a wealth of medieval documents relating to sea defences and regulation of the drainage system. A water-mill lay around the mouth of Pill Melyn Reen. A setting back of the sea wall at Newton, in the late sixteenth century, is one of the few such occurrences to be documented. The wall that was constructed (itself now abandoned) is of great importance and a Scheduled Ancient Monument. The remains of a Roman sea defence have been discovered here, and it is likely that this was built by Roman soldiers based at Caerleon to stop inundation from the sea. As many horse bones from the period have been excavated at Rumney Great Wharf (once a Roman settlement), it is believed that the Romans may have grazed their cavalry horses in the area.

Key historic landscape characteristics:

- Irregular field pattern of small irregular shaped fields (preserving lines of former tidal creeks)
- Site of medieval water mill
- Sinuous roads with roadside waste
- Dispersed settlement with a small hamlet at Newton
- Seawall

This landscape occupies the higher coastal land to the south-west of the Wentlooge Level, and extends around the lower-lying fen-edge to the north of Pill-du Reen.

The landscape is characterised by small irregular shaped fields, incorporating the meandering lines of former tidal creeks; Pill Melyn is typical, and was used for a medieval water mill. The roads are sinuous and had an abundance of roadside waste. Settlement was dispersed, with a small hamlet at Newton. This is a landscape typical of the coastal zone of the Gwent Levels, containing many landscape features. There has been considerable development, and many of the areas that remain in agricultural use have been greatly improved. The area is also overlooked by housing on surrounding uplands. Many hedges have been removed, though the lanes tend to be well wooded. The open nature of this landscape affords very little screening for the residential and industrial/commercial business park developments. However, those areas that have not yet been developed are of great importance as a buffer zone, between visually intrusive developments and the well-preserved Roman landscapes.

Trowbridge Sub-Area (A3.5)

This sub-area relates to a fairly simple landscape in the low-lying back-fen. The landscape was probably created in the medieval period, but after the higher coastal areas were colonised. There are a few documentary references to this area which was probably used simply for summer pasture and meadow.

Key historic landscape characteristics:

- Regular field pattern of rectangular fields
- Green lanes
- Minor agricultural settlement
- Drainage includes major reens and very fine surface ridging

This landscape occupies part of the lower-lying back-fen area of the Wentlooge Level mainly in the parish of St. Mellons. It borders the Roman landscape of Peterstone to the south and Rumeny to the west. This is a very remote area of landscape, consisting of small blocks of rectangular fields, within a framework provided by major reens and minor green lanes. There are no major roads and just one farm. Some very fine areas of surface ridging survive. Hedges are varied, but being characteristic of the lower-lying parts of Wentlooge, they are often absent; reed filled field ditches with an occasional willow are typical, giving a strongly wetland feel. They afford little screening for the housing and light industrial developments to the north and west.

The integrity and coherence as a historic landscape have been damaged, but this area still has a great value. This was an area of fairly typical Wentlooge Level landscape, comprising long narrow fields, the occasional major reen and an absence of settlement. The surface ridging is particularly well preserved. Piecemeal development has caused some fragmentation, but these areas retain an ecological value and could provide recreational green spaces. They also serve as a "buffer zone" between development to the north and the better preserved landscapes to the south.

Marshfield/Coedkernew Sub-Area (A3.6)

This sub-area relates to a low-lying back-fen landscape north of major "catchwater drain". The landscape is broadly medieval, though Drenewydd/Percoed Reen could be a Roman drainage feature. This area, known as "Black Moores", is the lowest-lying in all the Gwent Levels. Discoveries of prehistoric 'bog oaks' from the peat, which lies just below the surface, are explained in local tradition as having been washed there during the floods of 1606.

Key historic landscape characteristics:

- Mixed fieldscape arranged in small blocks of rectangular fields,
- Major and important catchwater drain (Drenewydd/Percoed Reen),
- Parochial centres (Marshfield and Coedkernew)
- Dispersed fen-edge agricultural settlement

This landscape represents the fen-edge and low-lying back-fen area between Marshfield village in the west and Tredegar Park in the east. It is bounded by Drenewydd/Percoed Reen to the south.

Drenewydd/Percoed Reen appears to be a "catchwater drain"; it collects freshwater from the uplands and channels it into Broadway Reen that flows to the coast. It may be Roman in date, having a close parallel to the Lincolnshire Car Dyke in the English Fenland. The pattern of fields is very mixed, but mainly they are arranged in small blocks of rectangular fields, rather different to the long narrow fields found to the south. The fen-edge is deeply indented with a series of small valleys, which along with several "islands" of bedrock give some areas the impression of being quite enclosed by the uplands. Recent hedge planting is totally out of place here. A number of farms occur around the fen-edge, along with Coedkernew and Marshfield churches. This is a very open landscape, typical of the low-lying back-fens. Hedges are few, affording fine views of the fen-edge/bedrock margins.

The integrity and coherence of this area are considered to be high. There are relatively few areas of low-lying back-fen surviving where the interface with the fen-edge is preserved. This is a fine example, with a wide range of landscape elements; the churches at Marshfield and Coedkernew, and a series of fen-edge farms overlook it. Drenewydd/Percoed Reen is of great importance to the drainage of the Gwent Levels, and possibly Roman in date. The area is largely secluded and quiet, with few developments impinging upon it.

Maerdy Sub-Area (A3.7)

This sub-area relates to a "regular landscape" of medieval/post-medieval date in low-lying back-fen. The long narrow fields, though superficially similar to the Roman landscape of Peterstone, are of different dimensions. This landscape was created through the enclosure of this block of open moor sometime in the medieval/post-medieval period.

Key historic landscape characteristics:

- Former open moor
- Regular unified fieldscape of long narrow fields (ie single operation),
- Drainage features mainly reens,
- Dispersed settlement (includes Maerdy - medieval Reeve's house)

This area is intermediate in elevation between the higher coastal lands to the south, and the lowest-lying back-fen to the north. The distinct and well defined block of landscape is bounded by Drenewydd and Percoed Reen to the north, Broadway Reen to the west, and the former fen-banks of St. Brides to the south and east.

This large area can be divided into four blocks of long narrow fields (divided by Horsecroft and Summerway Reens, and Hawse Lane). They represent large areas of open land, enclosed and drained as a single operation. There are two farms; Maerdy was probably founded when the area east of Hawse Lane was enclosed, while Hawse Farm, which lies beside one of St. Brides' fen-banks, may have been responsible for the enclosure of the whole block of landscape to the north. The place-name Maerdy (medieval Reeve's house) is interesting, the location of Maerdy farm is indicative of the formal control of grazing on the formerly open back-fen Moor during the medieval period. These long narrow fields are characteristic of the Wentlooge Level.

The landscape here was created through the enclosure and drainage of a large block of open moor, beyond the old enclosed lands of St. Brides. Two discrete landscapes can be identified, associated with Maerdy and Hawse Farms. This is a very open landscape, and the reed-filled ditches give a strong wetland feel, typical of the lower-lying back-fen areas.

Overall, the integrity and coherence of this area are extremely high. The two landscapes represent discrete examples of landscape creation. The completeness of these landscapes makes them of great importance. Walking north down Hawse Lane gives the impression of the back-fen being lower than the coastal areas to the south. The area has suffered from agricultural improvement, but remains a sense of remoteness despite the presence of the railway and powerlines. There are fine views of the relatively unspoilt rolling upland farmland to the north.

What's important and why?

Key Qualities of Wentlooge Level

- The nature conservation value is outstanding, the reens are rich in plant species and communities, many of which are rare or absent in other Level systems
- Distinctive lowland reclaimed landscape of important geological, ecological, historical and cultural interest
- Flat open character provides links with the wider Gwent Levels to the east and seawards to the Severn Estaury
- Characteristic rectilinear network of drainage ditches/reens are visually distinctive and of high ecological value
- Sparse settlement pattern of small, isolated farms with rural roads usually following drainage ditch patterns
- Rural, agricultural character 'typical' of the Gwent Levels landscape
- Flat, low-lying landform with high water-table
- Characteristic medium to small-scale, narrow fields with distinctive NW-SE orientation and orthogonal pattern of pastures, reens and hedgerows
- Open, exposed and windswept character particularly across south of area

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 13 aspect areas within the character area, of which 4 are of High value and 5 are of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 11 aspect areas within the character area, of which 3 are of High value and 5 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 14 aspect areas within the character area, of which 2 are of High value and 7 are of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 16 aspect areas within the character area, of which 4 are of High value and 1 is of Outstanding value for this aspect
- ***Geological Landscape*** – there are 7 aspect areas within the character area, of which 3 are of High value for this aspect

Forces for change

The key forces for change on the character of the Wentlooge Level landscape are:

- Neglect and poor maintenance of drainage ditches in some locations
- Loss of landscape integrity through gradual change in character from development
- Increased pressure for development around existing settlements and associated with major transport routes (eg: M4 around Newport motorway proposal).
- Loss of vegetation associated with drainage network.
- Intensification of existing land uses, such as golf courses, fishing lakes etc.
- Continued development pressure resulting in loss of integrity of historic landscape and drainage ditch system
- Medium to longer term effects due to global warming and need to

improve/enhance sea defences

- Localised but significant landfill and land-raising activity.
- Potential for new habitat creation and landscape enhancements following restoration of Lamby Way landfill site.
- Enhancement and development of recreational potential of coastal edge and links into wider 'network' of features.
- Significant visual intrusion in parts of area including built development, roads and railway, pylons, sub-stations, landfill and soil-stripping activities;
- Widespread urban fringe influences such as horsiculture, fly-tipping, vandalism etc.
- Exposed, windy nature of Wentlooge Level provides potential for wind energy generation. Single/small scale development of wind turbines generally out of scale and form with existing landscape; vertical elements can have a significant detrimental visual impact on the coastal levels and adjacent estuary edge.
- Proposals for large-scale photo voltaic arrays in 'solar farms' can have potentially significant landscape and visual effects where poorly designed or sited.

Landscape sensitivity

Key qualities of the Wentlooge Level landscape that are sensitive to inappropriate change include:

- Strong rural and historic landscape character associated with the traditional management of the field drainage system
- Location of the area within a number of designated nature conservation sites.
- Notable presence of archaeologically sensitive remains and proximity to Scheduled Monuments.
- Visual context and unique topographical features.
- High quality, long distance views over the Severn Estuary from sea wall.

Landscape guidelines

- ***Townscape***: The settlement pattern within Wentlooge Level is very distinctive with linear pattern of painted/rendered stone built cottages and contrasting brick detailing. Wider development is limited to scattered farmsteads:
  - » New development should strongly reference the vernacular detailing, materials and building style/type in the area; settlement form and pattern should complement the existing fabric - linear and terraced or cottage housing.
  - » Details on frontages/elevations should reflect local styles -brick highlights/detailing on corners and around windows that. Avoid large expanses of glazing.
- ***Settlement Edge***: Settlements in Wentlooge Level tend to be small, linear settlements with strong relationship with adjacent roads and other linear landscape features such as field ditches/ reens:
  - » New development should integrate with the existing built fabric and reflect a similar density and ratio of open space to built development.
  - » Avoid sub-urbanised treatment such as close boarded fencing, post and rail etc - use traditional materials stone and brick or hedgerow planting.
  - » Reinforce traditional open character of field ditches and reens with occasional pollarded willows.
- ***Public Access***: Enhance public access and understanding of the special qualities of the Wentlooge Level landscape.

- ***Landscape management***: The continuation of traditional land management practices that help maintain distinctive features of the Wentlooge Level landscape should be encouraged that:
  - » Reinforce positive attributes of the landscape's character, and ameliorate negative attributes
  - » Conserve important habitats and ecological features
  - » Conserve and strengthen the distinctive pattern and visual character of the landscape
  - » Protect the most intact and sensitive areas of the Wentlooge Level landscape from loss or damage
  - » Protect and strengthen the historic network of reens and ditches with their natural vegetation communities
  - » Protect and strengthen the distinctive pattern of rectilinear fields, typically under permanent pasture
  - » Protect mature trees, including distinctive pollarded willows alongside field ditches and reens
  - » Protect characteristic timber bridges and fences within the ditch network
  - » Protect and strengthen the rural character of the landscape
  - » Maintain the flat, low-lying landform and characteristic rectilinear drainage network, avoiding the creation of artificial landform or the infilling or realignment of reens.
- ***Renewable Energy***: Ensure that proposals for wind turbine and solar farm developments are fully assessed to avoid adverse landscape and visual impacts, both individually and cumulatively, on the special qualities of the Wentlooge Level landscape.

Green infrastructure opportunities

Key green infrastructure assets in Wentlooge Level:

- ***Wales Coastal Path***: access to sea wall/historic defences
- ***Cycle routes***: National Cycle Route 4
- ***Archaeological sites***: numerous Mesolithic, Iron age, Roman, bronze age and medieval sites, and Scheduled Monuments
- ***Villages***: Marshfield; St Brides; Peterstone
- ***Views***: extensive panoramic views from the Wales Coastal Path along top of the sea wall across the Severn Estuary and inland views of the historic Gwent Levels landscape overshadowed by distant hills.

Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Wentlooge Level landscape (e.g. creation of new gateway onto the Wales Coast Path at Lighthouse Park/Inn incorporating interpretation shelter, sculpture, planting, etc).
- ***Provision of improved pedestrian paths, rights of way and cycling routes***: to enhance connections between Cardiff and Newport, Tredegar House Country Park and the wider Wentlooge Level landscape.
- Landscape setting enhancement; reinforcing character of simplistic, open and wide ranging panoramas within fringes of settlements by encouraging low density development, sympathetically designed using local building styles and materials.
- ***Settlement edge treatment***: reinforcing character and improving appearance of settlement edges by using local building styles and materials for boundary treatments.

- ***Habitat and landscape management***: restore and enhance the traditional open character and function of field ditches and reens as 'wet fences' with occasional pollarded willows through management of scrub/hedgerow encroachment along edges to enhance biodiversity and protect integrity of the drainage system; where possible, recreate traditional pattern of smaller fields and meadow management (including hay cut as preference over silage cut).

3.4 Estuary (B)

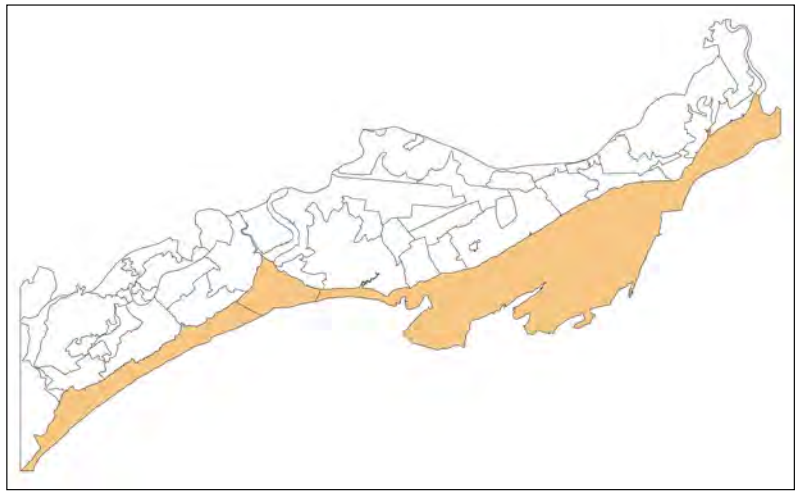
Within the study area, the Estuary Landscape Character Type comprises the dramatic estuarine seascape and expansive coastal inter-tidal foreshore between the mouth of the River Wye in Monmouthshire and the mouth of the River Rhymney in Cardiff.

The Landscape Character Areas found within this Landscape Character Type are described below.

B1 – Severn Estuary

Location

The Severn Estuary within the study area is an expansive seascape character area comprising the Welsh part of the Estuary.



Distinctive seascape characteristics of the Severn Estuary

- Open character of the seascape affording strong intervisibility with the coastline in England.
- Expansive funnel shape of estuary, immense tidal range and south-west orientation.
- Susceptible to extreme weather conditions that have a significant bearing on its character.
- Extensive rocky intertidal area, tidal flats and saltmarshes of international importance for wintering waterfowl.
- Varied sea bed of flats and bars, with associated shallow waters and numerous shoals.
- Strong tidal streams, turbidity and extreme physical conditions of liquid mud and tide-swept sand and rock.
- Rich natural resources exploited by humans for millennia, with evidence dating back to the earliest hunter-gatherers.
- Strong associations with long history of coastal reclamation, embankments and ditches on the adjacent Gwent Levels.
- Long-standing strategic importance for international trade and maritime navigation, with numerous ship wrecks.
- Remains of medieval intertidal fishtraps (traditional putcher fishing method) located at Goldcliff, West Pill and Caldicot.
- Views overlooking the estuary/Gwent Levels from the road bridges provide a charismatic maritime gateway to Wales.
- Views of coastal development and road bridges contrast with the open, vast vistas of the Estuary/adjacent Gwent Levels.

Seascape character

The Severn Estuary within the study area comprises the south-west orientated Severn Estuary, fed by the major rivers of the Severn, Wye and Usk. The estuary expands in width from the mouth of the River Severn as it flows westwards to meet the Bristol Channel just south of Barry, creating a classic funnel shape. The funnelling effect of the adjacent land (the South Wales coastline to the north and the North Somerset coast of England to the south) has a profound effect on the physical conditions and overall character of the Estuary.

This includes in particular the strength and range of the tides – the coastal geometry builds up the largest tidal bore in the UK further up the estuary, and it boasts the second highest tidal range in the world (between 12 and 14 metres). The strong tidal streams combined with the gradient of the seabed and thick mud, sand and gravel sediments produce waters of high turbidity with an opaque brown coloration. Constantly shifting sediments and water depths present further hazards to navigation. Entrance channels to the port at Newport are maintained by dredging due to the constant transportation and build-up of sediment. The marine sediments found in the estuary support the national construction industry, with large areas licenced for dredging.

A wide rocky intertidal area created by Triassic and Jurassic rocks, including expansive tidal flats are visible at low tide. From the Old French meaning 'snout', Groynes built to check the erosion of the shore are distinctive structures seen along the coastline. The Triassic and Jurassic rocks are also evident in the rocky promontory around Sudbrook Point and Black Rocks. The coastal hinterland is defined by the flat expanses of reclaimed Levels between Cardiff and Chepstow, separated from the water by a five metre high coastal bund of medieval (or earlier) origin.

The unique conditions of the estuary today give rise to internationally important habitats, with much of the character area falling within the Severn Estuary Special Area of Conservation (SAC), along with large sections of the intertidal zone also designated as a Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI). The tidal flats, saltmarshes and wet grasslands are home to large numbers of overwintering and migratory birds, including at the Newport Wetlands National Nature Reserve, whilst complex biological communities are associated with the tide-swept expanses of sand, mud and rock. The Estuary's waters support the richest and most diverse populations of non-exploited fish in the UK with its sea lamprey and twaite shad populations considered to be larger than in any other estuary.

The coastal backdrop to this character area is characterised by its mixture of rural, urban and industrial land uses. The two Severn bridges, mainline rail and the M4/M48 corridors, docks, Uskmouth Power Station and vertical industrial structures (including pylons and wind turbines on Caldicot Level and at Avonmouth) form prominent skyline features when viewed from the estuary. There are a number of outfalls into the Severn Estuary from storm water discharges, sewage treatment works, industry and power station cooling waters. The character area supports a range of coastal and water-based recreational opportunities. The coastline is traversed by the Wales Coast Path, skirting a small distance inland in places around inlets and estuary mouths.

The orientation and channelled nature of the character area make it susceptible to extreme weather conditions sweeping in from the Atlantic, including storm surges. During these periods, a sense of danger and relative wildness can pervade despite the proximity of settlement and associated 'safety'. Numerous navigation markers, including white and red light buoys and fog horns guide vessels around the submerged sand bars, rocks and spits - the flashing lights contributing to the night-time character of the area and its skylines when viewed from the coastline.

The flat coastline and its open character afford expansive views across and beyond the character areas to the English coastline, including to Bristol, Portishead, Clevedon and Weston-Super-Mare, Hinkley Nuclear Power Station as well as the uplands of the Quantock Hills AONB and Exmoor National Park. Cars travelling along the two Severn Bridges also overlook the area and the wider Bristol Channel, providing a charismatic maritime gateway into Wales from England. When viewed from the Somerset coast, the South Wales uplands and the Brecon Beacons provide a dramatic backdrop rising above the flat coastline and open water, conveying a contrasting sense of remoteness as well as strong visual unity with the upland landscapes to the south.

Despite the influence of industrial and urban coastal development, havens of tranquillity and a sense of wildness are provided by the expansive intertidal saltmarshes, mudflats and shores of the estuary – all closely accessible via the Wales Coast Path yet not visible more widely from adjacent reclaimed land because of the sea embankment. The smells and sounds of the estuary and its associated birdlife stand in stark contrast to the sounds of road traffic, views of development and glimpses of large-scale container ships travelling to and from the major ports.

Levels Lingo - **Lave Net**

Lave: to wash against, to flow along or past. A type of large hand-held net primarily designed to catch salmon. Lave nets are peculiar to the Severn Estuary and the earliest mention is in 1639.

The Severn Estuary character area within the study area has been divided into three sub-areas of local seascape character as follows:

The Welsh Grounds Sub-Area (B1.1)

The northern, eastern and southern boundary of the sub-area marks the maritime boundary between England and Wales in the east, and the extent of the tidal mudflats to the south. The western boundary marks the edge of the Usk estuary. The Welsh Grounds sub-area is an open and windy seascape, with long views across the Severn Estuary to the English coastline, framed by the Severn Bridge and Second Severn Crossing to the north. The strong tidal action results in a visually diverse seascape from the exposed mudflats, sandbanks and ragged rock outcrops with views across the high tidal fast flowing estuarine waters typical of the Severn. Large-scale industrial development visually intrudes upon this open and exposed seascape in particular at Sudbrook and Newpark on the Welsh side, and the Severnside Reach along the English coastline. The open coastal character dominates the area, and where it borders the Caldicot and Mathern Levels the flat reclaimed farmed pastures sits in juxtaposition to the estuarine edge. When uncovered at low tide, the extensive area of inter-tidal mud and sand is very exposed, and forms a distinctive element of the seascape. Relict structures relating to traditional putcher fishing are evident in the foreshore.

The Usk Estuary Sub-Area (B1.2)

The sub-area is an extensive area of intertidal mud around the mouth of the River Usk. It includes the Newport navigation channel that connect the River Usk to the wider Severn Estuary. The Usk Estuary sub-area is very exposed, covered with water at high tide and forms a distinctive area within the Severn Estuary. Relict structures relating to traditional putcher fishing are evident in the foreshore. Extensive views are possible across the Severn Estuary. Lighthouses on both sides of the Usk Estuary guide shipping into the docks at Newport.

Cardiff Bay Sub-Area (B1.3)

The south, east and north-eastern boundaries of the sub-area are defined by the extent of the shallow waters associated with Cardiff Bay and the tidal mudflats. The Cardiff bay sub-area includes an extensive area of inter-tidal mudflats bordering Wentlooge Level. The area is very exposed, covered with water at high tide and forms part of the wider seascape. Extensive views are possible across the Severn Estuary. The area includes the mudflats at the mouth of the River Rhymney at the western edge of Wentlooge Level. Here, it is an open and windy seascape, with long views to the English coastline and the islands of Flatholm and Steepholm. The strong tidal action results in an extensive area of exposed mudflats. The raised landform of the Lamby landfill site on Wentlooge Level east of Cardiff visually intrudes upon this open and exposed seascape. Further east, the open coastal character is retained.

What's important and why?

Key Qualities of the Severn Estuary

- Strong visual connection with the Gwent Levels to the north.
- Highly distinctive seascape rare in South Wales with strong sense of place, isolation, solitude and wildness.
- Dramatic, open, exposed seascape in stark contrast with the more typically rural agricultural landscapes of the Gwent Levels.
- A dynamic and distinctive seascape defined by its simplicity, exposure and remoteness.
- Dominated by the waters of the estuary and open, exposed coastal flats.
- Intertidal areas of mudflats, sand banks, shingle and rocky outcrops and coastal salt marsh in places of outstanding nature conservation value for birds and other species
- Areas of historically reclaimed coastal land and old sea defences.
- Numerous archaeological finds from the Mesolithic, Bronze Age, Roman and medieval periods.
- Views overlooking the Estuary/Gwent Levels from the road bridges provide a charismatic maritime gateway to Wales.
- Views of coastal development and road bridges contrast with the open, vast vistas of the Estuary/adjacent Gwent Levels.
- Flat coastline and open character afford expansive long distance views across the Estuary to the English coastline, including the Quantock Hills and Exmoor.
- Viewed from the Somerset coast, the South Wales uplands and the Brecon Beacons provide a dramatic backdrop rising above the low-lying Gwent Levels coastline and open water.

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 2 aspect areas within the character area, of which 2 are of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 2 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 9 aspect areas within the character area, of which 1 is of High value and 8 are of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 13 aspect areas within the character area, of which 2 are of High value and 9 are of Outstanding value for this aspect
- ***Geological Landscape*** – there are 10 aspect areas within the character area, of which 1 is of High value for this aspect

Forces for Change

The key forces for change on the character of the Severn Estuary seascape are:

- Visual and noise impacts of potential expansion of industrial and retail/commercial development in coastal areas.
- Development can pose potential threat to existing geological, geomorphological or biodiversity features.
- Development of on-shore and/or off-shore wind farms potentially out of scale and form with the simple, open horizontal seascape character of the estuary where vertical elements could have a significant visual impact.
- Potential for large-scale tidal lagoon schemes with potential threats to biodiversity and cumulative visual impacts.

Seascape sensitivity

Key qualities of the Severn Estuary seascape that are sensitive to inappropriate change include:

- Location of the area within a number of designated nature conservation sites.
- Notable presence of archaeologically sensitive remains.
- Visual context and unique topographical feature.
- High quality, long distance views along and over the Severn Estuary.
- Lack of existing development and subsequent sensitivity to vertical elements.

Seascape guidelines

- ***Seascape Setting***:
  - » Views into and out of the area are wide, panoramic and extensive across the adjacent coastline and across the Severn Estuary. Inland, the views are over low lying Levels, adjacent reclaimed farmland and to edges of some settlements.
  - » Further expansion of these areas should also be considered in relation to visual impacts upon the area, avoiding large scale development mass and form and strong vertical elements.
  - » Whilst small-scale individual development may be acceptable, the cumulative impacts of this on the area could be damaging.
  - » Retain the simple, open, exposed nature of the seascape.
- ***Public Access***:
  - » Enhance public access and understanding of the special qualities of the Seven Estuary seascape.
  - » Improve access links along the Wales Coast Path, and access to sites of archaeological and cultural interest along the coastline.
- ***Renewable Energy***: Ensure that proposals for off-shore wind and tidal energy development are fully assessed to avoid adverse landscape and visual impacts, both individually and cumulatively, on the special qualities of the Severn Estuary landscape.

Green infrastructure opportunities

Key green infrastructure assets in the Severn Estuary:

- ***Severn Estuary European Marine Site***: with extensive areas of high biodiversity value (SAC, SPA, Ramsar site and SSSI) and importance for overwintering and wading birds, marine and intertidal ecosystems.
- ***Archaeological sites***: Mesolithic, bronze age and medieval.

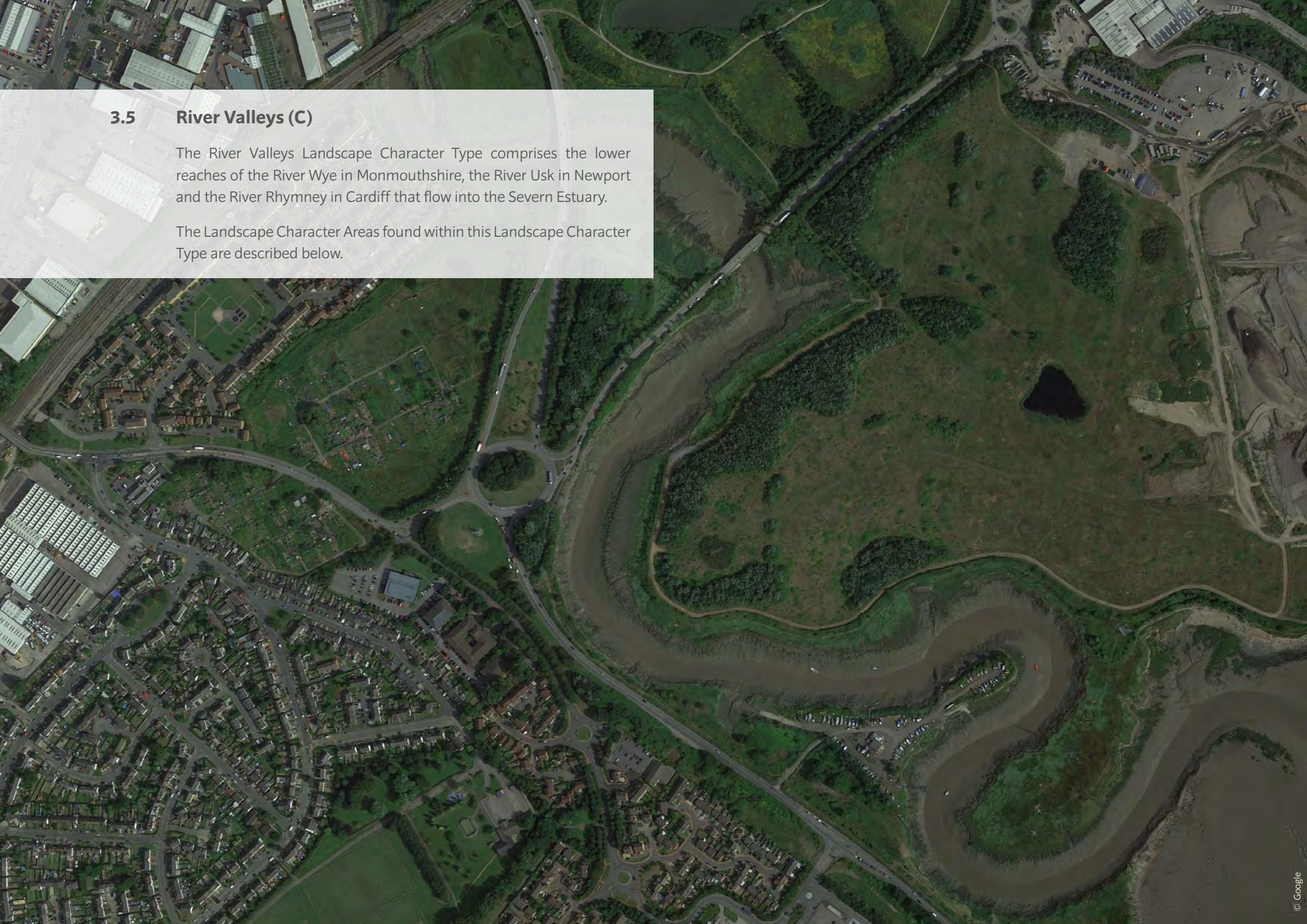
Opportunities for improvement:

- ***Seascape setting***: reinforcing character of simplistic, open and wide ranging panoramas.
- ***Habitat and landscape management***: intertidal habitat enhancements to improve and protect biodiversity; management of public access in coastal areas of high nature conservation value for birds that are sensitive to disturbance to allow birdlife and marine ecosystems to be experienced without adverse impacts.

3.5 River Valleys (C)

The River Valleys Landscape Character Type comprises the lower reaches of the River Wye in Monmouthshire, the River Usk in Newport and the River Rhymney in Cardiff that flow into the Severn Estuary.

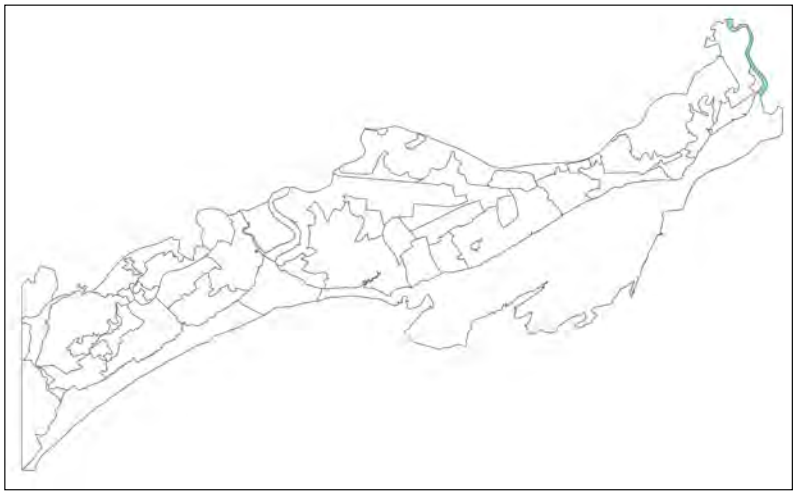
The Landscape Character Areas found within this Landscape Character Type are described below.



C1 – Lower River Wye

Location

The Lower River Wye character area extends from Chepstow to the confluence of the River Wye with the Severn Estuary.



Distinctive landscape characteristics of the Lower River Wye

- Meandering course of the River Wye past Chepstow, becoming tidal at its confluence with the Seven Estuary.
- Strong flowing river set within a narrow gorge at Chepstow.
- Chepstow Castle and iron bridge dominates the gorge.
- Wider and slower flowing river towards its confluence with the Seven Estuary adjacent to Mathern Level.
- Open semi-developed floodplain to south of Chepstow near train station.
- Evidence of riverside settlements, weirs and disused wharves found on the lower reaches.

Landscape character

The Lower River Wye character area is dominated by the River Wye running on its natural course within its lower stages past Chepstow. becoming tidal towards the south at its confluence with the Seven Estuary. At Chepstow, it is a strong flowing river set within a narrow gorge. The river is an important natural barrier and is crossed at relatively few points, such as Chepstow with its strategically located castle. The cast iron bridge at Chepstow is a positive feature in the riverscape. Riparian vegetation varies from dense tree cover to pasture, with an open semi-developed floodplain to the south of Chepstow near the train station. The river tends to be wider and slightly slower flowing towards its confluence with the Seven Estuary. There is evidence of riverside settlements, weirs and disused wharves along the lower reaches of the River Wye.

What's important and why?

Key Qualities of the Lower River Wye

- A very strong sense of place provided by the dramatic steep sided gorge, woodland and the river.
- The river and associated landscapes has a strong integrity.
- Wooded slopes and River Wye provides a distinctive landscape setting for settlement.
- Views of Chepstow castle and from the iron bridge.
- Historic settlements, weirs and evidence of disused wharves.

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there is 1 aspect area within the character area, this is of High value for this aspect
- ***Cultural Landscape*** – there is 1 aspect area within the character area, which is off Outstanding value for this aspect
- ***Landscape Habitat*** – there are 3 aspect areas within the character area, of which 2 are of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 4 aspect areas within the character area, of which 2 are of Outstanding value for this aspect
- ***Geological Landscape*** – there are 3 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect

Forces for change

The key forces for change on the character of the Lower River Wye landscape are:

- Incremental land diversification, changes from agricultural land use to leisure/tourism; campsite/caravan outdoor activity centres.
- Incremental change of use/extension of existing properties with limited recognition of scale of building and use of traditional materials.

Landscape sensitivity

Key qualities of the Lower River Wye landscape that are sensitive to inappropriate change include:

- Visual context, backdrop and setting as gateway to the Wye Valley AONB.

Landscape guidelines

- ***Settlement Edge***: Maintain relationship with surrounding valley landscape and vegetation pattern.
- ***Landscape Setting***: Incorporate views into and out of settlements, across and north and south along the river valley:
  - » Avoid development that breaks the skyline, small scale that sits down into landscape.
  - » Enhance green infrastructure to reinforce connections with surrounding areas.
  - » Avoid suburbanised treatments on rural interface.
- ***Public Access***: Enhance public access and understanding of the special qualities of the Lower River Wye landscape.

Green infrastructure opportunities

Key green infrastructure assets in the Lower River Wye:

- ***Promoted Routes***: Offa's Dyke, Wye Valley Walk
- ***Public Rights of Way***: throughout the area giving access to cross authority boundary access

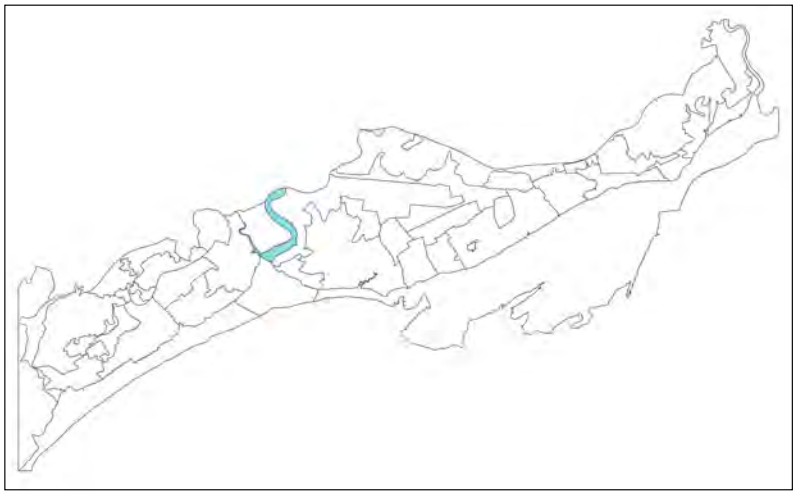
Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Lower River Wye landscape.
- ***Provision of improved pedestrian paths, rights of way and circular walking routes***: to enhance connections between settlements via existing woodlands, open and green spaces to the wider countryside and destinations.
- ***Provision of improved cycling route links***: to connect into local cycle networks.
- ***Habitat and landscape management***: restoration of riverside habitats and management of existing green spaces.

C2 – Lower River Usk

Location

The Lower River Usk character area extends from the centre of Newport to the confluence of the River Usk with the River Ebbw, which in turn both discharge into the Severn Estuary.



Distinctive landscape characteristics of the Lower River Usk

- Natural, linear riparian feature within the urban area of Newport.
- Wide grey muddy banks, with stone and "beaches" on inside bends at lower levels exposed at low tide.
- Banks comprising walls and hard edges in places, mainly towards the centre of Newport.
- Industrial heritage of former riverside docks.
- Transporter Bridge and City Bridge as distinctive crossings.
- Rubbish exposed at low tide gives sense of neglect.
- Limited public access to and along much of the river.
- Dramatic contrasts to riverscape between high and low tide.
- Vegetation is of a primarily marginal, riparian character.

Landscape character

The character area comprises the tidal corridor of the Lower River Usk corridor from the centre of Newport to the Severn Estuary including its watercourse, adjacent river banks, flood embankments and riparian vegetation. The river is an important natural, linear feature within the urban area of Newport. With its deep and wide navigable course, the River Usk has allowed for centuries of use since Roman times. In the 19th Century, the town docks of Newport evolved to become the primary port to the South Wales valleys, handling coal exports from

Wales to the world. Wide and powerful and full of sediment, the river has a modified, straightened course in places. It has wide grey muddy banks with stone and "beaches" on inside bends at lower levels exposed at low tide, indicating a large tidal range. The banks comprise walls and hard edges in places, mainly towards the centre of Newport. Some more recent development addresses the river and has created vibrant riverside public spaces. There is also evidence of older riverside docks which contribute to the distinctive character of the area, but are no longer used. Much development does not address the river or use it in a positive way. The 74m high Newport Transporter Bridge is one of Newport's most spectacular landmarks; it is one of only two Transporter Bridges still working in Britain, and one of seven in the world. The bridge was designed by French engineer Ferdinand Arnodin to accommodate the passage of tall-masted ships on the tidal river. Built and opened in 1906, the bridge is now a Grade I Listed structure. Located to the north of the Transporter Bridge is the City Bridge, a modern 190m steel arch road crossing which celebrates the City of Newport's industrial heritage. These bridges are two of seven bridges that celebrate the relationship between the City and the River Usk.

Rubbish is exposed in the tidal mudflats at low tide giving the river a sense of neglect. There is limited public access along much of the river. The tidal range provides dramatic contrasts between high and low tide, and the river is an important biodiversity resource for both fish and as a corridor for otters to pass through the city. The vegetation along the course of the river varies but is primarily of a marginal, riparian character with marsh, scrub and trees in places. There is also some limited marginal reed-like vegetation in lower parts where there is less intense development.

What's important and why?

Key Qualities of the Lower River Usk

- Strong sense of place provided by the industrial heritage of the dis-used riverside docks and the dramatic Transporter Bridge seen in juxtaposition to the river.
- Natural, linear feature within the urban area of Newport.
- Dramatic contrasts in riverscape character between high and low tide.
- Riverine habitats of outstanding nature conservation value.

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 5 aspect areas within the character area, of which 3 are of High value and 2 are of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 7 aspect areas within the character area, of which 2 are of High value and 4 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 5 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 5 aspect areas within the character area, none of which are of High or Outstanding value for this aspect
- ***Geological Landscape*** – there are 3 aspect areas within the character area, none of which are of High or Outstanding value for this aspect

Forces for change

The key forces for change on the character of the Lower River Usk landscape are:

- Incremental changes from regeneration of dis-used docks and enhancement of riverside public spaces.

Landscape sensitivity

Key qualities of the Lower River Usk landscape that are sensitive to inappropriate change include:

- Visual context, backdrop and setting as approach to Newport and as a gateway to the Wentlooge and Caldicot Levels.

Landscape guidelines

- ***Settlement Edge***: Enhance and improve quality of urban riverside environment. Flytipping/litter management.
- ***Public Access***: Enhance public access and understanding of the special qualities of the Lower River Usk landscape
- ***Landscape Management***: Riparian vegetation management.

Green infrastructure opportunities

Key green infrastructure assets in the Lower River Usk:

- ***River Usk***: SAC and SSSI
- ***Promoted Routes***: Wales Coast Path, Usk Valley Walk
- ***Public Rights of Way*:** riverfront walk giving access to the Wales Coast Path

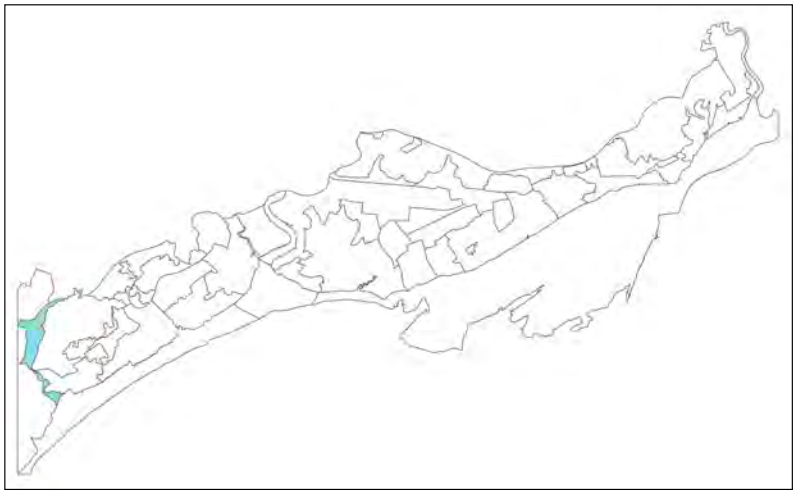
Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Lower River Usk landscape.
- ***Provision of improved pedestrian and cycling route links***: to facilitate pedestrian and cycle access along the River Usk and connect into local cycle networks.
- ***Habitat and landscape management***: restoration of riverside habitats.

C3 – Lower River Rhymney

Location

The Lower River Rhymney character area within the study area extends through the eastern edge of Cardiff to the river's confluence with the Severn Estuary.



Distinctive landscape characteristics of the Lower River Rhymney

- Flat, narrow floodplain with strongly meandering river course and oxbow lake
- River bounded by semi-rural open fields and rough grassland/ scrub.
- Busy roads reduce any sense of tranquillity.
- Strong sense of neglect due to fly-tipping/rubbish, invasive japanese knotweed and other weed species.
- Defensive and marginal character.
- Open, green and formally managed recreation spaces further north.

Landscape character

Located in the western extreme of the study area, this character area comprises the flat floodplain of the Lower River Rhymney. The area is bounded to the west by the hard urban edge of the Pengam area of Cardiff, and by the extensive raised land of the Lamby landfill site on Wentlooge Level to the east. To the north, the River Rhymney valley is a distinctive green corridor running through the eastern suburbs of Cardiff, including extensive areas of playing fields and amenity greenspace. The course of the River Rhymney meanders strongly through its narrow floodplain to its confluence with the inter-tidal coastal flats of the Seven Estuary.

The flat valley floor and floodplain of the River Rhymney is semi-rural open fields with scrub developing to the south. It is dominated by the

river, and there is a small oxbow lake within the floodplain. The area is overlooked by adjacent busy roads (Southern Way and the A48), which significantly reduces the area's sense of tranquillity. The strip of flat valley floor of the River Rhymney at its mouth with the Severn Estuary is dominated by the main eastern road approaches to the Cardiff docks, which run through the area and create noise and movement.

Allotments lie to the west, appearing to be well used. The land between the road and river edge is rough land invaded by japanese knotweed and other weed species, which with the prevalence of flytipping/ rubbish, gives a strong sense of neglect. Bunds protect floodplain land from access by travelling communities, further emphasising the defensive and marginal nature of the area.

Levels Lingo – **River Rhymney**

The River Rhymney was anciently called Elarch or the 'Swan River'.

What's important and why?

Key Qualities of the Lower River Rhymney

- Flat, narrow floodplain.
- Meandering river course with small oxbow lake.
- Remnant semi-natural habitats.
- Distinctive green corridor through Cardiff

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 3 aspect areas within the character area, of which 2 are of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 4 aspect areas within the character area, of which 1 is of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 8 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 12 aspect areas within the character area, 1 of which is of Outstanding value for this aspect
- ***Geological Landscape*** – there are 4 aspect areas within the character area, of which 2 are of High value and 1 is of Outstanding value for this aspect

Forces for change

The key forces for change on the character of the Lower River Rhymney landscape are:

- Continued degradation of landscape character.
- Continued development pressures along the edge of the floodplain.
- Intrusion from stark and poorly integrated development in adjoining areas and noise from main roads.
- General degradation of settlement edge landscape with increased flytipping and litter.

Landscape sensitivity

Key qualities of the Lower River Rhymney landscape that are sensitive to inappropriate change include:

- Flat, narrow floodplain, river and oxbow lake, and the remnant semi-natural habitats.

Landscape guidelines

- ***Settlement Edge***: improve relationship with adjacent urban edge of the Pengam area of Cardiff.
- ***Landscape Setting***: Incorporate views into and out, across and north and south along the river valley; improve visual character and appearance of the area as a gateway for visitors to Wentlooge Level.
- ***Public Access***: Enhance public access and understanding of the special qualities of the Lower River Rhymney landscape

Green infrastructure opportunities

Key green infrastructure assets in the Lower River Rhymney:

- ***River Rhymney***
- ***Promoted Routes***: Wales Coast Path, Rhymney Valley Walk
- ***Cycle routes***

Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Lower River Rhymney landscape.
- ***Improvement of links north and south***: to enhance connections along the River Rhymney valley green corridor between the eastern suburbs of Cardiff and the Wentlooge Level.
- ***Habitat and landscape management***: restoration of semi-natural riverside habitats and management of existing green spaces.

3.6 Rolling Farmland (D)

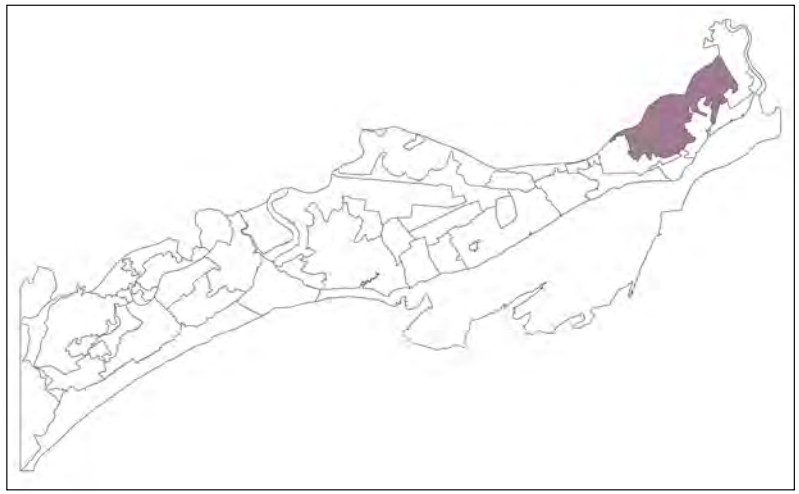
Within the study area, the Rolling Farmland Landscape Character Type comprises undulating agricultural land with scattered blocks and belts of woodland that provides the hinterland to Mathern Level in Monmouthshire, Caldicot Level in Newport and Wentlooge Level in Cardiff.

The Landscape Character Areas found within this Landscape Character Type are described below.

D1 – Mathern Level Hinterland

Location

The Mathern Level Hinterland is an area of low, gently undulating farmland with scattered blocks and belts of woodland, located between Chepstow and Caldicot in Monmouthshire.



Distinctive landscape characteristics of the Mathern Level Hinterland

- Irregular medium to large-scale fields of arable and pastoral use, becoming more intensively cultivated in places.
- Fields bounded by a mosaic of low, well maintained hedges, hedgerow trees and field trees. In places, small blocks of deciduous woodland link with existing hedges to create a more secluded, wooded character.
- Settlement includes linear villages, traditional farmsteads, small holdings and large country estates - comprising a mixture of modern and traditional, styles and materials.
- A landscape of historic interest with designed landscapes, remnant parkland and gardens associated with large estates. Caldicot Castle is a feature in the west.
- Golf course with landscaping in stark contrast to the surroundings in the centre of the area.
- Long views of the Severn Estuary and the second Severn crossing help to mitigate the impact of the M48 motorway and Portskewett.

Landscape character

A gently undulating pastoral lowland, allowing long views across the Severn Estuary, though enclosed by a strong network of traditional field boundaries and small woods. In places this structure is undermined by lack of management and fragmentation of farmsteads into smallholdings. Despite being high-grade agriculture land, the area is mainly used for grazing of sheep and cattle. Settlement includes linear villages, traditional farmsteads, smallholdings and large country estates. This landscape shares strong links to the historical occupation of the Gwent Levels, including at St Pierre Park and Caldicot Castle. With its origins as a medieval manor and deer park St Pierre Park is now a golf course, which has significantly altered the landscape character, introducing intrusive lines of fencing, stark bright green improved pastures and non-native tree species.

The area is bisected by the M48 corridor effectively dividing the area in two with the southern section more closely related to the adjacent Mathern Level and the northern section acting as a buffer and green wedge for the western side of Chepstow.

What's important and why?

Key Qualities of the Mathern Level Hinterland

- The area has a pastoral lowland character, with a strong network of traditional field boundaries and small woods.
- Long views across the Severn Estuary.
- Linear villages, traditional farmsteads, smallholdings and large country estates
- Strong links to the historical occupation of the Gwent Levels, including at St Pierre Park and Caldicot Castle and country park

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 5 aspect areas within the character area, of which 3 are of High value and 1 is of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 8 aspect areas within the character area, of which 4 are of High value and 3 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 6 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 7 aspect areas within the character area, of which 2 are of High value for this aspect
- ***Geological Landscape*** – there are 9 aspect areas within the character area, of which 3 are of High value for this aspect

Forces for change

The key forces for change on the character of the Mathern Level Hinterland landscape are:

- Settlement expansion at Chepstow has potential to impact on the setting and integrity of historic parkland and registered parks and gardens.
- Diversification of agricultural land (such as leisure/golfing, expansion and intensification of existing farming practices/poultry farming development pressures) leading to potential erosion of landscape character and also fragmentation of farmland in places leading to a rise in smallholdings and horsiculture.
- Pressures towards coalescence/spread of surrounding settlements.
- Diversification of farming practices and change of land uses leading to change in landscape character.
- Lack of hedgerow management resulting in hedges either being removed or becoming neglected, overgrown and gappy in places. Intrusive lines of post and rail fencing are common, particularly where the fragmentation of farmland has led to a rise in smallholdings and horsiculture.

Landscape sensitivity

Key qualities of the Mathern Level Hinterland landscape that are sensitive to inappropriate change include:

- Strong rural landscape character
- Proximity to national and international environmental designations
- Presence of Scheduled Monuments such as Caldicot Castle.
- Gently undulating landscape with distant views over the adjacent Mathern Level to the Severn Estuary
- Views to Castle, views to higher land to the north and long distance views over the Estuary

Landscape guidelines

- ***Townscape***: There some small settlements within the Mathern Level Hinterland, including Newton Green and Pwllmeyric, as well as isolated farmsteads, scattered dwellings and country estates:
  - » New development should respect sense of place and character, including the historic setting of historic parks and gardens, reinforcing traditional settlement patterns and building forms.
  - » Details on frontages/elevations should reflect local styles creating coherent relationships between buildings and their surroundings
- ***Settlement Edge***: Settlements in the Mathern Level Hinterland tend to be a range of linear villages, traditional farmsteads, small holdings and large country estates:
  - » New development should avoid settlement coalescence.
  - » Soften settlement edges with appropriate landscaping and tree planting.
  - » Avoid sub-urbanised treatment such as close boarded fencing, post and rail etc - use traditional materials stone and brick or hedgerow planting.
- ***Public Access***: Enhance public access and understanding of relationship with the special qualities of the adjacent Mathern Level landscape.

Green infrastructure opportunities

Key green infrastructure assets in the Mathern Level Hinterland:

- ***Wales Coastal Path***: links to the adjacent Levels landscape
- ***Protected and designated sites***: St Pierre Park and Wyelands Registered Historic Park and Gardens
- ***Accessible green spaces***: Caldicot Castle Country Park

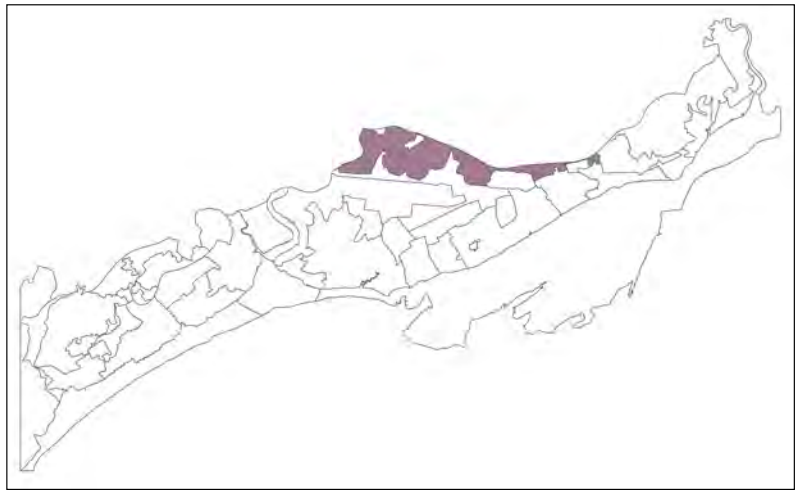
Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Mathern Level Hinterland landscape.
- ***Provision of improved pedestrian paths, rights of way and cycling routes***: to enhance connections between Chepstow, Caldicot, Newton Green and Pwllmeyric, Caldicot Castle Country Park and the adjacent Mathern Level landscape.
- ***Habitat and landscape management***: maintain and restore field boundaries and hedgerow trees, and manage blocks of woodland, to reinforce the area's rural character.

D2 – Caldicot Level Hinterland

Location

The Caldicot Level Hinterland is an area of rolling, wooded farmland, which extends between the western edge of Caldicot and the eastern edge of Newport.



Distinctive landscape characteristics of the Caldicot Level Hinterland

- Gently undulating, wooded lowland
- Transition landscape between the open Caldicot Level to the south and more typical rolling agricultural land to the north.
- Dominated on its fringes by settlement that acts as a distinctive 20th century dormitory conurbation and key industrial area within the county.
- Important role as part of the rising backcloth to the Caldicot Level.
- Remnant pastoral farmland between the settlements forms important and vital green space/wedges
- Rogiet area ; includes archaeologically sensitive areas relating to medieval settlements and green wedge
- Intervening green wedges provide key views from the B4245, rail lines and M4 corridor and setting for the adjacent settlements

Landscape character

The Mathern Level Hinterland includes the gently rolling pastoral landscape between the settlements of Caldicot, Magor, Rogiet, Undy and Newport, and has strong visual, cultural and historical links to the adjacent Caldicot Level. It also lies within an Area of Archaeological Sensitivity that encompasses several millennia from prehistory, through Roman, medieval and cultural and socio-economic developments of the 19th century. Major infrastructure including the M4, rail mainline and the M4 Relief Road are dominant features. These remaining, intervening green spaces between the settlements form important green wedges and are protected from development to prevent further coalescence and maintain individual settlement identity. To the north, the back-fen gives way to the well-wooded rolling farmland on higher land around Llanwern Park and Wilcrick Hill.

The Mathern Level Hinterland is primarily pastoral in character with small to medium scale fields enclosed by cut hedges and trees. Most fields have sinuous boundaries while others are rectilinear. In places, particularly in the green gaps between settlements, larger fields of mixed arable and pastoral farming are bounded by low intensively managed hedges and ditches, interrupted in places by intrusive lines of post and wire fencing. The adjacent M4 is a source of noise and movement in an otherwise fairly tranquil area.

What's important and why?

Key Qualities of the Caldicot Level Hinterland

- Archaeologically sensitive areas relating to medieval settlements
- Patchwork of wooded hillsides and agricultural landscape - Blocks of deciduous woodland are noticeable and give emphasis to the hillsides in places

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 5 aspect areas within the character area, of which 4 are of High value and 1 is of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 8 aspect areas within the character area, of which 4 are of High value and 3 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 6 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 7 aspect areas within the character area, of which 2 are of High value for this aspect
- ***Geological Landscape*** – there are 9 aspect areas within the character area, of which 3 are of High value for this aspect

Forces for change

- The key forces for change on the character of the Caldicot Level Hinterland landscape are:
- Settlement expansion potentially eroding remnant green spaces, diluting landscape character and degrading the adjacent Caldicot Level's character.
- Transport corridor development such as the proposed M4 around Newport may further erode the integrity of the Mathern Level Hinterland's character.
- Industrial/business/retail park expansion in combination with wind turbine development potentially out of scale with existing landscape and settlements, and impact on long distance views and setting of adjacent Caldicot Level.

Landscape sensitivity

Key qualities of the Caldicot Level Hinterland landscape that are sensitive to inappropriate change include:

- Strong rural landscape character
- Proximity to national and international wildlife designations.
- Setting within an Area of Archaeological Sensitivity and presence of Scheduled Monuments.

Landscape guidelines

- ***Settlement Edge***: The settlement pattern within the Caldicot Level Hinterland is scattered, such as at Llanwern and Llanfihangel near Rogiet. Wider development is limited to scattered farmsteads:
  - » New development should avoid settlement coalescence.
  - » Soften settlement edges with appropriate landscaping and tree planting.
  - » Avoid sub-urbanised treatment such as close boarded fencing, post and rail etc - use traditional materials stone and brick or hedgerow planting.
- ***Public Access***: Enhance public access and understanding of relationship with the special qualities of the adjacent Caldicot Level landscape.

Green infrastructure opportunities

Key green infrastructure assets in the Caldicot Level Hinterland:

- ***Footpath and Cycle routes***: Links to the National Cycle Network Route 4, and footpath routes around Wilcrick Hill
- ***Protected and designated sites***:: Llanwern Park Registered Historic Park and Garden, Wilcrick Hill Camp Scheduled Monument

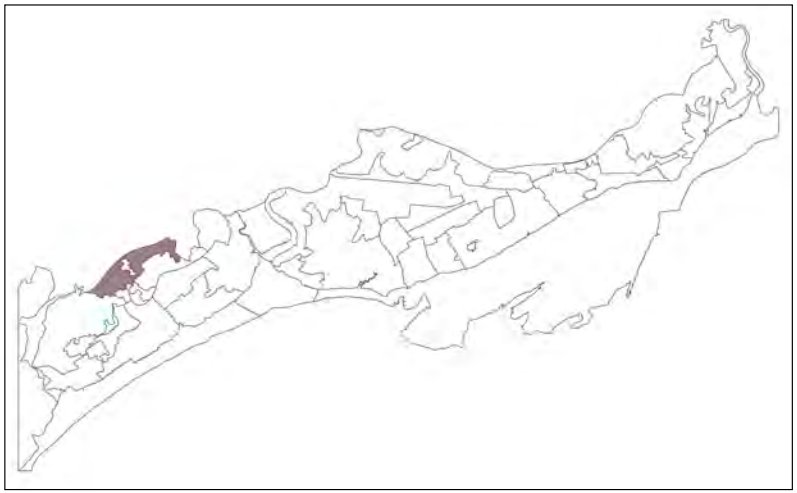
Opportunities for improvement:

- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Caldicot Level Hinterland landscape.
- ***Provision of improved pedestrian paths, rights of way and cycling routes***: to enhance connections between Caldicot, Magor, Undy and the new Glan Llyn development and the adjacent Caldicot Level landscape.
- ***Habitat and landscape management***: maintain and restore field boundaries and hedgerow trees, and manage blocks of woodland, to reinforce the area's rural character.

D3 – Wentlooge Level Hinterland

Location

The Wentlooge Level Hinterland is a gently rolling, predominantly farmland landscape which extends from Cardiff (St. Mellons) in the west, around Castleton, to Coedkernew in the east.



Distinctive landscape characteristics of the Wentlooge Level Hinterland

- Scattered farmsteads and large country properties.
- Irregular pattern of small-medium scale, predominantly pastoral fields.
- Area is traversed by the A48 and bounded to the north by the A48(M) and the M4.

Landscape character

The Wentlooge Level Hinterland is an area of gently rolling lowland farmland to the north of Wentlooge Level extending from Cardiff (St. Mellons) in the west, around Castleton, to Coedkernew in the east. To the north the area is bounded by the A48(M) and M4 motorways. Rising gradually above 10 metres AOD, the Wentlooge Level Hinterland forms a relatively enclosed landscape of primarily pastoral agricultural land, interspersed with scattered country properties, farmsteads and golf courses. Field pattern is mostly irregular medium in scale, primarily pastoral in use, with a small number of larger, arable fields. Field boundaries are well vegetated, with some hedgerow trees; and a number of small scattered blocks and belts of woodland increase the sense of enclosure, particularly in the vicinity of the golf courses.

The area is bisected by the A48 road in the north, and the small settlement of Castleton lies in the centre of the area. Development along the A48 includes garages, a garden centre, golf course and laybys which contribute to an urban fringe character. Numerous small watercourses drain onto the adjacent Wentlooge Level. The area is generally affected by background noise from the busy M4 and M48. Views are possible across the levels.

What's important and why?

Key Qualities of the Wentlooge Level Hinterland

- Sparse settlement pattern of isolated farms with rural roads and scattered country estate style properties
- Rural, agricultural character
- Views to the adjacent Wentlooge Level

LANDMAP Aspect Layers High and Outstanding Values

- ***Historic Landscape*** – there are 6 aspect areas within the character area, of which 1 is of High value and 1 is of Outstanding value for this aspect
- ***Cultural Landscape*** – there are 9 aspect areas within the character area, of which 2 are of High value and 5 are of Outstanding value for this aspect
- ***Landscape Habitat*** – there are 7 aspect areas within the character area, of which 2 are of Outstanding value for this aspect
- ***Visual & Sensory*** – there are 10 aspect areas within the character area, of which 1 is of High value for this aspect
- ***Geological Landscape*** – there are 5 aspect areas within the character area, of which 3 are of High value for this aspect

Forces for change

The key forces for change on the character of the Wentlooge Level Hinterland landscape are:

- Loss of landscape integrity through gradual change in character from development
- Increased pressure for development around existing settlements and associated with major transport routes (eg: M4 around Newport proposal).
- Intensification of existing land uses, such as golf courses etc.

Landscape sensitivity

Key qualities of the Wentlooge Level Hinterland landscape that are sensitive to inappropriate change include:

- Strong rural landscape character
- Sparse settlement pattern of isolated farms and rural roads

Landscape guidelines

- ***Settlement Edge***: The settlement pattern within the Wentlooge Level Hinterland is scattered. Wider development is limited to scattered farmsteads:
  - » New development should avoid settlement coalescence.
  - » Soften settlement edges with appropriate landscaping and tree planting.
  - » Avoid sub-urbanised treatment such as close boarded fencing, post and rail etc - use traditional materials stone and brick or hedgerow planting.
- ***Public Access***: Enhance public access and understanding of relationship with the special qualities of the adjacent Wentlooge Level landscape.

Green infrastructure opportunities

Key green infrastructure assets in the Wentlooge Level Hinterland:

- ***Footpath routes:*** extensive network of footpaths connecting to the adjacent Levels landscape

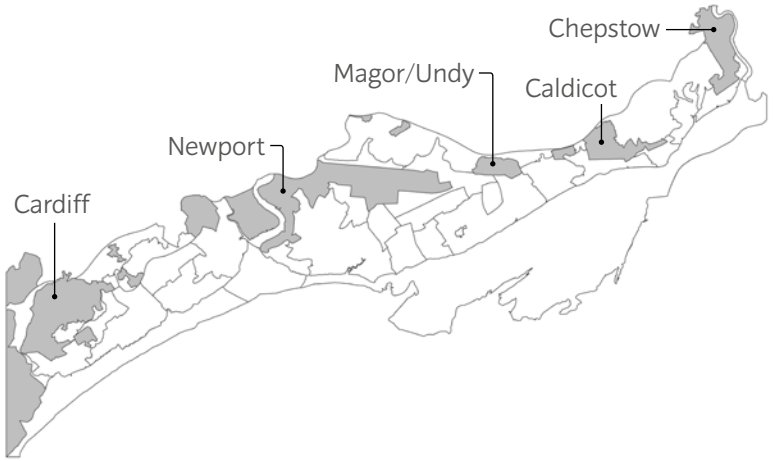
Opportunities for improvement:

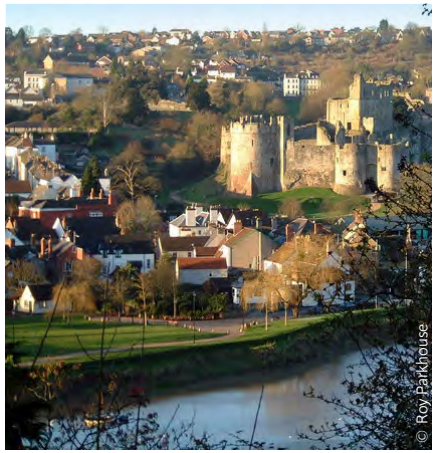
- ***Visitor destinations***: strengthening the character and experience of distinctive places, gateways and access routes that help visitors engage with, appreciate and enjoy the Wentlooge Level Hinterland landscape.
- ***Provision of improved pedestrian paths, rights of way and cycling routes***: to enhance connections between Cardiff, Castleton, Marshfield and Newport and the adjacent Wentlooge Level landscape.
- ***Habitat and landscape management***: maintain and restore field boundaries and hedgerow trees, and manage blocks of woodland, to reinforce the area's rural character.

3.7 Built-up Land (E)

The Built-up Land Landscape Character Type comprises the town of Chepstow and the Severnside settlements in Monmouthshire (Caldicot, Rogiet and Magor/Undy); the southern and eastern edge of the City of Newport (including the neighbourhood of Dyffryn, the Docks, the Llanwern Steelworks and the adjacent Glan Llyn major development site); and the eastern edge of the City of Cardiff (including Marshfield).

The historic relationship between the Gwent Levels and these settlements has been significantly disrupted by modern railways, motorways and urbanisation. Despite the proximity of these major conurbations and large towns, today there are increasingly limited visual connections and cultural associations between these communities and the Levels. Nonetheless, existing and new communities on the Gwent Levels remain connected to the area's landscape history through their shared vulnerability to flooding and inundation if drainage systems are not maintained.





Chepstow and the Severnside Settlements

Chepstow is located on high land sloping sharply towards the River Wye with low cut limestone cliffs forming a dramatic backdrop to the town. Historically, Chepstow was a wealthy port, market town and industrial centre of significant historical and cultural importance. The small historic core of the town is dominated by the remains of Chepstow Castle overlooking the River Wye, surrounded by traditional streets. A number of modern housing estates of varying styles and ages follow the steep sloping river sides, broken up by a network of open green spaces and mature trees. To the south of the M48, the large-scale Newpark Industrial Estate dominates Mathern Level landscape and views across the Severn Estuary.

The Severnside Settlements of Caldicot, Rogiet and Magor/Undy generally comprise mixed development of varying ages and styles, although they are predominantly 20th century modern estates and cul-de-sacs that have divorced the original historic village cores from their landscape settings. Small areas of open land on the rising slopes provide green spaces that break up the built development forms. The historic cores of the settlements are often on higher ground, typically with the parish church as a prominent feature. The settlement edge is often abrupt and lacking a strong relationship with the surrounding landscape or field pattern. The railway forms a strong southern boundary to the settlements in many places.

There has been encroachment of urban residential development onto the Levels around the edges of Chepstow and the Severnside settlements.

See the Monmouthshire Draft Landscape SPG – Volume 2 (2016) for more detailed information about the Built-Up Landscape Character Types of Chepstow and the Severnside Settlements.

City of Newport

Within the study area, the southern and eastern edge of the City of Newport is steeped in a rich industrial heritage. During the industrial revolution of the late 18th and 19th Centuries, Newport grew substantially, with the development of the canal network and railways enabling vast quantities of coal to be exported, along with iron and steel products. Many of the fine Victorian buildings constructed in this period remain to this day, giving Newport a character which many other towns and cities have lost. In more modern times, steelmaking was a mainstay of the economy through the 20th Century, along with its port. However, much of the heavy industry in Newport went into decline. Steelmaking at the Llanwern Steelworks ceased in 2001, and the regeneration of this site (Glan Llyn) is a key focus of Newport's Local Development Plan. Over the centuries, parts of the historic Gwent Levels around Newport have been lost to industrial development associated with the port and steelworks. Newport was granted city status in 2002.

City of Cardiff

Within the study area, the eastern edge of the City of Cardiff is located within a well-defined landscape setting with prominent ridges to the north and the Severn Estuary to the south. The river valley of the Rhymney provides an extensive and continuous green corridor running from the Gwent Levels through the urban area. Over the last 50 years or so, there has been considerable encroachment of urban residential development onto Wentlooge Level as Cardiff has expanded eastwards, such as the Pwll-Mawr Business Park.

4.0 WHAT MAKES THE GWENT LEVELS SPECIAL?

4.1 General

4.1.1 This final chapter identifies the key themes that represent the special qualities of the Gwent Levels and make a significant contribution to the distinctive sense of place or essential 'spirit of the Levels', which is desirable to conserve and enhance through positive management of the landscape.

4.2 A Unique Hand-Crafted Cultural Landscape

4.2.1 Gwent Levels is the finest example in Wales of a coastal landscape exploited, modified and transformed by the communities that have lived here since its reclamation from the Severn Estuary in Roman times. The cycle of land reclamation and inundation over thousands of years is recorded in this landscape as palaeochannels, which together with a rich legacy of buried archaeological deposits and earthworks, contributes significantly to the historic character of the Gwent Levels. From at least the Roman period onwards, the landscape has been hand-crafted and shaped by successive communities to enable exploitation of the fertile estuarine land for agriculture. This story of how humans used their skills and ingenuity to adapt and use the landscape for food and shelter has been revealed by recent research by landscape historians.

4.2.2 The unique, hand-crafted landscape of the Gwent Levels lies largely below the high water mark, demonstrating the amazing efforts of humans in drainage engineering, executed here on a grand scale: with its abundant reens, sluices and banks, the whole Gwent Levels landscape is in many ways a monument to civil engineering. Human intervention in management of the landscape is as vital today as it was when the Gwent Levels as we largely know it were created.

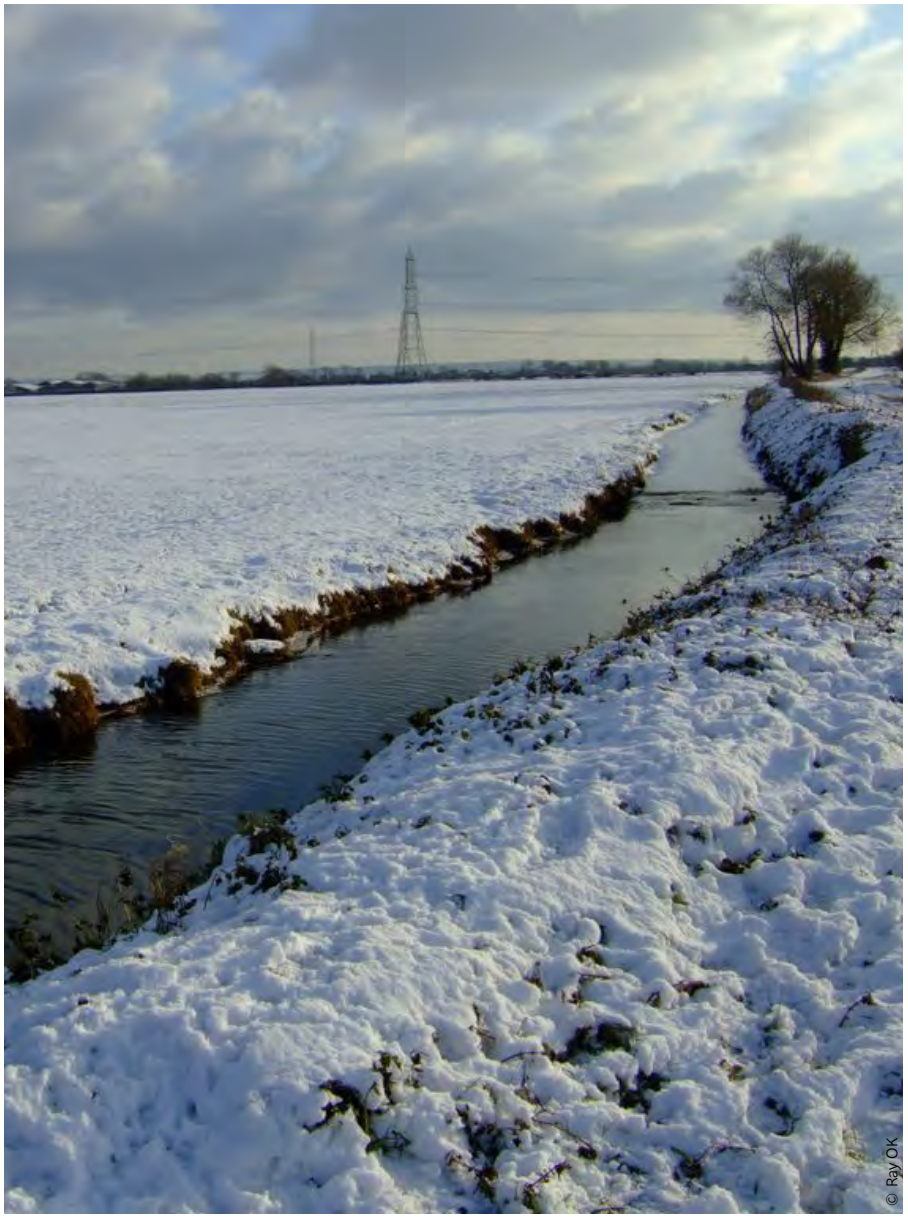
4.2.3 The survival of historic maps provides a unique insight into the development of the traditional management of the area's drainage system. The water management system in its essence still functions as was intended, and reflects the unique and strategic role it has played and is still playing in the drainage of land and in flood prevention: the landscape's historic drainage features prevent a significant part of Wales' valuable agricultural land, and properties in and around the Levels, from flooding. It is the traditional management of the drainage system that creates the range of habitats which makes the Levels so important for wildlife.

4.2.4 The area is plentiful in archaeology, from footprints in the mud when Mesolithic people foraged across the forests of the Estuary before the sea came in, through to Roman sea defences to protect villas, property and farming. The Gwent Levels is of at least national significance for its repository of well-preserved, often waterlogged archaeological and palaeo-environmental remains. The area is especially rich in prehistoric and Roman Period archaeology, as well as a diversity of field patterns ranging from the ancient semi-regular enclosure to the engineered 18th century fields. The unique drainage history and important farming

and food production history have provided today's communities with a strong sense of tradition and place.

4.2.5 The landscape we see today was significantly shaped by the Marcher lords and the monks of Goldcliff Priory who were responsible for reclaiming the Levels. They also let the ranks of fishtraps set out in huge wooden ranks on the foreshore, which used basket traps traditionally made from hazel rods and willow plait known as "putts" and later "putchers" to catch salmon, eels and lampreys on the rising and falling tides. The distinctive remains of the putcher fishtraps ranks can be seen along the coast.

4.2.6 Culture and nature are deeply entwined across the Gwent Levels landscape. The intricate network of reed-fringed drainage ditches and reens criss-cross the Levels like arteries, carrying water from the uplands safely out to sea to protect the reclaimed land from flooding, and sustaining remarkably ecologically rich wetland habitats of national special scientific interest. It is these living waterways that set the Gwent Levels apart, making them both culturally and ecologically unique. Such is the uniqueness of the historic, human-shaped landscape that the Gwent Levels are also designated as a Landscape of Outstanding Historic Interest in Wales.



4.3 A Wildlife Oasis

4.3.1 The Gwent Levels is home to a rich assemblage of rare wildlife. The Severn Estuary provides a valuable and internationally significant wildlife resource for wildfowl and wading birds. Its conservation importance is acknowledged through designations including RAMSAR, Special Area of Conservation (SAC), Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI). Behind the seawall, much of the Levels are designated as a SSSI largely due to the nature conservation value of the ditches and reens which support significant concentrations of rare and protected wetland species; the rootless duckweed (the world's smallest flowering plant and unique in Wales to this location); aquatic invertebrates; water voles and otters; and the only breeding population of bearded tit in Wales.

4.3.2 Conservation initiatives that seek to secure the future ecological value of the Gwent Levels, through engagement with farmers to promote environmentally sensitive land management and drainage practices, are helping create and maintain habitats upon which many of these species depend. Parts of the area are also managed by nature conservation bodies, including the established Newport Wetlands Reserve for example; here the restored wetland areas incorporate a particularly high percentage of reedbeds, which provide for a tranquillity not easily found elsewhere on the Levels. The network of designated sites and nature reserves form a core area in the ecological network of wetland habitats that is so crucial for the survival of many rare and endangered flora and fauna species. A breeding pair of rare cranes recently successfully raised a fully-fledged chick on the Gwent Levels, restoring once again the historic link between these charismatic species and the Gwent Levels landscape. Together, the wetlands, ditches and inter-tidal habitats have a highly significant and essential role to play in delivering a range of ecosystem services for the Gwent Levels as a whole.

4.3.3 The conservation initiatives offer opportunities for public access, outreach and education environmental programmes that are inspiring the next generation to care for the future conservation of wildlife on the Levels.

4.4 A Hidden Landscape

'They always say the best way to see the Gwent Levels is with a microscope or a helicopter. You've either got to get right in and go, look, this is amazing down here, or you've got to get up high and see this vast, extraordinary landscape from above.'

(Sorrel Jones, Gwent Wildlife Trust Conservation Officer – from The Sum of a Place, Julian Hoffman, 2015)

4.4.1 First impressions of the Gwent Levels to some people are of an unassuming and relatively empty, flat and open agricultural landscape next to the Severn Estuary; the small number of dispersed rural villages and remote farmsteads within the Levels sit in the shadow of extensive urban areas (the cities of Newport and Cardiff, and the town of Chepstow and the 'Severnside settlements' in Monmouthshire), juxtaposed with major energy infrastructure (the Usk power station, high voltage power lines and the Llanwern Steelworks) and bypassed by busy transport routes (mainline railway, motorways and the Severn bridge crossings). On further inspection however the Gwent Levels is revealed to be an appealing and remarkable coastal landscape of high skies, low horizons and a geometric network of narrow water-filled ditches and narrow rural lanes and tracks that cut across some of the most productive agricultural land in Wales. Draining the fertile fields, the historic network of ditches gives the Levels its distinctive patchwork character and provides biodiverse habitats for wildlife.

4.4.2 The Gwent Levels landscape means different things to different people. Some can find it featureless and intimidating whereas others find it exhilarating and value its tranquillity and distinctive lifestyles. The landscape has its own fascinating local 'Levels Lingo' or vocabulary - such as 'reens', 'grips' and 'noddles' – that provides an insight into the origins of the landscape over 1800 years ago and how it continues to be managed today.

4.4.3 While the Gwent Levels are little known and seldom visited by the surrounding urban communities, they are not 'forgotten' by the people who live and work there. Over time, the visual connections and cultural associations with the Levels has been disrupted by railways, motorways and urbanisation, creating a perception of the Gwent Levels as a somewhat 'hidden' landscape. As time passes and people pass on, it is vitally important that the memory of the area's heritage and its remarkable stories are revealed and passed on for future generations to appreciate and enjoy.

4.5 Dramatic and Dynamic Seascapes

4.5.1 Beyond the seawall, the vast mudflats, saltmarshes and open water of the Severn Estuary are fundamental to the setting and character of the Gwent Levels. This is a dramatic and dynamic seascape of big skies, a sense of light and panorama, including views of the two colossal white bridges spanning the silt-laden tides of the estuary.

4.5.2 Its character varies from day to day, and from season to season, and is much influenced by the considerable tidal range, ever changing light and weather conditions, and the effect of these on the texture and colour of the estuary itself; the dynamics of early morning sea mists which burn off to reveal the detail of the coast, or end of day spectacular sunsets, are one of the classic changes that evoke sensual and spiritual responses in many people. Others include the changing mood of the foreshore in response to weather and sky conditions as light reflects off open water and mudflats when the tide recedes; and the changing intricate pattern of the winding creeks and channels within the foreshore as high tides deposit sediment and new courses are continuously eroded by rivers.

4.5.3 The expanses of windy saltmarsh and mud exposed at low tide are used by tens of thousands of migratory waders and waterfowl which arrive from Northern Europe each winter, roosting and feeding on the Estuary's saltmarsh and mudflats and filling the coast's cold air with raucous babble. It is also a landscape full of geological clues to its past – the red cliffs rising out of the saltmarshes at Black Rock are rich with the fossils of the plesiosaurs and insects which populated the landscape when the area was transformed from a hot arid desert to a warm tropical sea approximately 200 million years ago.

'Even at a distance the Levels are mesmeric, beguiling beneath wide, estuary skies. They shape-shift with the weather as you walk [through] them, borrowing the magical sea-light of the Severn Estuary when it's struck by sun, or turning as dark and dramatic as a storm-tide.'

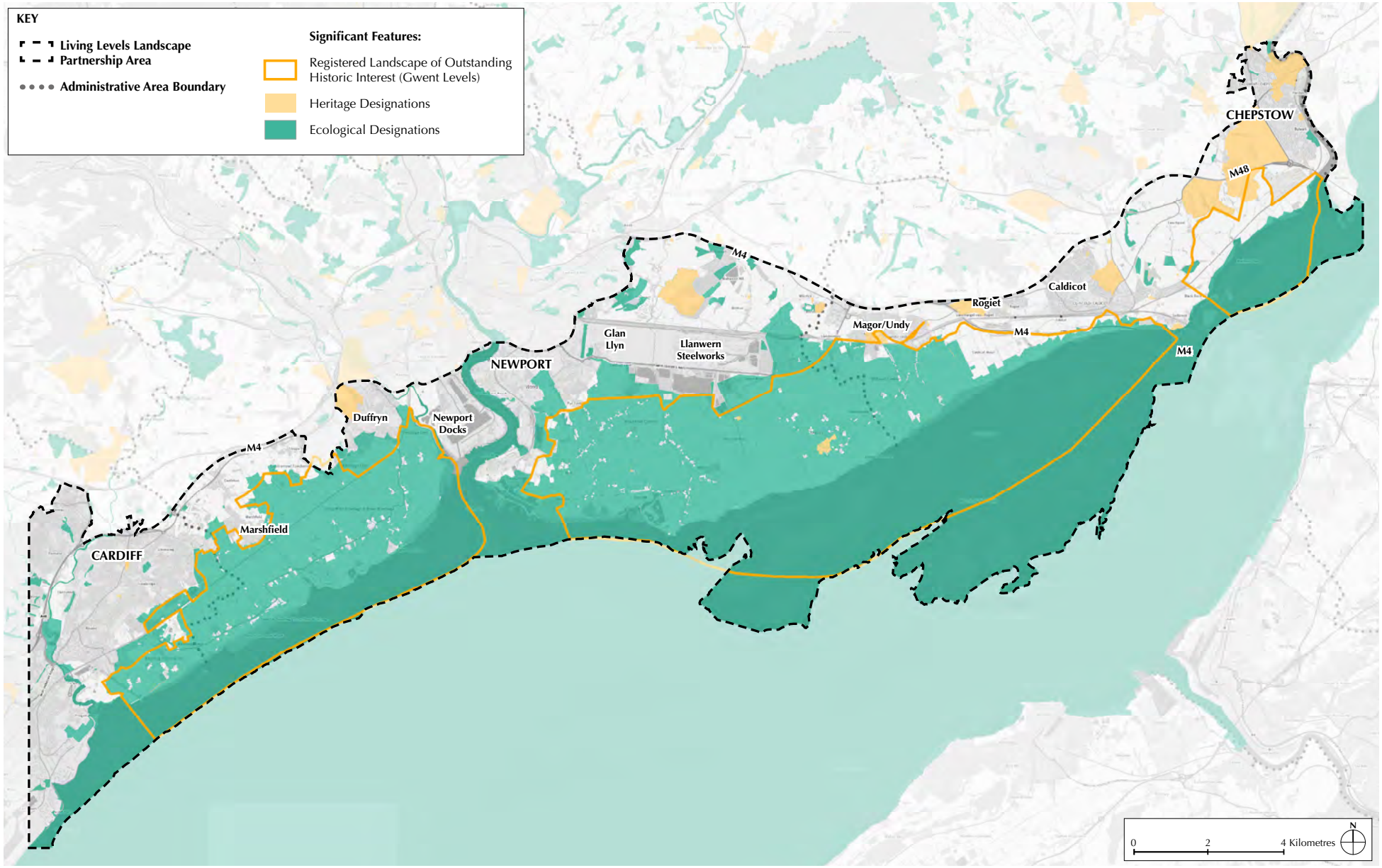
(The Sum of a Place, Julian Hoffman, 2015)

4.6 Summary

4.6.1 The natural and historic features of high significance within the Gwent Levels are shown on **Figure 4.1**. In summary, the key landscape attributes that make the Gwent Levels special are:

- The role of the traditional management of the Gwent Levels' drainage system in sustaining the nationally important wetland habitats not seen to the same extent elsewhere in Wales.
- A predominantly pastoral landscape drained, irrigated and modified to allow productive farming, while also providing a diverse range of semi-natural habitats for rare species.
- Water is an ever-present element in the landscape, creating fertile fields and presenting challenges to settlement and occupation of the landscape.
- The low horizon, level topography and broad skies, often augmented by dramatic cloudscapes, sunsets and sunrises.
- Strong linearity and distinctive geometric pattern of enclosure, drainage, watercourses, lanes and historic route-ways.
- Distinctive drainage pattern of canalised rivers, drains, reens and ditches, accentuated by lines of pollard willows, define a planned and reclaimed landscape.
- The sea wall, and banks carrying roads/droveways between farmsteads and villages, often form the only upstanding landscape features in some places.
- An estuarine seascape of mudflats, saltmarsh and occasional rocky outcrops.
- Large flocks of wading and other wetland birds visit the coastal mudflats and wetlands attracted by a rich food supply, with vast flocks - murmurations - of starlings gathering on the Levels in autumn and winter forming mesmeric and dramatic aerial displays.
- Distinctive and rare vegetation, invertebrates, colonies of water vole and otter found in the extensive network of reens.
- Rivers and drains are defining elements of the character of the landscape, reflecting the active processes, natural elements and the planned elements of the landscape.
- A strong sense of the history of human occupation and management pervades the landscape, reflected in its drainage, settlement and field patterns which create one of the best-preserved planned, medieval enclosure landscapes in Wales.
- A sparse settlement pattern related to subtle topographical variations, the simple and utilitarian style of buildings often reflecting the functional nature of the landscape.
- Occasional apple and pear orchards found in proximity to farmsteads and villages.
- In summer, a verdant and fertile landscape with lush vegetation across meadows and along watercourses; this contrasts with the often wild, bleak and sense of remoteness experienced on the Levels in winter.
- Vibrant cities and towns around the edge of the Levels reinforce its strong sense of tranquillity, remoteness and wildness away from human occupation in many places.

Figure 4.1 Significant Features of the Gwent Levels



4.6.2 The following "word cloud" highlights the key landscape components that contribute to the essential 'spirit of the Levels'.

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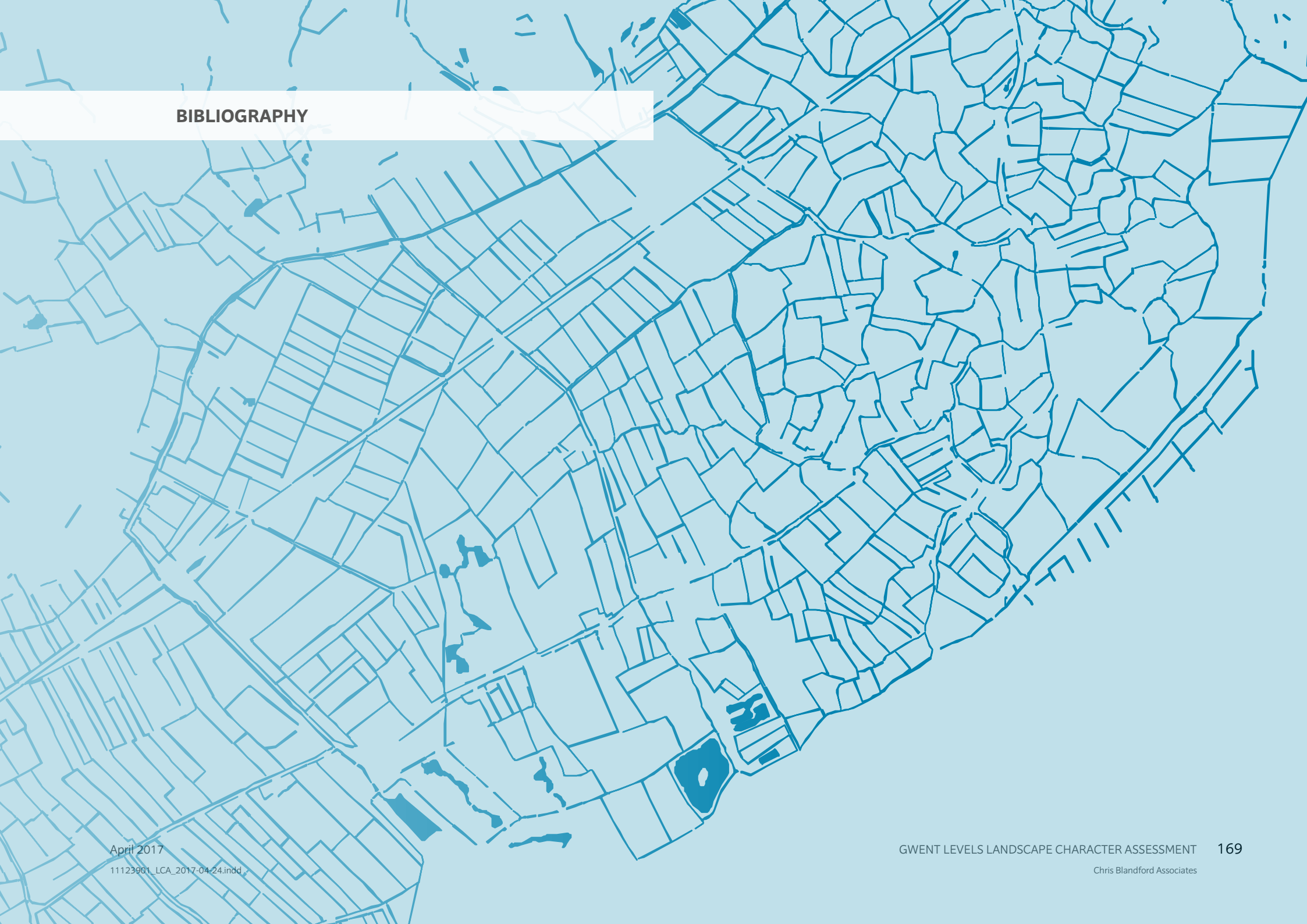

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