Report No. **32/22** National Park Authority

Report of the Head of Park Direction

Subject: Pembrokeshire Coast National Park Local Development Plan 2 – Supplementary Planning Guidance

Purpose of this report

1. The purpose of this report is to approve two supplementary planning guidance documents for consultation.

Background

- 2. Officers continue to draft and update existing supplementary planning guidance under Local Development Plan 2. An indicative timetable for preparation is included as Appendix 2 to the adopted Local Development Plan 2. However, given the time it has taken to reach adoption the indicative timescales set out have been delayed.
- 3. Officers have had an opportunity to prepare guidance listed in the table below and wish to publish it for consultation. Members are being asked to approve the following supplementary planning guidance documents for consultation. The front ends of each document are included in Appendix A and B respectively Please use weblinks in the footnote below to access all the detail of the consultation drafts. ¹

Draft Supplementary Planning Guidance – to approve for consultation

Seascapes: Includes Local Development Plan Policy reference updates and National Planning Policy updates.

The intention is that it will be a supplementary planning guidance for both the Pembrokeshire planning authorities.

Pembrokeshire Coast National Park Authority National Park Authority - 26 October 2022

¹ <u>https://www.pembrokeshirecoast.wales/seascapes-supplementary-planning-guidance-draft-oct-2022/</u>

https://www.pembrokeshirecoast.wales/trees-and-woodland-draft-supplementary-planning-guidance-oct-2022/

Draft Supplementary Planning Guidance – to approve for consultation

Tree and Woodland Guidance (New): New tree and woodland planting can bring a range of benefits for both nature and society. However, woodland creation could have a significant effect on the recognised qualities of this valued landscape, its landscape diversity and rich ecological and historic environment. New tree and woodland planting should take account of the special qualities and distinctive features of the receiving landscape – with a focus on 'the right tree in the right place'.

- 4. At a previous National Park Authority Meeting (September 2020) Members agreed to formally roll over some Supplementary Planning Guidance from Local Development Plan 1 as an interim measure for development management purposes. The 'rolled over' guidance (relevant for this Committee is the Seascapes Guidance²) will continue to be used as an interim measure for the Pembrokeshire Coast National Park area while this consultation is underway. The newer version of the guidance will in due course replace the interim guidance.
- 5. Officers will report back on consultations and bring further reports to Members on supplementary planning guidance in due course.

Risk considerations

- 6. Only the policies in the adopted development plan have special status under section 38(6) of the PCPA 2004 in deciding planning applications. However, Supplementary Planning Guidance (SPG) can be taken into account as a material consideration provided it is derived from and is consistent with the adopted development plan and has itself been the subject of consultation, which will carry more weight. The purpose of this report is to approve the guidance for consultation, so it complies with national procedural requirements set out in the Development Plans Manual Edition 3, March 2020.
- 7. SPG does not form part of the development plan and is not subject to independent examination, but it must be consistent with the plan and with national planning policy. SPG cannot be linked to national policy alone; there must be an LDP policy or policy criterion that provides the development plan 'hook' whilst the reasoned justification provides clarification of the related national policy. The Monitoring Framework for the Local Development Plan sets out the expectations for the delivery of specific supplementary planning guidance under the Local Development Plan.
- 8. Supplementary Planning Guidance assists with the implementation of the Plan.

Financial considerations

² <u>Seascape Character Supplementary Planning Guidance Interim - Pembrokeshire Coast</u> <u>National Park</u>

Pembrokeshire Coast National Park Authority National Park Authority - 26 October 2022 9. Local Development Plan replacement was budgeted for by the Authority. Monies remaining in Local Development Plan Reserves have assisted with progressing the supplementary planning guidance programme.

Welsh Language considerations

10. The publication and consultation exercises are carried out in accordance with the Welsh Language (Wales) Measure 2011 and the Welsh Language Standards Regulations (No.1) 2015. The impacts on the Welsh language also forms part of the appraisal process for the governing policies.

Human Rights considerations

- 11. The planning system seeks to progress legitimate aims by managing the development and use of land in the public interest to contribute to achieving sustainable development. It reconciles the needs of development and conservation, securing economy, efficiency, and amenity in the use of land, and protecting natural resources and the historic environment. Human rights under Articles 1 (right to peaceful enjoyment to property), 8 (right to respect for the home, private and family life) and 14 (right to equality), are the most relevant ones. Proportionality means that the measure which interferes with the right must strike a fair balance between the aim and the right which it interferes with.
- 12. The process for Local Development Plan preparation and its rigorous assessment procedures will support this approach.

Recommendations: Members are asked to:

- 1. Formally approve Supplementary Planning Guidance on Seascapes and Tree and Woodland Guidance as set out in Appendix A and B to this report respectively and on our website³ for consultation.
- 2. Provide delegated authority to the Head of Park Direction to make further minor edits to include taking account of Pembrokeshire County Council's consideration of the Draft Supplementary Planning Guidance on Seascapes. Any proposed changes by Pembrokeshire County Council which are substantive nature will be reported back to the National Park Authority for further consideration.

Background documents

National <u>Welsh Government Local Development Manual March 2020</u> <u>Planning Policy Wales Edition 11</u>

³ <u>https://www.pembrokeshirecoast.wales/seascapes-supplementary-planning-guidance-draft-oct-2022/</u>

https://www.pembrokeshirecoast.wales/trees-and-woodland-draft-supplementary-planning-guidance-oct-2022/

Pembrokeshire Coast National Park Authority National Park Authority - 26 October 2022 Supplementary Planning Guidance

https://www.pembrokeshirecoast.wales/supplementary-planning-guidance-ldp2/ (For further information please contact Martina Dunne, Head of Park Direction extension 4820.) Pembrokeshire Coast National Park Local Development Plan 2 Pembrokeshire County Council Local Development Plan 1



Seascape Character

Draft Supplementary Planning Guidance

PEMBROKESHIRE COAST NATIONAL PARK AUTHORITY
Consultation: October 2022

Adoption: Approval Date

PEMBROKESHIRE COUNTY COUNCIL

Consultation: Approval Date Adoption: Approval Date

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Cover photo: Ramsey Island and Whitesands Bay from Carn Llidi

1. Introduction

- 11 This document forms the basis for updated supplementary planning guidance and provides more detailed guidance on the way in which the Local Development Plan policies (in particular, Policy 8 Special Qualities and Policy 14 Conservation of the Pembrokeshire Coast National Park) are applied and Policies GN.1 (General Development Policy), GN.2 (Sustainable Design, GN.34 (Protection and Creation of Outdoor Recreation Areas), GN.35 (Protection of Outdoor Spaces with Amenity Value), GN.36 (Green Wedges) and GN.38 (Protection and Enhancement of the Historic Environment) of the Pembrokeshire County Council Local Development Plan. Pembrokeshire County Council also notes the complementarity between these policies and GN.37 on Protection and Enhancement of Biodiversity. Paragraph 6.5.4, of Planning Policy Wales advises that local planning authorities need to consider both landward and seaward pressures and the impacts of these pressures. The impacts associated with such activities can be widespread and overlap between sea and coastline. They may relate to inappropriate land use, pressure for services and facilities, and impact on existing businesses and employment as well as the natural and historic character of the coastline and seascape where there is extensive inter-visibility between land and sea along the coastline.
- 1.2 The original version of this document (Seascape Character Assessment 1) covered the whole of the Pembrokeshire Coast but was only adopted by the Pembrokeshire Coast National Park Authority as Supplementary Planning Guidance.
- 1.3. Whilst only the policies in the development plan have special status in deciding planning applications, (i.e. for the purpose of any determination under the Planning Acts, the determination must be made in accordance with the Plan unless material considerations indicate otherwise), Supplementary Planning Guidance may be taken into account as a material planning consideration. In making decisions on matters that come before it, the Welsh Government and the Planning Inspectorate will give substantial weight to approved supplementary planning guidance which derives out of and has been prepared consistent with the approach set out in national policy on the preparation of Local Development Plans. Put simply, the requirements of the legislation mean that the following needs to be taken into account when considering a proposal:

• Whether the proposal meets the requirements of policies within the Development Plan; and

• Weighing up all the other planning considerations to see whether they outweigh the conclusion of the Development Plan.

- 1.4. The seascape character assessment of Pembrokeshire includes inshore territorial waters up to 12 nautical miles from the coast and extends from Cardigan Island in the north to the Taf estuary in Carmarthen Bay in the south. The study area reaches inland to include the areas of the Milford Haven Waterway outside the Park, and up to the tidal limits of the Daugleddau.
- 1.5. The study is at a local level and was originally set within the framework of the regional Welsh Seascapes study completed by Countryside Council for Wales (whose functions have since been assumed by Natural Resources Wales) in 2009. The Welsh Seascapes study was superseded by the National Seascape Assessment for Wales in 2015.¹ The method for this study builds on current guidance and tailored to apply to Pembrokeshire and the study's location in Wales. It was the first local seascape study of its kind in Wales. There is an emphasis on

¹ National Seascape Assessment for Wales, NRW Evidence Report No 80, November 2015.

an assessment of the coastal landscape's seascape character in its marine setting, although wholly marine areas away from the coast are covered. As it was one of the pilot studies for all-Wales work there has been some further refinement, such as to boundaries, in order to marry up with the adjacent seascape character assessment for Carmarthen Bay, Gower and Swansea Bay²

- 1.6. The supplementary planning guidance should also be read in conjunction with the National Park Management Plan and with other guidance and baseline information including the National Park Authority's Landscape Character Assessment (2011), rolled over for Local Development Plan 2. It should also be read in conjunction with the Policies of Pembrokeshire County Council's adopted Local Development Plan (LDP 1), as referred to in paragraph 1.1.
- 1.7. At a national level, the Marine and Coastal Access Act 2009 requires the Welsh Government to develop a spatial planning approach to the management of its marine areas and the study may help to inform this. The Wales National Marine Plan (2019) aims to support the shared UK vision of clean, healthy, safe, productive and biologically diverse oceans and seas and must be considered by relevant public authorities when making decisions which have the potential to affect the plan area (from mean high water spring tide mark out to 200 nautical miles).
- 1.8. The Wales National Marine Plan contains policies to inform decisions taken by public authorities. The plan indicates that landscapes within coastal and marine areas are known as seascapes and include 'landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other'. Policy SOC_07: Seascapes sets out how proposals should demonstrate how potential impacts on seascapes have been taken into consideration. Opportunities to enhance seascapes are encouraged. The relative value of seascapes should be considered as part of decision-making and national Marine Character Areas covering the Inshore area are illustrated. Designated landscapes are recognised, including Pembrokeshire as the U.K.'s only fully coastal National Park. These are recognised as dramatic, scenic areas and particularly valued by society. Policy SOC_06: Designated landscapes, sets out how proposals should demonstrate potential impacts on the purposes and special qualities of National Parks.
- 1.9. This supplementary planning guidance explains the method, gives an overview of the seascape, sets out the cultural benefits and services, the forces for change and the key sensitivities. Each seascape character area is described in turn.
- 1.10. The inland boundary of the study area is defined by identifying those areas of coast which have the highest intervisibility with the sea or water body in the case of the Milford Haven Waterway and the Daugleddau.
- 1.11. A large number of datasets have been analysed to inform the study. The process followed is to define seascape character types as 'building blocks' and then define and describe seascape character areas based on these types. Site visits have helped to verify desk-based work and describe perceptual and experiential qualities.
- 1.12. The seascape types are defined as marine, intertidal and terrestrial. Twenty-one marine types are defined based on physical characteristics of bathymetry, sea bed sediments and bedrock, and wave climate. Five intertidal types are based on rock, sand/shingle, mud, saltmarsh and biogenic reefs habitats. Twenty-one terrestrial types are defined based on coastal habitats such as sand dunes, 'inland' habitats

² Carmarthen Bay, Gower and Swansea Bay Local Seascape Character Assessment, City of Swansea at al, November 2017.

close to the coast, such as mixed woodland and scrub and land uses such as different types of built up areas.

- 1.13. Forty-four seascape character areas are defined by bringing together related marine, intertidal and terrestrial types on the coast, and broadly similar marine types offshore. Each area is described in terms of its key characteristics, physical influences, cultural influences and aesthetic, perceptual and experiential qualities. Its cultural benefits and services and key sensitivities are defined and the main forces for change affecting the area discussed.
- 1.14. The study area is on Great Britain's remote western seaboard facing and including parts of the Atlantic Ocean/Celtic Sea, St George's Channel, Cardigan Bay and the Bristol Channel. The sea and coast are exposed to, and often governed by, the prevailing south westerlies. The maritime weather conditions combined with the depth of the sea and nature of the sea bed essentially define the character of the marine areas. The remote and exposed islands and islets with associated reefs and isolated lighthouses are key features of the Pembrokeshire seascape. The coast's distinctive and varied rock formations interact with the force of the sea and weather to create a wide range of dramatic coastal seascapes. Inland, the Milford Haven Waterway and Daugleddau provide contrasting sheltered seascapes, penetrating deep into Pembrokeshire's countryside.
- 1.15. Seascape character is enhanced by diverse marine and coastal habitats and wildlife of international and national importance including cetaceans e.g. dolphins and coastal birds e.g. puffins and choughs. Prehistoric promontory forts, more recent military installations, religious buildings, harbours and other historic features and wrecks indicate the area's strong connection to ancient seaways and reinforce its strong sense of place.
- 1.16. The area's qualities attract tourism and leisure pursuits, which make an important contribution to the local economy and character, but can also lead to pressures on the coast and sea. The energy and related industry, both carbon based e.g. liquid natural gas, and developing renewables, are further forces for change with potentially strong influences on character. Traditional uses such as fishing, particularly potting, still contribute to the local economy and character.
- 1.17. The report is structured to first to explain the method used (2.0), to go on to give an overview of the seascape of Pembrokeshire (3.0), to set out the cultural benefits and services of the seascape (4.0), the forces for change (5.0) and the sensitivities (6.0). Then, each seascape character area is described in turn (8.0). The appendices deal with the information and approach underpinning the study- the data available and used, seascape character typology, and background information relating to cultural benefits and services, forces for change and factors influencing the sensitivity of seascape, aesthetic and perceptual factors and a glossary.
- 1.18. The study area is indicated on **Figure 1**. The method for deriving the landward boundary is explained in the method.



St Justinians from Ramsey Sound

How to use the Guidance

- 1.19. This seascape character assessment is a tool for the management of change in the coastal and marine environment and it is equivalent to, and overlaps the landscape character assessment for the National Park.
- 1.20. Whilst there is a spatial overlap at the coast, the information it provides complements the land-based assessments as it focuses on marine and coastal character, rather than the landscape, and importantly, the document explores the relationship between land and sea.
- 1.21. The document should be referred, in particular alongside Policy 1, Policy 8 and Policy 14 of the Pembrokeshire Coast National Park Local Development Plan and Policies GN.1 (in particular criterion 3), GN.2 (in particular criterion 2), GN.34, GN.35. GN.36 and GN. 38 of Pembrokeshire County Council's Adopted Local Development Plan (LDP 1), also noting the synergies between these policies and GN.37 on Protection and Enhancement of Biodiversity.
- 1.22. The relevant Seascape Character Area assessments should be read in full and considered within the context of the main report. The assessment integrates natural and cultural considerations and includes an understanding of how places are experienced and perceived by people. The study identifies the key elements, features and characteristics that come together to create the intrinsic sense of place and character of a given Seascape Character Area.
- 1.23. The study area includes both undeveloped and developed coast. The study is therefore highly relevant to both of the National Park coastal Centre's planning policy (Policies 2 to 6) as well as landscape/seascape conservation and to various policies in Pembrokeshire County Council's adopted Local Development Plan (LDP 1), referenced above.
- 1.24. The assessment provides baseline spatial evidence at a local scale. It complements the strategic level National Seascape Assessment for Wales which identified 29 Marine Character Areas (MCAs) to inform the Wales Marine Plan. Ten of the Marine Character Areas relate to this study area, so compared to the forty four identified in the study, there is a significant difference in grain of spatial definition. The Marine Character Areas also only cover the marine area up to the high water mark. Therefore, this local seascape assessment makes a stronger link with the coast and hinterland at a finer grain, and is therefore useful for a wider range of applications.
- 1.25. Areas where seascape character should be taken into account are:
 - Within a Seascape Character Area
 - Areas adjoining a Seascape Character Area where there may be indirect linkage
 - Areas where an existing or proposed structure would be intervisible with a Seascape Character Area due to height above ground.
- 1.26. In line with the European Landscape Convention, seascapes and marine environments should be considered as being included in the definition of landscape. The UK Marine Policy Statement (2011) (from which the Welsh Marine Plan derives) indicates that:

'Seascape

2.6.5.1 The effects of activities and developments in the marine and coastal area on the landscape, including seascape, will vary on a case-by-case basis according to the type of activity, its location and its setting. There is no legal definition for seascape in the UK but the European Landscape Convention (ELC) defines landscape as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors". In the context of this document, references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.'

- 1.27. Local Development Plans only apply to the land within a local planning authority (LPA) boundaries down to the mean low water mark. There is one exception to this in Pembrokeshire³. However, Planning Policy Wales states that local plans and policies needs to consider landward and seaward pressures and related impacts on the coast.⁴
- 1.28. Seaward pressures may include waste disposal, sea fishing, increased leisure sailing, dredging of navigable channels, watersports and bathing, marine aggregate extraction, or tidal and wave power generation.
- 1.29. Landward pressures may include major development on the coast, harbour works, leisure and recreational facilities, wind power generation and coastal defences.
- 1.30. Policies should aim to protect or enhance the character and landscape of the undeveloped coastline. Although this designation does not affect the status of the area in planning terms, the features which contribute to its designation are important in formulating policies. The seascape character assessment can assist in better describing the qualities of the coastal areas. Coastal locations considered suitable or unsuitable for development, or subject to significant constraints are shown on the Proposals Map. The seascape character assessment provides part of the evidence base to inform these spatial policies.
- 1.31. Coastal Seascape Character Areas (SCAs) include the coastal strip within the National Park itself as well as the adjacent sea. These are clearly relevant to the National Park and its planning policies. In addition, the areas that are intervisible with the sea close to the coast as defined on the Seascape Character Area maps are also relevant in terms of coastal policies.
- 1.32. The Seascape Character Areas further offshore which are not directly connected to the coast are still relevant to consideration by policy as they contribute to the character of the open sea view from coastal areas.
- 1.33. The seascape character assessment considers forces for change in each Seascape Character Area. These pressures can be helpful in guiding planning policies, such as where the effects of development pressure are noticeable.
- 1.34. The assessment should be taken into account in development briefs and design guidance for all coastal developments. The basic aim should always be to carry out development which conserves and enhances the Seascape Character Area and respects its key characteristics and sensitivities.

³ Local Planning Authority control extends to the mid-channel marker around Pembroke Dock.

⁴ Planning Policy Wales Edition 11, February 2021, 6.5 Coastal Areas

1.35. Other policies that are likely to include consideration of the Assessment include:

PCNPA LDP	PCC LDP
 Shore Based Facilities – Policy 17 	 Port and Energy Related Development – Policy SP 2 Employment Land Requirements – Policy SP 3 (certain sites)
	 Infrastructure and New Development – Policy GN.3
	 Employment Allocations – Policy GN.5 (certain sites)
	Employment Proposals – Policy GN.6
 Porthgain, Saundersfoot, Solva, Tenby Harbours – Policy 18 	 Marinas – Policy GN.21
 Renewable energy - Policy 33 	 Resource Efficiency and Renewable and Low-carbon Energy Proposals – Policy GN.4
 Caravan and camping policies - Policy 41 	 Touring Caravan and Tent Sites – Policy GN.18
	Static Caravans – Policy GN.19
	 Site Facilities on Existing Caravan and Camping Sites – Policy GN.20
 Climate change mitigation and adaptation responses – Policy 34 to Policy 37 	 No direct policy equivalent.
 Recreation and Tourism – Policy 38 	 Visitor Economy – Policy SP 5 Visitor Attractions and Leisure Facilities – Policy GN.16
	 Self-Catering and Serviced Accommodation – Policy GN.17

- 1.36. The seascape character assessment is a useful tool for development management both for decision-makers and assisting developers, landowners and their consultants.
- 1.37. As stated above, the seaward limit of terrestrial planning control is generally the mean Low Water Mark with one exception in Pembrokeshire as noted above, but between high and low water mark the planning system usually needs to operate in conjunction with a range of other controls over coastal and marine development, such as licensing. Decisions on development proposals seaward of the mean Low Water Mark are generally outside the scope of the terrestrial planning system. However, developments on the coast can have effects on the marine environment and should be considered in the context of the seascape character assessment. Often, marine developments also have a coastal component.
- 1.38. For marine developments themselves, Local Planning Authorities are not the decisionmaking authorities but are statutory consultees. The Planning Inspectorate deals with Developments of National Significance (DNS) on behalf of Welsh Government and Nationally Significant Infrastructure Projects on behalf of the UK government. Local Planning Authorities and Natural Resources Wales can suggest what information

should be taken into account and this should include the local seascape character assessment as the most detailed marine spatial seascape assessment. LPAs can prepare Local Impact Reports (LIRs) setting out how they see the development affecting their area and Natural Resources Wales will also provide advice. The Seascape Character Assessment should inform such reports.

- 1.39. Overall, the seascape character assessment provides baseline evidence which can inform where and what type of development would be likely to be acceptable in terms of seascape, landscape and visual impact. The information is applicable to a wide range of scales of development from individual dwellings on rural coastlines and structures such as lifeboat stations through to offshore developments. The level of detail required will depend on the scale and likely effect of any given development, and will be defined by the Local Planning Authority as part of the screening and scoping process. The required output will range from a statement of likely effects on seascape character through to a full seascape, landscape and visual impact assessment (SLVIA or SVIA) as part of an environmental statement.
- 1.40. Seascape character needs to be considered where a proposed development lies within a Seascape Character Area or there is intervisibility between the development and Seascape Character Area/s. This may be defined by the use of computer-generated Zones of Theoretical Visibility (ZTVs) or by other means which provides robust and justifiable evidence.
- 1.41. Developers and their consultants then need to consider the effects on seascape character and how the design should respond to conserve or enhance the qualities of SCAs or at least to minimise the effects.
- 1.42. The method for assessing the effects on seascape character are similar as assessing the effects on landscape character which are set out in the Guidelines for Landscape and Visual Impact Assessment (GLVIA)) published by the Landscape Institute (see page 76 in the current Third Edition, 2013). It is suggested that the effects on individual seascape character areas are assessed in the same way as the effects on landscape character areas or LANDMAP aspect areas. Depending on the scale of development, there may be a case to subdivide Seascape Character Assessments into smaller areas which may have slightly different characteristics (and potentially different level of effects). This would need to be done in line with the current seascape character assessment method.
- 1.43. It is important to emphasise that due to the openness and generally unspoilt character of the sea that the effects of marine development within it could have a substantial impact on surrounding areas intervisible with it. Similarly, development on areas of coast or hinterland exposed to view from the sea has the potential for significant effects on the character and users of the sea, even if outside a Seascape Character Area. The effects not only include visual impact but also the effects on coastal processes which could more fundamentally change the character of an area. For example, a marine development may interrupt and change current sedimentation processes so that some parts of the coast are starved of sand while others may accumulate sand in greater quantities.
- 1.44. The seascape character assessment provides a list of factors that contribute or detract from sensitivity. These should be taken into consideration when defining a level of

sensitivity for a given seascape character area in relation to a specific type of development.

- 1.45. The assessment lists key characteristics informed by detailed descriptions. It should be assessed if those key characteristics are removed or changed by the proposed development, or if the development itself would become a key characteristic. The greater the effect, the more likely it is to be significant. In considering the character of a Seascape Character Area and how development may affect it, the detailed descriptions should be fully taken into account as well is the key characteristics.
- 1.46. Development should be assessed to see if it is in line or in conflict with policies relating to landscape/seascape character. The effect on National Park qualities and how they are conserved or enhanced should also be explored.
- 1.47. The developer should employ suitably qualified chartered landscape architects who are experienced in seascape assessment to carry out SLVIAs/SVIAs. Similarly, for larger scale developments, the local planning authorities may also be advised by suitably qualified specialists to ensure that the assessments are carried out in line with good practice and arrive at reasonable conclusions which can be relied on for decision-making.

2. Method

Development of seascape character assessment methodology

- 2.1. The method for this study seeks to build on current guidance but is tailored for the particular scale of assessment, for Pembrokeshire and the study's location in Wales. It was the first local seascape study of its kind in Wales and may help set the pattern for future local studies. The brief is clear in its emphasis on an assessment of the coastal landscape's seascape character in its marine setting although wholly marine areas away from the coast require coverage, and many are intervisible with the coast in any case.
- 2.2. The terms used in the study are to be found in the Glossary in **Appendix G**. This uses terms primarily defined by Seascape Character Area and Landscape Character Area guidance. Other sources include the European Landscape Convention, and LANDMAP to ensure that there is compatibility with existing assessments in the Welsh context.
- 2.3. The original study was prepared within the context of the regional seascape character assessment 'Welsh seascapes and their sensitivity to offshore developments' which was carried out broadly in line with Countryside Council for Wales-led 2001 seascape guidance. However, it piloted a new method developed from 'An approach to Seascape Character Assessment' which remains current. In Wales, a pilot study for Countryside Council for Wales in north-west Anglesey in 2012 tested the use of different information to define types and character areas at a regional and local level and this also informed the method. For this updated guidance, the main additional guidance relates to seascape sensitivity. Though this has been prepared for the Marine Management Organisation it is considered to be relevant to Welsh waters with NRW staff involved in consultation on the document.
- 2.4. The relevant seascape guidance mentioned above and taken into account by this study is as follows, in date order:
 - Guide to best practice in seascape assessment, Hill et al, Countryside Council for Wales and University College, Dublin, Brady Shipman Martin, 2001.
 - Guidance on the assessment of the impact of offshore windfarms: seascape and visual impact report, Enviros, Department of Trade and Industry, 2005.
 - An assessment of the sensitivity and capacity of the Scottish seascape in relation to windfarms, University of Newcastle, Commissioned Report no. 103, Scottish Natural Heritage, 2005.
 - Welsh seascapes and their sensitivity to offshore developments, Briggs, J.H.W. & White, S, Countryside Council for Wales Policy Research Report No. 08/5, January 2009.
 - Dorset Coast Landscape and Seascape Character Assessment, LDA, C-SCOPE, 2010.
 - An approach to Seascape Character Assessment, (NECR105), Natural England, Scottish Natural Heritage and Countryside Council for Wales, 2012.

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- Seascape Characterisation around the English Coast (Marine Plan Areas 3 and 4 and Part of Area 6 Pilot Study) (NECR106), Natural England, 2012.
- An approach to seascape sensitivity assessment (MMO 1204), White Consultants, December 2019.
- 2.5. In terms of status, the Natural England 2012 approach is advisory but generally accepted for use in Wales.
- 2.6. The scale of the assessment is at local authority level. In Wales, there is the national seascape assessment above. In England, there are four levels with the most detailed/lowest level also named 'local scale'. However, this addresses individual bays, coves or rocky coastlines. This is considered to be at a greater level of detail than required for this study and equates more with detailed Shoreline Management Plan areas on the coast.
- 2.7. Other guidance prepared primarily for landscape and visual assessment is also relevant to this study. It is important to ensure that terms and approaches to seascape are the same as for landscape insofar as the substantially different qualities of the two environments allow. Relevant publications to the updated guidance include:
 - Skye and Lochalsh landscape assessment, Stanton, C. Scottish Natural Heritage Review No.71, 1996.
 - Guidelines for Landscape and Visual Impact Assessment, third edition, Landscape Institute and Institute of Environmental Assessment, 2013.
 - An Approach to Landscape Character Assessment, , Christine Tudor, Natural England, October 2014.
 - An approach to landscape sensitivity assessment, Christine Tudor, Natural England, June 2019.
 - The LANDMAP Information System, Countryside Council for Wales, March 2012.
 - Assessing landscape value outside national designations, TGN 02-21, Landscape Institute, 2021.
- 2.8. The documents are referred to in the text and appendices as appropriate below.

Approach to collection of data and mapping

- 2.9. Data for the study was provided by the Countryside Council for Wales for the original study, the National Park Authority (via Welsh Government) and Pembrokeshire Coastal Forum as defined in **Appendix A**. The data provided and suggested from other sources covers a very large range of information. Some of the data has been found to be essential for defining Seascape Character Types whilst other data has been useful in defining Seascape Character Areas and assisting in their description. Not all marine data necessary has been available and some time has been needed to explore sources and availability. It is hoped that this study defines more clearly what is required for a Seascape Character Assessment. The Appendix notes the key datasets.
- 2.10. Non-geospatial data from the UK Coastal Atlas for Recreational Boating prepared by the Royal Yacht Association (RYA) used in descriptions of marine use of each Seascape Character Assessment. Oceanwise geospatial and web data on marine wrecks has provided information in sufficient detail to make unnecessary the use of chargeable data from Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW).

Study process

2.11. A flow diagram of the process is shown in **Figure A**. This shows the series of tasks and reporting undertaken.

Figure A: Flow Chart of Study Process



- 2.12. The interim report was important to set out the framework for the assessment and to define a typology. Feedback from the client steering group then informed the refinement of the Seascape Character Types and definition of Seascape Character Areas. In practice there was an ongoing dialogue between the consultant team and client to guide study boundaries, Seascape Character Areas, Seascape Character Areas descriptions and presentation.
- 2.13. A multi-disciplinary team addressed the various aspects of the assessment coordinated by a landscape architect/seascape specialist. The aspects have included geology/marine and coastal processes, cultural and historical factors, marine and coastal uses including tourism and recreation, seascape, landscape and visual factors and Geographical Information Systems(GIS). GIS was used to help define the Seascape Character Types as mentioned above and expanded on

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below. Existing studies and GIS datasets have been used to provide the basis for the boundaries, context and description for each Seascape Character Area. In practice, the study has been iterative with refinement of boundaries and descriptions dependent on information feeding into the process.

2.14. Site survey work was undertaken by two seascape specialists. The purpose was to refine Seascape Character Area boundaries if necessary, to explore aesthetic and perceptual qualities and to note forces for change and potential sensitivities. Representative viewpoint locations were chosen, coinciding with Seascape Character Areas and their boundaries where possible to optimise efficiency. Structured fieldwork sheets allowed the characteristics and use of the area to be noted as well as the aesthetic and perceptual experience. A sample is shown in **Appendix H**. Representative photographs were taken from each viewpoint except on a few occasions when rain prevented this. The site visits in the winter season meant that the area has been observed when not being used as fully as in the summer and weather and poor sea conditions have led to survey work being primarily onshore. This was mitigated by the team's local knowledge through living and working in the area and by datasets such as the Welsh Activity Mapping (WAM) dataset. The coastal visits covered the majority of the coast and Daugleddau / Milford Haven Waterway, omitting only a small number of areas for which the study team had prior detailed knowledge through previous site work for other landscape or seascape related projects or through leisure use over a long period. The site visits were generally carried out in acceptable visibility for Landscape Character Area / Seascape Character Area work although there were intermittent periods of rain as already noted. One sea trip was undertaken which ran from Milford marina out to the middle of St Brides Bay covering intermediate areas including Seascape Character Areas 24, 25, 26, 28, 31 and 32. This has given an indication of sea conditions, marine seascape character and the visibility and perception of the coast and its influence at different distances. Team members have previously travelled across Ramsey Sound as part of a Seascape and Visual Impact Assessment and around Ramsey Island (Seascape Character Areas 17 and 18). Overall, the combination of site visits, knowledge of the area and desk study is considered to have been sufficient to inform the study to the appropriate level of detail. The update study has been desk based with revised photos taken where change has occurred by National Park staff.

Defining boundaries

- 2.15. The parameters governing the study area boundaries are defined in Appendix 2 of the brief to include the National Park and its setting, and also the remainder of Pembrokeshire The study area is 12 nautical miles (nm) out from the coast and islands such as the Smalls, defined by a line 90 degrees from the coast from Cardigan Island to the north and Pendine Sands to the south east (see **Figure1**).
- 2.16. Discussion of the inland extent with the client steering group at the inception meeting indicated a desire that the inland boundary should include land which has a strong visual relationship with the sea/tidal waters, not just coastal landscape character types such as dunes or cliffs. Areas with some intervisibility with the coast could be excluded. The inland extent has therefore been defined by overlaying 1:25,000 Ordnance Survey mapping, the LANDMAP visual and sensory layer, the Countryside Council for Wales dataset of land with intervisibility with the sea and Phase 1 intertidal habitats which define the tidal limits. Google Earth with Street View has further informed boundaries.
- 2.17. Initially areas with a high intervisibility with the sea were mapped (red or orange graded squares in the mapping). This line sometimes went inland, e.g. at Mynydd Carningli, and sometimes ran close to the coast where there was a coastal plateau. For the areas bounding the Milford Haven Waterway, areas of lower

visibility (blue squares) were marked as they only had views of the inland waters rather than the open sea and therefore would have a lower rating. Nevertheless they would contribute to seascape. Areas with visibility of the sea but not connected to the coast or with weaker intervisibility were not included. These coarse boundaries were then refined by studying and responding to the landform including high points and ridgelines. The extents of the tidal areas were checked so that they were included in the study area. The boundaries were then rechecked against the visibility mapping and using Google Earth street view in areas of uncertainty. In some areas such as peninsulas (i.e. Marloes and the western end of the St David's peninsula) all land has been included due to the highly maritime, exposed character of the landscape. The terrestrial types have been defined up to this inland boundary.

Deriving Seascape Character Types (SCTs)

2.18. A draft typology of marine, intertidal and seascape character types with a proposed nomenclature was prepared and submitted as part of the interim report. This built on the Countryside Council for Wales pilot study in Anglesey / North Wales, knowledge of Wales seascapes and coastline overall, LANDMAP and of the Pembrokeshire marine and coastal environment. It also reflected the requirements of the brief. A different approach was taken for each of the three categories, explained below.

Deriving Marine Seascape Character Types

- 2.19. The marine Seascape Character Types differ from the NECR105⁵ approach as they form 'building blocks' from which the proposed Seascape Character Areas amalgamate. (In NECR105, types are generic classifications which may cover a number of large areas which themselves are individual Seascape Character Areas.) The types are also proposed to be at one level, the local authority level, reaching out to sea the full 12 nautical miles offshore.
- 2.20. The Seascape Character Types extend from the 12 nautical mile limit to the edge of the intertidal types which were defined first. It was decided that the prime drivers of difference in marine character were the physical characteristics of bathymetry, sea bed sediments and bedrock, and wave climate. From this, other secondary characteristics flow such as sea use which has been used as a contributor to the definition of types elsewhere. For instance, sandbanks tend to have shallow water and higher waves and would be avoided by boats / shipping. Deep water high wave coasts tend to be avoided or used in a limited way e.g. Strumble Head coastal waters. Coarse sediment or bare rock on the sea bed such as in Ramsey Sound indicates higher water energy whilst fine sediments such as mud indicate low energy, such as the middle of St Bride's Bay, where tankers anchor. The three main drivers were subdivided as follows:
 - Shallow depths 0-30m, moderate depths 30-60m, and deeper waters >60m.
 - Sea bed sediments ranging in grain size from gravel to sand to mud and bedrock exposed on the sea floor towards islands/islets. Sea floor sediment is contributed to by erosion, lost through depositional processes, and may be transported by currents along the coastline.
 - Wave climate relating to exposure (wind), tidal and current conditions

2.21. The following data has been used to inform the classification:

⁵ An approach to Seascape Character Assessment, (NECR105), Natural England, Scottish Natural Heritage and Countryside Council for Wales, 2012.

- British Geological Society Bath250- for Bathymetry/depths of waterprovided by the Countryside Council for Wales
- British Geological Society DigMap250- for sediment seabed geology-
- Wave climate from data obtained for the Countryside Council for Wales by Land Use Consultants in a pilot study.
- 2.22. Types were defined and then further qualities were added to each type to further inform potential seascape character area boundaries. These were:
 - Sea floor topography slopes, channels/troughs, islets.
 - Turbulence
 - Bedrock type
- 2.23. The typology was tested on two pilot study areas: Ramsey Sound and the mouth of Milford Haven. The technique picked up a mix of fine grain areas such as the three types in the tidal strait of Ramsey Sound, which slopes into a central trough and is more steeply shelved and sheltered on the west side than the east. Similarly, the area across the islets W of Ramsey has north-east / south-west lines of islets flanked by shallow slopes, controlled by igneous bedrock geology, and separated by a deeper channel presumably used by shipping. In the Milford test area, the seaward limit of the estuary mouth was placed at the 30m depth contour which also subsequently was found to coincide with the extent of the Milford Haven Harbour Authority Area. The types therefore appeared to usefully differentiate areas as a suitable building block for Seascape Character Areas.
- 2.24. There are 26 marine types spread across 81 defined Seascape Character Types. The relationship between the drivers/factors can be discerned in Figures 2, 3 and 4 and the numbered SCTs are summarised in Figure 14.

Deriving Intertidal Seascape Character Types

- 2.25. The brief stated that Intertidal types should be defined by the Phase 1 habitat intertidal dataset. This is an extremely detailed, fine grain and apparently accurate dataset and was therefore used to define the limits of the marine and terrestrial types on either side. As the dataset was quite complex such as differentiating between different types of rocks in narrow bands along rocky shores (e.g. high, medium and low energy littoral rocks) it was decided to amalgamate these into simpler categories which make sense at a seascape scale. The types were defined as:
 - Mud
 - Sand and shingle
 - Rock
 - Saltmarsh or saline reedbed
 - Biogenic reef.

Deriving Terrestrial Seascape Character Types

2.26. Terrestrial types are based on LANDMAP Landscape Habitat aspect Level 3 layer which complements the intertidal layer in terms of its Phase 1 derived source material but is at a larger, landscape scale. The aspect areas have been rationalised and amended to obtain a reasonable grain of landcover definition without new digitising. This has meant that small scale settlements have not been defined but these are considered within the Seascape Character Area description. The types are defined as:

- Sand Dune
- Beach/rough ground above High Water Mark
- Coastal heath and grassland mosaic
- Maritime cliff and slope
- Grassland and semi-natural mosaic
- Grassland mosaic (Ministry of Defence range)
- Tall Herb and Fern (bracken)
- Heathland
- Broadleaved woodland and scrub
- Mixed woodland and scrub
- Coniferous forest
- Woodland mosaic
- Mixed farmland
- Mixed farmland and woodland
- Improved grassland with woodland
- Pastoral farmland
- Grazing marsh
- Wet mosaic
- Mire and Swamp
- Open water
- Built up area
- Built up (industrial)
- Built up (port)
- Built up (resort)
- Amenity

Overall comments on types

2.27. The full typology is as set out in **Appendix B.** The types reflect the scale and character of the underlying seascape/landscape. Marine types are generally larger scale further from the coast with smaller areas along more complex stretches of coast such as around islands. Intertidal types are generally very narrow, especially along rocky coasts and are not apparent on larger scale maps. Terrestrial types vary in scale with farmland and pastoral types covering large areas of hinterland extending to the coast in places. There are smaller areas of the important coastal and dry mosaic areas dominated by semi-natural habitats.

Deriving Seascape Character Areas

2.28. The boundaries of the Seascape Character Areas have been primarily driven by the marine Seascape Character Types as these define the character of both the marine areas and the coast with different geological formations. These in turn dictate coastal and sea use to a large extent. The brief required coastal Seascape Character Areas to include coast and marine components along with the relevant hinterland. Purely marine Seascape Character Areas were also expected. The

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boundaries of each coastal Seascape Character Area running inland is primarily defined by landform and geology or the viewshed separating adjacent Seascape Character Areas. The intertidal and terrestrial types have generally not been definitive in determining boundaries and Seascape Character Area boundaries therefore divide up these types which have been split in geospatial data layers as requested by the brief. The types have informed the descriptions for each Seascape Character Area.

2.29. The Seascape Character Area boundaries predate the Marine Character Areas. The latter follow some of the local boundaries but overall are at a broader brush scale with associated criteria.

Aesthetic and perceptual factors

2.30. Aesthetic and perceptual factors are important in undertaking a character assessment. This information cannot be fully researched as part of the desk study and so has been collected as part of the site survey. Whilst aesthetic terms can be collected in a reasonably objective way, perceptual terms are more subjective. Both rely on the professional judgement of the surveyor. The assessment is structure in a systematic way to produce as consistent a survey as possible. In order to achieve this, each term has been defined and a sample illustration prepared for aesthetic terms. The latter cannot hope to capture all instances but relates to certain scenarios which may occur in the study area. The terms have been used as a checklist for the site survey forms / Seascape Character Area descriptions. They derive from seascape guidance in England and Wales, landscape character guidance and the Skye and Lochalsh Landscape Character Assessment. The definitions were derived and adapted from LANDMAP guidance (2003) where possible to try to achieve consistency between the assessments. The proposed terms and definitions are shown in **Appendix F**.

Sensitivity

- 2.31. New guidance on seascape sensitivity in (MMO, 2019) has resulted in a modification of the treatment of sensitivity in this study. Seascape character sensitivity is a term applied to marine character and seascape and the associated visual resource, combining judgements of their susceptibility to a specific type of development / development scenario or other change being considered and the value(s) related to that seascape, marine character and visual resource. Different types of development could affect the same area in different ways and may require different scales of approach. For instance, offshore windfarms are considered in a separate national study⁶. Therefore, the sensitivity section is structured to explore indicators that should be considered in assessing an area's susceptibility to development/change. In addition, those factors which contribute to value are explored. Often there is an overlap between factors but they are relevant in different ways to both susceptibility and value. This section can be used to inform sensitivity assessments for particular types of developments using appropriately selected and modified criteria and indicators.
- 2.32. Landscape Institute guidance on value (2021) is intended to be used outside national designations but relevant factors and indicators will be taken into consideration in the revised assessment.

⁶ Seascape and visual sensitivity to offshore wind farms in Wales: Strategic assessment and guidance. Stages 1-3. NRW Evidence Series. Report No: 315, NRW, Bangor, 2019.



Barafundle Bay

3. Overview of the Pembrokeshire Seascape

3.1. Local Development Plan 2 provides a suitable introduction to the Pembrokeshire Coast National Park seascape stating that it:

'is widely recognised as Britain's only predominantly coastal National Park. The splendour of its coastline, the influence of the seascape, its spectacular scenery, and rugged, unspoilt beauty, provide a scenic quality which was recognised in its designation as a National Park along with the spectacle of the islands off the Pembrokeshire coast.' (4.56)

Although there is no direct equivalent in Pembrokeshire County Council's adopted Local Development Plan (LDP 1), policy GN.1, criterion 3 refers to landscape character, quality and diversity, including the special qualities of the Pembrokeshire Coast National Park and neighbouring authorities. Policy GN.2 of the same Plan, criterion 2, refers to local character and landscape / townscape context.

3.2. The study area coastal boundary runs from Cardigan Island in Cardigan Bay to the north, to the Taf estuary area in Carmarthen Bay to the south. It is on Great Britain's remote western seaboard facing the Atlantic Ocean/Celtic Sea due west, St George's Channel to the north east, Cardigan Bay to the north, and Bristol Channel to the south east and east. The sea and coast are exposed to, and often governed by, the prevailing south westerlies. The area's resulting distinctive maritime climate means the weather is almost always different from that occurring further east in the UK. The area's distinctive and varied rock formations interact with the force of the sea and weather to create a wide range of dramatic seascapes.

Physical influences

GEOLOGY AND COASTAL FORM

- 3.3. Pembrokeshire has virtually continuous exposure of rocks in cliffs, headlands and bays around its long coastline. In addition, there are extensive areas of sand dunes, such as those at Freshwater West, Frainslake and Broad Haven South. Some locations have shingle banks such as the one at Newgale or extensive sand areas such as Poppit. It is an area rich in rock types and formations, with varied character and used extensively for the study of geology.
- 3.4. The rock succession spans from late Precambrian (<650 Ma (million years ago)) to late Palaeozoic (285 Ma). The offshore bedrock, beneath the sea floor sediments, is overlain by younger rocks. The rocks in Pembrokeshire show the effects of ancient mountain-building episodes that uplifted, deformed and eroded rocks, leaving characteristic structural trends that control the direction of the landform. More recently, repeated glaciations have further shaped the landscape leaving sediment deposits. In the last glaciation (18,500 years ago), north Pembrokeshire to St Bride's Bay was covered by an ice sheet, but this didn't extend across southern Pembrokeshire, where tundra conditions would have been found.
- 3.5. Precambrian rocks are exposed only in small areas along the southern St David's peninsula. They comprise metamorphosed sedimentary rocks and intrusions. Cambrian marine sandstones and shales are also well exposed on the St David's peninsula e.g. Solva. In the Ordovician era, thick successions of deeper water shales with graptolites (e.g. Abereiddi), and turbidites (e.g. Poppit Sands) were deposited with high cliffs on the north coast reaching 150mAOD around Pen yr Afr. Spectacular Ordovician sandstone cliffs reach 140mAOD around Penbwchdy. There was also widespread volcanic eruption and intrusion of magmas. The

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resistant igneous rocks include the spectacular pillow lavas of Strumble Head with cliffs 50mAOD high, the rhyolitic rocks on Ramsey Island, and prominent tors (e.g. Carn Llidi at 181mAOD high -St David's Head gabbro, Garn Fawr at 213mAOD high and Penberi). The islets of the Bishops and Clerks are mostly igneous, representing continuation of this pattern into offshore areas. Local volcanic activity centred on Skomer Island. The Marloes peninsula has extensive coastal exposure of these rocks, while their offshore continuation is shown by the islands/islets of Skomer, Grassholm and the Smalls. The siltstones, limestones and sandstones of the period were formed in warm shallow, fossiliferous seas (brachiopods, corals). Towards the end of the Silurian a transition from marine to non-marine conditions is shown by the change to red-bed deposition of the Old Red Sandstone (e.g. St Anne's Head at 46mAOD high, Freshwater West with its wave cut platform, Freshwater East and Pendine). This continues into the Devonian, represented by red sandstones and mudstones laid down on coastal plains, mudflats, salt marshes and in braided rivers. These terrestrial environments were inhabited by early plants, armoured fish and amphibians. The collision of continents created folds and faults which is widely evident in the cliffs of north Pembrokeshire (e.g. Abereiddi Bav).



High clffs at Penbwchdy

3.6. Upper Devonian sedimentation continued in red beds, representing sediment deposited in rivers and on floodplains as the mountains eroded. The Carboniferous saw a return to marine conditions, with the Carboniferous Limestone laid down with shoals and lagoons (rich in corals, brachiopods). The Limestone forms prominent headlands and is exposed in steep coastal cliffs in south Pembrokeshire (e.g. Linney Head at 40mAOD high, Trevallen, Stackpole at 35mAOD high). This limestone coast displays distinctive erosion features such as stacks, caves, arches and blowholes. In mid to late Carboniferous times sedimentation changed to sandstones and mudstones of rivers and delta plains vegetated by giant ferns and horsetails. The peat swamps form the source for coals of the Coal Measures (Pembrokeshire Coalfield). Further continental collision led to the uplift resulting in east-west folds and faults, well seen in south Pembrokeshire (e.g. Ladies anticline at Saundersfoot, Stackpole, West Angle Bay).



Carboniferous limestone cliffs: Whitesheet Rock

- 3.7 Younger rocks (Permian, Mesozoic and Cenozoic) are preserved in the offshore bedrock. Triassic terrestrial sandstones, and Jurassic marine mudstones and limestones, are comparable to the rocks seen along the Vale of Glamorgan coast. Triassic rocks form the offshore bedrock in the Bristol Channel Seascape Character Areas. They are cut by many east-west stretching faults formed during subsidence of the Bristol Channel basin. Cretaceous sea levels were exceptionally high, and the coastal plateaus of headlands in west Pembrokeshire (e.g. seen from tors like Carn Llidi) may represent wave cut platforms from that time. Cenozoic rocks sandstones, mudstones and lignites form offshore bedrock in the west of the study area. Uplift led to sea levels higher than today over Pembrokeshire, leading to marine erosion that shaped the present landscape. Offshore bedrock is faulted north east-south west, and north west-south east. The Milford Haven / Daugleddau estuary drainage system formed at this time.
- 3.8. Quaternary glaciations over the past <450,000 years led to Irish Sea ice crossing into western Britain to various extents. Sea levels in glacial and interglacial periods ranged <50 m lower to <5 m higher than today across Pembrokeshire. A glacial meltwater channel is preserved at Cwm Dewi by Dinas Head, while the raised shingle beach behind Newgale represents interglacial sea level rise.

MARINE AND COASTAL PROCESSES

3.9. Coastal processes today continue the modification of coastal form and seascape character. Processes include wave action, sediment movement on-offshore or along the shore (longshore drift) and fluvial sediment supply from rivers into estuaries. Wind and wave action cause erosion through abrasion, attrition and hydraulic action and transport and deposit sediment through traction, saltation and suspension. The prevailing south westerlies and movements of tides and currents cause wave and wind erosion particularly on the exposed west facing coasts. The protruding St David's Peninsula and Ramsey and the Marloes Peninsula and Skomer with associated islets are an indication of the harder rocks, still battered by high energy waves. The softer rocks comprising the deep St Bride's Bay coast between continue to erode faster as do the dunes in exposed locations such as Freshwater West. Shores where sedimentation occurs include Carmarthen Bay also accumulating from sediment from the Taf / Twyi estuary. Longshore drift

occurs along the southern coast generally from west to east with groynes installed to attempt to control this around Amroth. Currents between islands keep these scoured with the central channel in Ramsey Sound eroded to a great depth.

- 3.10. The sea has a very wide tidal range typically between 4.1m to the north at the Teifi estuary, 5.5m at Ramsey Sound and 6.6m east of Milford Haven. At high water the tidal flow is from east to west along the Bristol Channel and from the north east along St George's Channel. Tidal flows reach their maximum three hours before high water where flows run east-west along the Bristol Channel and sweep north round into St George's Channel and Cardigan Bay. The flow is reversed three hours after high water where flows are strongly in the opposite direction. This causes turbulence in some areas such as around St Anne's Head and at the mouth of the Milford Haven Waterway with a confusing sea and swell. To the west of Skokholm there are fast tidal streams up to 4 knots and tidal races (Wildgoose Race), and eddies off Gateholm. The tide flows through constricted areas such as Jack Sound, between Skomer and the Marloes peninsula, and through Ramsey Sound with up to a 6 knot tidal race with gyres.
- 3.11. Higher waves occur where there is shallower water. This occurs on the coast, around the islands and islets including the Smalls and Gateholm and the Bishops and Clerks and where there are shallow sand bars. Waves tend to be higher on the west facing coasts and lower along Carmarthen Bay and the adjacent sheltered south east facing coast such as at Lydstep and Saundersfoot.



Waves at Broadhaven (South)

MARINE AND COASTAL BIODIVERSITY

- 3.12. There are numerous Special Areas of Conservation (SACs) including West Wales Marine, Pembrokeshire Marine, Bristol Channel Approaches, Cardigan Bay, Carmarthen Bay and Estuaries, Cleddau Rivers and the Limestone Coast of South West Wales. Special Protection Areas (SPAs) include Ramsey and St David's peninsula coast, Skokholm and Skomer and the seas off Pembrokeshire, Grassholm, Castlemartin coast and Carmarthen Bay. There is a Marine Conservation Zone around Skomer. National Nature Reserves lie on Ramsey, Skomer, Skokholm, Grassholm and Stackpole. Together these designations cover 75% of the coastline and around 60% of the inshore area (see Figure 7).
- 3.13. The maritime habitats include the water column itself and seabed areas of gravel and sand interspersed with submarine cliffs, rocky reefs, stacks and islets.
- 3.14. The water is home to harbour porpoises, bottlenose dolphins, and Atlantic grey seals along with numerous fish species. The seals can be observed resting on isolated beaches or shelving rocks on the more westerly parts of the coast and use the caves and beaches for rearing pups. Harbour porpoises can be seen in places such as Ramsey Sound. Sightings of other species including sharks, orcas, blue whales and turtles are much more rare. All these animals significantly enrich the experience of the seascape and attract many visitors.

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- 3.15. The islands and parts of the mainland support a variety of seabirds including puffins, razorbills, shearwaters, fulmars and guillemots on Skomer, gannets on Grassholm, Manx shearwater and peregrine falcon, chough, skylarks and stonechat on coastal habitats The coastal waters provide overwintering areas for grebe, scoter duck and other diving species. These birds often animate the view from the coast path and boats and again attract many visitors.
- 3.16. The sand and gravel seabed is inhabited by surface and burrowing animals such as crabs. The underwater cliffs and reefs accommodate brown kelp, red seaweed, sponges, sea squirts and anemones amongst other species.
- 3.17. The coastal habitats are littoral rocks and beaches with varying degrees exposure and immersion leading to distinctly different communities of plants and animals such as seaweeds, anemones and molluscs.
- 3.18. The estuarine muds support worms and molluscs on which waders and wildfowl feed. Milford Haven and the Daugleddau estuary have high biodiversity and the former hosts eel-grass beds and saltmarsh and a coastal lagoon lies at Gann, Dale. The area is an important feeding ground for wildfowl and waders such as wintering teal, wigeon, curlew and shelduck as well as redshank, black tailed godwit, bar tailed godwit and turnstone. Otters are found around the Daugleddau. Migratory fish including sewin (sea trout) and salmon are found in many watercourses, for example in the Teifi. Sea bass and dogfish can be found in Milford Haven waterway. Various species of flatfish can be found along the southern coast and rocky shore habitats support a number of fish species, including blennies.



Lagoon at Dale

- 3.19. Exposed coastal habitats of cliff top grasslands and heath support a rich weave of plants including thrift, sea campion, sea plantain, spring squill and red fescue. These bring colour and texture to the rocky cliffs and slopes adding extra pleasure to coastal walks. On more sheltered slopes bracken is apparent, sometimes providing shade to carpets of bluebells, primroses and red campion.
- 3.20. Woodland and scrub reaches the coast in places with associated species, often in incised valleys with watercourses which have wound inland through the plateau to the coast. These add to the diversity of the coastal habitats.

Cultural influences

HISTORICAL

3.21. Pembrokeshire's coastline is long and its harbours are good. It juts out into ancient seaways – not only the busy mouth of the Bristol Channel and the sweep of Cardigan Bay but also into a north-south route that encompasses Ireland and western Britain, one that was known to classical antiquity and to the Norseman.

- 3.22. The seascapes of Pembrokeshire have evolved over millennia. To the east, the paleolandscapes of the Bristol Channel offer the potential for discovery of evidence of our Mesolithic ancestors- sometimes apparent on beaches such as Amroth. After sea level rise at the end of the Ice Age, the intervisibility of shore, hillslope and sea was clearly significant to the people who erected the prehistoric monuments, in which Pembrokeshire is particularly rich. An example is Mynydd Carningli with its commanding views over Newport Bay. The area also has 54 enigmatic rehistoric promontory forts, the densest concentration in Wales, though many of these have nearly been lost to wind and water– Flimston Bay, one of the most spectacular, Great Castle Head at Dale and Porth y Rhaw have all been badly eroded. Conversely, sands may have covered important archaeological sites a Roman port and an early Christian centre, the predecessor of St David's, may lie under the dunes of Whitesands Bay.
- 3.23. The cathedral and the coastal chapels are eloquent reminders that the sea was the great route of the early Christian church in Wales and Ireland St David's was only 'remote' from the perspective of London or Canterbury. The monastery on Caldey island perpetuates this tradition.
- 3.24. The sea has also had a powerful impact on strategy and historical events. Milford Haven was the landing-place of Henry Tudor, Henry VII, the *mab darogan* who marched from here to defeat Richard III at Bosworth Field. The landing is obliquely referred to in Shakespeare's court-drama *Cymbeline*, when Imogen, on hearing that her exiled husband may await her at Milford Haven, says:

'. . . how far it is

to this same blessed Milford; and, by the way,

Tell me how Wales was made so happy as

To inherit such a haven'

3.25. Milford Haven and later Pembroke Dock were the sites of royal navy dockyards from the eighteenth/nineteenth centuries until the late twentieth. There is a particular cluster of defensive sites all around the coast of Pembrokeshire, more marked than in any other area of Wales. From the time of Thomas Cromwell, its overall strategic importance has been recognised – though the French landing at Strumble Head in 1797 was easily repulsed with the French surrendering in the Royal Oak in Fishquard. Naval ship-building was established at Neyland c. 1760 and at Milford Haven in 1796. It was relocated to Pembroke Dock in 1812, which became one of the most important naval ship-building centres in Britain. Facilities were substantially extended in 1830-32 and again in 1844. Such was the area's importance in strategic terms that forts were built to guard the Haven from possible attack by the aggressive government of Napoleon III. Decline set in after the introduction of the Dreadnoughts and the dockyards finally closed in 1926. Civilian dockyards were also established here. During World War II Pembrokeshire played an important role in the Western Seaboard Defences strategy, when there were twelve airfields in active operation. Remains are still apparent such as the look out on Carn Llidi. Pembroke Dockyard provided a base for military flying boats from 1930 to 1959 and there was a long-standing Army presence in Pembroke Dock with barracks at various locations including West Llanion, Barrack Hill and Pennar Point.



The mouth of Milford Haven

- 3.26. Above all, the coastline has shaped the trade and commerce of the area. Haverfordwest was established at the navigable head of the western Cleddau. Shipyards and creeks were established along the coastline, and the area preserves many fine examples of the small ports that are a feature of the Welsh coast. Lime was quarried from its coastal cliffs, and burnt in kilns by harbours and on the sea-shore. Pembrokeshire also had a long-lived coal industry. Some of its collieries such as Trevane, were situated on the coast. Others lay further inland; those around Saundersfoot only developed when a railway was built to connect them with the harbour, in 1829. The ironworks at Stepaside also added to coastal trade. Coastal slate guarries were opened along the north coast, of which the largest was Abereiddi, where the pit has been breached by the sea. Slate was exported from Porthgain harbour which later turned to brickmaking using slate waste and then dolerite export. The establishment of a new harbour at Goodwick, capable of handling large ocean going steamers, and subsequent fast rail links established by the Great Western Railway brought investment in Fishguard. The Fishquard Bay Hotel remains as one of the only examples in the region of a major purpose built railway hotel for transatlantic trade. Fishing has been an important regional industry - Milford even boasted a whaling industry at one time. With the introduction of a rail link to wider markets and refrigeration, it expanded to become a major fishing port.
- 3.27. The refineries and oil terminals which began to appear around Milford Haven from 1957 locked the area into a global economy. Other energy-distribution projects have taken their place since, and the sea remains as important to Pembrokeshire as ever.

PRESENT DAY MARINE AND COASTAL ACTIVITIES

3.28. Pembrokeshire is established as a popular tourism destination especially around its coast. These tourists are increasingly looking for coastal recreational activities whilst on holiday or coming to the area specifically to participate in such activities. The intensity of use relates to the ease of access with places allowing vehicle access close to, or on, the beach being popular honeypots such as Tenby, Saundersfoot and Amroth to the south east and Newport Bay, Newgale (St. Brides Bay) and Whitesands Bay to the north and west. Other coastal locations are very remote, allowing access only by small boat. Activities can vary from general beach activities which are popular at the many good, clean beaches to the more strenuous activities of kite surfing, climbing, diving and coasteering which was invented in the area. The intensity of use is also determined by school holidays as well as the weather.



Caravans at Wiseman's Bridge

- 3.29. Coast walking along the Pembrokeshire Coast Path National Trail (part of the Wales Coast Path) and linked paths is very popular. On the basis of information provided by visitor surveys it is estimated that 1 million people use the Coast Path each year. The coast path is 300km long due to the highly indented and complex nature of the coast. Certain stretches are used more intensely than others- mainly those close to the honeypots such as Tenby and Whitesands Bay etc.
- 3.30. Sailing of yachts is popular from locations such as Neyland with its marina in Milford Haven, Tenby and from natural harbours such as Solva and the Teifi Estuary to the north. Motor cruising is also evident from these locations. Other popular marine recreational activities include paddleboarding and kayaking due to the relative ease of access to the water. Other launchable craft that are popular are day motor boats and sailing dinghies out of most beaches with slipways. Sea angling is also popular from both the shore and boats which can go some way offshore.



Coast Path at St Justinians- a popular stretch

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- 3.31. Wildlife related recreation trips are popular such as to Skomer Marine Nature Reserve and around Ramsey Island and out to Grassholm for its gannetry. Diving sites are also found in these areas due their biodiversity.
- 3.32. The fishing industry in Pembrokeshire has moved away from historical deep sea trawling with many fishermen now looking to inshore fishing for crustaceans such as crab and lobster. This results in pots being found around practically any rocky shore.



Potting fishing vessel off Strumble Head

3.33. Commercial shipping on the Milford Haven Waterway, primarily of liquefied natural gas (LNG) and oil, along with the ferry terminal at Pembroke Dock, makes this area one of intense activity. This is further intensified with the leisure use. However, the vast extent of the Milford Haven Waterway helps to absorb the intensity of activity.



Milford Haven- refinery

3.34. Marine renewable energy is now being explored with pilot and experimental projects of wave and floating wind offshore to the south of Milford Haven and tidal energy in Ramsey Sound. Facilities are being built in Pembroke Dock, replacing old timber docks, to accommodate expansion.

ART AND SEASCAPE

3.35. Pembrokeshire's spectacular seascapes have attracted artists in numbers from the 18th century to the present day. Peter Watson, of *Horizon* magazine, a patron of young artists, claimed that west Wales represented the closest approach in Britain to the strong light and elemental landscape of the Mediterranean.

- 3.36. Richard Wilson painted Pembroke town and walls c. 1765-6, and Julius Caesar Ibbetson's *The Guide to the Stackpole Scenery pointing to Stack Rock Pembrokeshire* (oil on canvas and water-colour and black ink, 1793) is one of the most explicitly topographical coastal views of the area from this period.
- 3.37. Augustus John is the artist best known for his Pembrokeshire associations, though he spent most of his life away from Wales. The area's seascapes have inspired many contemporary artists, though an increasing focus on abstraction has meant that fewer are works of recognisable places. John Piper, however, who painted *St Bride's Bay*, moved away from non-figurative art from when he first started to visit Wales in 1937, and came to be recognised as a landscape painter in the tradition of Turner. Rosemary ('Ray') Howard-Jones also worked in a more representational style, reflecting her background in archaeological reconstruction drawing and as a war artist. *Sunset on Skomer* and *Thunderstorm over Skomer* reflect her visits to the island between 1949 and 1951. Graham Sutherland painted St David's Head and the surrounding area many times.
- 3.38. More recent artists include Brendan Burns who was the first Artist in Residence at Oriel y Parc, Landscape Gallery St Davids, 2009-10, a partnership between the National Park & National Museum Wales. His exhibition 'Influere' was held here. His paintings explore the qualities of the sea and coast with works with evocative names such as 'Seabelt shimmer', 'Squally squint', 'Shoreline ramble' and the 'Tidal' series. The late John Knapp-Fisher established an art gallery in the area and has painted widely. Subjects include Tenby, Porthgain and Solva, as well as pictures such as 'Beach and Sky' which simply shows the juxtaposition of these two elements separated by the sea.
- 3.39 Many coastal locations in Pembrokeshire have been used as film settings, including the filming of Dylan Thomas' 'Under Milk Wood' in Fishguard in 1971. In more recent years, Freshwater West has seen the filming of 'Harry Potter and the Deathly Hallows' and 'Robin Hood'.

Aesthetic and Perceptual Influences

- 3.40. The overriding experience of the Pembrokeshire seascape is open and wild sea meeting diverse and sometimes remote indented coasts of rocky cliffs and shores interspersed with sweeping sandy bays and dunes and intimate little coves and harbours.
- 3.41. The scale of the coast varies significantly between the broad sweep of Carmarthen Bay to the narrow, enclosed harbours of Solva, Abercastle and Stackpole Quay. There are intermediate bays such as Newport Bay and Whitesands Bay with their sandy beaches, enclosed by the strong, distinctive headlands of Dinas Head and St David's Head respectively. These rocky landforms frame views out to open sea to the west. To the south, in good visibility, views are possible to Lundy Island.
- 3.42. The diversity of the seascape is apparent at all scales. At a broad scale adjacent areas can differ significantly. The straight open limestone cliff coast of the remote Castlemartin peninsula contrasts with the indented sandstone and igneous coast of the Dale and Marloes peninsulas with their beaches, and again with the natural industrialised harbour of Milford Haven to the north. At a smaller scale the intricate indented coast between Strumble Head and St David's Head changes quickly between rocky cliffs and shores of varying character with small inaccessible coves and a smattering of coastal settlements and harbours such as Abereiddy and Porthgain. At a detailed level, the variation of habitats from the littoral rocks, to cliffs and cliff top heathland mosaics contrasting with the hinterland of pasture with

Pembrokeshire hedgebanks and steep wooded valleys give a variety of form and texture which delights all on the coast path.



Stackpole Head- panoramic views

- 3.43. The sea also varies in character, through variations in weather including wind direction, fetch, tides and depth of water and nature of the seabed. Strong currents meet around headlands such as St Ann's Head and flow through constricted areas such as Jack Sound, between Skomer and the Marloes peninsula, and Ramsey Sound. This disturbed water can be dramatic, such as the standing wave at The Bitches, and is apparent to those on the coast as well as those in boats. Larger waves and 'seahorses' are apparent around the islands and islets such as the Bishops and Clerks and the Smalls as well as on the exposed rocky coasts and west facing beaches such as the dramatic and dangerous Freshwater Bay West with its undertow and the rather safer Whitesands Bay and Newgale Sands, popular with surfers and body boarders. These contrast with the sheltered south and east facing beaches with their relatively calm waters such as at Tenby, Lydstep and Saundersfoot.
- 3.44. A key feature of the Pembrokeshire seascape is the feeling of remoteness, wildness and tranquillity in many parts of the coast. This is particularly apparent on the cliffs on the north coast between Cemaes Head and Newport Bay, the coast south of Strumble Head to around St David's Head, and the Castlemartin peninsula. These locations are mostly accessible via the coast path along the cliff tops although the rocky shores are often inaccessible. Castlemartin has restricted access due to MOD use which also disturbs tranquillity while in use. The islands can be more remote and some are inaccessible, such as Skokholm. Only small numbers access Skomer and Ramsey Island and these feel particularly wild with their low intensity management and semi-natural vegetation. Caldey Island has enforced tranquillity with the monastery and controlled visits. Of course, the most remote areas are offshore where a few in boats, cruising, fishing or diving can feel like they are getting away from it all.
- 3.45. The busiest parts of the coast include Tenby, Saundersfoot and other coastal settlements to the south east and also honeypots such as Whitesands Bay and Broadhaven. These are the parts of the coast which children experience (and probably like) most. The beach is the focus of activity and visitors, young and old, can experience the sand between their toes, the coolness and movement of the water, the sound of waves crashing on the beach, the smell of the salt air and the wind in their hair. These are different experiences from our normal day to day lives and can give a feeling of refreshment and renewal. Evocative holiday experiences can stay with people for the rest of their lives and draw them back to the coast and the sea again and again to 'recharge their batteries'.
- 3.46. The Pembrokeshire coast and islands have a strong sense of place contributed to by both the natural splendour of the indented rocky coastline and islands and the
mark of human activity such as peninsula forts e.g. Castell Coch, religious sites e.g. St Govan's Chapel and deserted workings e.g. Porthgain or Abereiddy.



St Govan's Chapel

4. Cultural benefits and services

- 4.1. Cultural benefits and services cover the non-material benefits that people obtain from ecosystems such as spiritual and religious enrichment, cultural heritage, recreation and tourism and aesthetic experience. The UK National Ecosystem Assessment, 2011, defines 'Ecosystem cultural services' as ' the environmental settings that give rise to the cultural goods and benefits that people obtain from ecosystems'. These involve 'a range of complex cultural practices, such as the development of institutions, the application of capital, and human processes involving memories, motions, the senses, and aesthetic appreciation.' The background to this is discussed further in **Appendix C.**
- 4.2. The Pembrokeshire seascape clearly offers these services in a number of ways. These are set out in **Table 1** as a framework for the brief descriptions for each seascape character area.

Generic service	Typical components in Pembrokeshire seascape
category	
Leisure / recreation	 walking the Coast Path, rambling, hill walking sailing, canoeing, rowing, paddleboarding, windsurfing, surfing, kite surfing swimming, diving, snorkelling, rock-pooling, beach activities angling, shore-based and from boats wildlife boat trips climbing, coasteering horse riding/beach riding land yachting power boating, waterskiing, jet-skiing parks and play areas
Spiritual / religious	 connection with sense of remoteness, tranquillity and timelessness/time depth connectedness with nature places of worship, monastery and retreat centres places with particular sense of identity for local communities
Artistic / cultural heritage	 archaeological features such as promontory forts historic sites and buildings environmental education activity festivals and events food and farming traditions craft traditions museums, galleries, and visitor facilities to interpret the environment and cultural heritage
Natural heritage	 interactions with or observation of wildlife (for example bird watching, seal watching, dolphin and whale watching) interaction with the natural coastal and marine environment as a leisure activity diversity of views, sense of spaciousness, and appreciation of aesthetic qualities

 Table 1 Ecosystem cultural services provided by the Pembrokeshire seascape

5. Forces for change

- 5.1. Forces for change have been considered in respect of how they affect the special qualities of the National Park. They can be divided into natural processes and climate change, marine/water-based activity, coastal development and marine related activity and land management.
- 5.2. Natural processes include erosion of coasts, sedimentation and flooding. Though climate change is likely to have significant effects in the long term in relation to sea level rise and changing weather patterns the study focuses mainly on the existing evident and or likely effects over the next ten years. Sea defences can radically change the character of the coast from natural to one dominated by manmade structures. Shoreline Management Plans are in place for the coastline and describe how a stretch of shoreline is likely to be managed to address flooding and / or erosion. Stretches of coast are divided into 'management units' where one of four different management policies are agreed;
 - No active intervention: no planned investment in defending against flooding or erosion, whether or not an artificial defence has existed previously.
 - Hold the (existing defence) line: an aspiration to build or maintain artificial defences so that the position of the shoreline remains. Sometimes, the type or method of defence may change to achieve this result.
 - Managed realignment: allowing the shoreline to move naturally, but managing the process to direct it in certain areas. This is usually done in low-lying areas, but may occasionally apply to cliffs.
 - Advance the line: new defences are built on the seaward side.
- 5.3. The port of Milford is the UK's largest energy port and used by large tankers and other craft including ferries operating out of Pembroke Dock and Fishguard Harbour The area is very popular for tourism and water-based activity is increasing with sailing and motor leisure boating with marinas and moorings also increasing capacity. There is also an increase in wildlife and boat trips, canoes and other craft. The emergence of potentially higher protection around proposed marine conservation areas such as Skomer may have implications as to recreational use and access. One of the major tensions in
- 5.4. Pembrokeshire is the need to protect wildlife which flourish in the remote coastal waters, islands, cliffs and beaches whilst managing a variety of visitors who increasingly wish to enjoy and access these fragile areas potentially causing damage and disturbance. Offshore there is currently a lease for a demonstration wave energy scheme, early consideration of commercial floating wind energy in the Celtic Sea), landing of marine aggregates from the Bristol Channel at Pembroke Dockyard Wharf, and use for firing ranges and military training. Ramsey Sound has been explored for tidal energy. These activities can have physical effects such as pollution or disturbance of sensitive areas but can also disturb tranquillity and a sense of remoteness.
- 5.5. The coast-based infrastructure related to marine commercial activity is likely to continue to change. The Haven has seen the development of refineries, storage facilities, a power station and Liquefied Natural Gas along Milford Haven. Changing requirements for energy will require new facilities to research, assemble, test and service renewable energy schemes such as those being built in Pembroke Dock. Hydrogen technology is also currently being explored in the Haven. The chimneys and structures along the Haven are already widely visible in

the Pembrokeshire. Onshore infrastructure for renewable energy installations may affect coastal character.

- 5.6. The Pembrokeshire Coast Path, once a stand-alone attraction, is now part of the Wales Coast Path which itself is very popular. This will potentially increase usage with attendant damage to the path structure through compaction and erosion. Coasteering and climbing plus beach based activities are putting pressure on the coastal resource with associated infrastructure, disturbance, erosion, compaction and litter. Pressure is also increasing on the access points to the water for recreation.
- 5.7. Whilst the study concentrates on marine-related issues, the view along the coast, and its character, are partly defined by the management of landcover such as farmland. Changes to field boundaries with the removal of hedgebanks / replacement with fences and changes to intensity of management either with abandonment of fields or rough grazing or intensification from unimproved pasture to arable can have significant effects. The attractiveness of the area also leads to pressure for housing and tourist development and associated commercial enterprises. Onshore wind energy can also affect coastal character and may cause cumulative effects with port and oil / gas infrastructure.
- 5.8. The relevant forces for change are set out with further background explanation in the table in **Appendix D**.

6. Sensitivity of seascape

- 6.1. The value of the Pembrokeshire seascape was considered to be high in most areas, reflecting the special qualities for which the National Park was designated. The potential susceptibility of the seascape to change was explored and key characteristics and features which may inform consideration of value and susceptibility include:
 - Intricate, complex, rugged, indented natural coast with dramatic headlands and islands e.g. St David's Head, Skomer, Ramsey Island, Strumble Head, Stackpole Head.
 - Important focal points along the coast and out to sea including islands, islets, headlands and distinctive sweeping beaches such as Whitesands Bay, Freshwater West and Newport Bay.
 - Unspoilt hills and backdrops which contribute to seascape character e.g. Carn Llidi and Mynydd Carningli.
 - Views from key places such as headlands, coastal hills and the Coast Path.
 - Open views to an unspoilt sea horizon reinforcing a sense of escape and space to breathe.
 - Open sea and offshore islands and islets with limited, if any, signs of man.
 - Small scale, enclosed, views to horizon framed by landform in the many coves and beaches such as Barafundle Bay, Broadhaven, Abereiddi and Newport Bay and also at St Govan's Chapel. Development out to sea within these enclosed views could be particularly disruptive.
 - Tranquil seascapes where there is little disturbance and signs of development and dark skies.
 - Remote undeveloped seascapes with wild, highly natural, elemental character such as the islands, north coast south west of Strumble Head and the Castlemartin peninsula.
 - Secluded and tranquil, well treed character of the Daugleddau estuary with its historic quays.
 - Small scale, traditional historic coastal settlements such as Solva, Abercastle, Porthgain and Newport, and harbours such as Porthclais, Lower Town, Fishguard and Stackpole Quay.
 - Other coastal conservation areas with dramatic settlement features such as the skyline and harbour of Georgian Tenby.
 - Presence of coastal and island historic features such as peninsula forts, castles, chapels e.g. St Govan, monasteries i.e. Caldey Island, other buildings and structures and other heritage features which have a strong relationship with the coast and sea visually, physically and culturally.
 - Presence of marine, intertidal and coastal edge habitats with high biodiversity particularly the Skomer Marine Conservation Zone, National Nature Reserves such as Ramsey Island, Special Areas of Conservation covering the majority of the coast and out to sea around the Smalls, Carmarthen Bay SPA and coastal Sites of Special Scientific Interest.
 - The connections of the area with St David and Giraldus Cambrensis and other historical figures.

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6.2. These characteristics and features are set out in more detail for each Seascape Character Area informed by the factors influencing susceptibility and value are summarised in **Appendix E**. This also sets out those factors which tend to detract from /susceptibility and value in some areas.

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8. List of Seascape Character Areas

(see separate document)

The 44 seascape character areas are described in detail in separate documents. The description is divided into physical, cultural and aesthetic and perceptual influences with ecosystem cultural services, key forces for change and sensitivities defined. The seascape character areas are listed as follows:

SCA1	Teifi Estuary
SCA2	Cardigan Island and Cemaes Head
SCA3	Pen y Afr to Pen y Bal
SCA4	Newport Bay
SCA5	Dinas Island
SCA6	Fishguard Bay west Fishguard, and Goodwick including Fishguard Harbour and the
SCA7	Quayside at Lower Town.
SCA8	North open sea
SCA9	Newport and Fishguard outer sand bar
SCA10	Crincoed Point and Strumble Head
SCA11	Strumble Head to Penbwchdy
SCA12	Strumble Head deep water
SCA13	Penbwchdy to Penllechwen
SCA14	Western sand and gravel bars
SCA15	St Davids Head
SCA16	Whitesands Bay
SCA17	Ramsey Sound
SCA18	Ramsey Island coastal waters
SCA19	Bishops and Clerks
SCA20	St Brides Bay coastal waters north
SCA21	St Brides Bay coastal waters east
SCA22	St Brides Bay coastal waters south- Borough Head
SCA23	St Brides Bay south coastal waters - The Nab Head
SCA24	St Brides Bay
SCA25	Skomer Island and Marloes Peninsula
SCA26	Skokholm and Gateholm coastal waters
SCA27	Grassholm and the Smalls
SCA28	West open sea
SCA29	Southern inshore waters
SCA30	Southern offshore waters
SCA31	Outer Milford Haven
SCA32	Inner Milford Haven
SCA33	Daugleddau
SCA34	Freshwater West
SCA35	Castlemartin coastal waters
SCA36	Stackpole coastal waters
SCA37	Freshwater East and Manorbier
SCA38	Lydstep Haven coastal waters
SCA39	Tenby and Caldey Island

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- SCA40 Carmarthen Bay west
- SCA41 Carmarthen Bay north Pembrey
- SCA42 Carmarthen Bay
- SCA43 Bristol Channel offshore
- SCA44 Western offshore very deep water

Pembrokeshire Coast National Park Authority

Tree and Woodland Guidance Pembrokeshire Coast National Park

Draft Supplementary Planning Guidance Consultation: October 2022 Adoption:

Pembrokeshire Coast National Park Authority



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Tree and Woodland Siting and Design Guidance

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Chapter 1 Introduction

This chapter provides the context and overview of the study

Context

1.1 Tree and woodland planting play a key role in mitigating biodiversity loss and the effect of a changing climate. Woodland can contribute to a number of other important ecosystems services including climate regulation; regulating water quality; regulating soil quality and erosion; pollination; pest regulation; genetic diversity; sense of place/inspiration; sense of history; tranquility; and recreation. As a result, woodland expansion is a UK and Welsh Government priority and new measures to increase tree planting form a central pillar in government efforts to reach net zero emissions by 2050.

1.2 In a written statement on Trees and Timber in July 2021¹, the Welsh Government set a target of increasing woodland cover in Wales by 43,000 hectares by 2030, and 180,000 hectares by 2050, to help Wales meet its carbon emission reduction targets as part of the 'balanced pathway' set out of the UK Climate Change Commission. This is the equivalent of 5,000 hectares per year. In 2020, just 290 hectares of woodland was planted in Wales.

1.3 In meeting such targets, the Welsh Government has committed £17m to tree planting over the next two years through the Glastir Woodland Creation scheme and is committed to providing significant future funding. Further detail will be set out in a new *Woodland for Wales Action Plan* in 2022 (updating the previous 2018 edition).

1.4 New tree and woodland planting can bring a range of benefits for both nature and society and Pembrokeshire Coast National Park Authority (PCNPA) supports tree planting and woodland regeneration. However, woodland creation could have a significant effect on the recognised qualities of this valued landscape, its landscape diversity and rich ecological

¹ Written Statement: Trees and Timber (13 July 2021)

and historic environment. New tree and woodland planting should take account of the special qualities and distinctive features of the receiving landscape – with a focus on '*the right tree in the right place*'. This is not least in recognition of the fact that other natural habitats that may be characteristic in a landscape are equally as important (or in some cases, more so) for ecosystem service delivery, including climate regulation. The Guide therefore aims to direct woodland to the most appropriate locations, while supporting opportunities for the positive management of non-woodland habitats.

Overview

1.5 In August 2021, PCNPA commissioned LUC to produce this Tree and Woodland Guidance ('the Guide') for the National Park. The Guide aims to:

- assist those proposing to plant trees or woodland within the PCNP; and
- inform the NPA's response to planting proposals on which it is consulted.

1.6 The Guide provides an evidence base to help respond to the environmental and climate emergency as set out in the National Park Authority's ten-year plan *Responding to the Climate Change Emergency* (2020-2030) by providing advice on the types of landscapes where sensitivities may allow new trees or woodland planting, while ensuring that considerations of 'right tree, right place' are taken into account. Strategic opportunities and guidance for woodland planting are also included.

1.7 The Guide may be viewed as an extension to the existing management guidance in the Pembrokeshire Coast National Park Landscape Character Supplementary Planning Guidance² and Seascape Character Supplementary Planning Guidance³. The Landscape Character Area (LCA) classification forms the spatial framework for the Guide, as set out in **Figure 1.1**.

1.8 The method for this project is described in **Chapter 2**. **Chapter 3** describes the existing woodland character of the National Park with general guidance for woodland creation, while **Chapter 4** reports on the results of the landscape sensitivity assessment. **Chapter 5** includes guidance and illustrations of opportunities for future tree and woodland creation for typical landscapes found within the National Park.

1.9 Individual assessment profiles and guidance for each LCA are presented in **Appendix A**.

² Pembrokeshire Coast National Park Landscape Character Supplementary Planning Guidance ³ <u>Pembrokeshire Coast National Park Seascape Character</u> <u>Supplementary Planning Guidance</u> Figure 1.1: Pembrokeshire Coast National Park Landscape Character Areas – see separate document

Chapter 2 Methodology and scope

This chapter sets out the methodology and scope of the Guide

Policy context

Planning Policy Wales

2.1 Planning Policy Wales⁴ (last updated in February 2021) recognises the importance of trees and requires that local planning authorities such as PCNPA produce plans to enhance the natural and local environment.

2.2 Para 6.4.24 states that 'trees, woodlands, copses and hedgerows are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make a valuable wider contribution to landscape character, sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade and shelter, a sustainable energy source and building materials. The particular role, siting and design requirements of urban trees in providing health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking'.

2.3 *Para 6.4.25* states that 'planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function. Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG'.

2.4 *Para 6.4.27* states that 'the protection and planting of trees and hedgerows should be delivered, where appropriate, through locally specific strategies and policies'.

2.5 *Woodlands for Wales* (2018) sets out the case for woodland expansion and for good woodland management.

⁴ <u>https://gov.wales/planning-policy-wales</u>

This includes the kind of woodland that is needed to maintain and enhance the resilience of Wales' ecosystems and increased canopy cover.

2.6 Creating both new native and new mixed woodlands that can deliver multiple benefits, and to use planting and natural processes to do so, is a challenge which applies equally to designated landscapes such as the National Park as to the rest of Wales. *Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks* was issued by the Welsh Government in July 2018 and outlines key priority areas for national park authorities in Wales. These include '*increasing woodland cover while respecting the special qualities of these landscapes*'.

Pembrokeshire Coast National Park Local Development Plan 2 (September 2020)

2.7 Policies set out in the National Park Local Development Plan form an important consideration, and the Guide seeks to assure that positive outcomes in relation to these policies are met whilst ensuring landscape character is retained and enhanced. This includes:

- Policy 8 Special Qualities: the special qualities of the Pembrokeshire Coast National Park will be conserved and enhanced.
 - The priorities will ensure that:

c) The pattern and diversity of the landscape is protected and wherever possible enhanced

Policy 14 Conservation and enhancement of the Pembrokeshire Coast National Park.

'Development will not be permitted where this would have an unacceptable adverse effect on the qualities and special landscape and seascape character of the Pembrokeshire Coast National Park including locally distinctive characteristics by:'

- a) causing visual intrusion; and/or
- b) introducing or intensifying a use which is
- incompatible with its location; and/or
- c) failing to harmonise with, or enhance the landform,

landscape and seascape character of the National Park; and/or

d) losing or failing to incorporate important traditional

features.

Pembrokeshire Coast National Park Management Plan 2020-2024

2.8 Policies set out in the National Park Management Plan 2020-2024, also form an important consideration. This includes:

- Policy L1: the conservation and enhancement of the national park's landscape and seascapes.
- Policy E1; protecting and improving biodiversity quality, extent and connectivity at scale (Policy E1).
- Policy H1: Conserve and enhance landscapes of particular historic interest, Conservation Areas, scheduled monuments, listed buildings and their settings.
- Impact during the Plan period:

d. Conserve and restore field boundaries with a particular emphasis on areas of registered historic landscapes and relevance to connectivity for biodiversity.

 Policy N1: contributing to a low carbon economy for Wales and adapting to climate change (Policy N1).

2.9 Polices in the Management Plan are underpinned by a series of intended impacts. These include:

- Conserving and restructuring semi-natural woodland, wood pasture, trees in the landscape and field boundaries.
- Creating hedgerows and new woodland strips.
- Reducing the impacts of non-native coniferous woodland on biodiversity.
- Supporting soil conservation, management of peat soils, wetland protection, conservation and expansion of seminatural habitats and protecting the best and most versatile agricultural land from development.

Woodland Funding and Delivery Mechanisms

2.10 A range of funding and delivery mechanisms for tree and woodland planning and creation are available and are likely to become available over the next few years. Up to date information on support available for new woodland creation can be found through Natural Resources Wales ⁵

⁵ Support available for new woodland creation

Scope of the Guide

2.11 It is well known that tree and woodland planting can bring a range of benefits for both nature and society. Additionally, the appropriate, sustainable management and regeneration of existing woodlands is as important as establishing new woodlands, as well as being a lower-cost way of slowing climate change and enhancing biodiversity.

2.12 However, while most new tree cover is a positive thing, planting new woodland in the 'wrong' locations could result in unintended negative consequences on the special landscape qualities of the National Park and its rich natural and cultural heritage. For example, poorly designed monoculture planting can change the diversity and special qualities of the landscape, including open landscapes and extensive views from the uplands. Establishing woodlands on areas of species-rich grassland, heathlands or peatlands, can reduce biodiversity or even release more carbon than will be stored by the planted trees. Trees can also damage buried archaeology, historic sites and their settings.

2.13 Therefore, taking a holistic and well-planned approach which builds on the existing landscape framework (such as strengthening hedgerow networks and links to existing woodland, as well as new planting) is what the guidance produced by this study aims to achieve

Conserving non-woodland habitats and species

2.14 In addition to its woodland, the National Park also contains a number of important non-woodland habitats that need to be considered in planning for woodland expansion and management. It is important that measures to expand the area of woodland within the National Park do not result in damage or loss of these important habitats. The design and location of schemes should therefore have regard to such sites to ensure that adverse effected on protected and priority species and habitats are avoided. It is also important to ensure that site-specific assessment of woodland creation proposals give appropriate consideration to significant, but undesignated habitats, such as the transition habitats.

Tackling non-native species

2.15 Invasive non-native species of plants and animals pose a significant and growing threat to biodiversity, and the National Park is no exception. Riparian habitats are particularly susceptible to invasive plants, and seeds and other materials can be quickly and widely spread by the action of the water. As these areas are often relatively undisturbed, populations of invasive species, such as Himalayan balsam, can become well established. Efforts to identity, manage and

eradicate invasive non-native species, should form part of any tree creation scheme.

Protecting cultural heritage

2.16 Trees and woodlands are an integral part of the historic environment – contributing to the setting of a range of assets, adding to the character of historic towns and villages, and preserving the patterns of past activity. However, while trees and woodlands are an important component of many of the National Park's historic landscapes, there is potential for new woodland, whether planted or naturally regenerated, to affect sensitive parts of the historic environment. Archaeological sites, both above and below the ground, are often vulnerable to damage from tree roots. Archaeological landscapes and inter-visibility of monuments can be affected by inappropriately located planting.

2.17 However, careful siting and well-planned woodlands can make a significant positive contribution to the setting of sites, reinforcing landscape character and restoring degraded landscape structure. Similarly, positive management of the area's extensive suite of designed landscapes is necessary to secure the contribution these assets make to local character, distinctiveness and a sense of time-depth in the landscape. Many of the trees in these historic landscapes are mature or over-mature and in some cases they are suffering due to a lack of appropriate management. The changing climate could compound these issues as a result of storm damage, stress and disease. It is important to ensure that site specific woodland creation proposals give appropriate consideration to the cultural heritage of a site.

Important note:

The assessment should not be interpreted as a definitive statement on the suitability of certain locations for planting.

The Guide can only play an advisory role in relation to environmental protection and the weighing of potential benefits against likely impacts. Detailed site-specific assessment of proposals for woodland creation and management will always be required to provide this information and contribute to wellinformed decisions. Proposals for woodland creation and management plan should seek opportunities to protect, manage and create nonwoodland habitats and networks and protect any known sites of archaeological and historic importance. The UK Forestry Standard (UKFS) (2017) and the Pembrokeshire Coast Landscape

2.18 The suite of Forestry Commission guidance, in particular the mandatory UK Forestry Standard (UKFS) should ensure best practice in woodland design and management of existing woodland.

2.19 Proposals for all new woodlands in the National Park need to be designed to high standards and should be underpinned by UKFS General Forestry Practice Requirements No. 17: 'New forests and woodlands should be located and designed to maintain or enhance the visual, cultural and ecological value and character of the landscape.'

2.20 All woodland planting schemes greater than 2 hectares in National Parks require screening for Environmental Impact Assessment and a woodland creation plan must be prepared which follows the guidelines set out in line with the UKFS 2017.

2.21 Section 6.4 of the UKFS (pages 96 - 127)⁶ relates to forests and landscape. It identifies four landscape context factors and seven Forest Design Principles which should be used in the siting and design of new planting. Although the production of a Forest Management Plan is only compulsory for larger schemes, the principles are relevant for all schemes, and will help establishing new woodland in the right place.

Spatial framework for the assessment

2.22 The Landscape Character SPD provides detailed descriptions of the landscapes o the National Park and what makes them unique. It does this by identifying Landscape Character Areas. For each one, management guidance is provided on how landscape character can be enhancement through tree planting and management. This Guide sets out further detail on tree and woodland expansion using the National Park's 28 Landscape Character Areas⁷ as a spatial framework as shown in **Figure 1.1** above It aims to shows how tree cover can be increased in a way that recognises the diversity of landscapes found in the National Park, enhancing the character of the landscape while retaining its distinctive identity.

2.23 The main focus of this Guide in on the sensitivity of the landscape of the National Park to woodland creation and management. Although a consideration of natural and cultural heritage is included, individual proposals for woodland creation should undertake more detailed consideration of the potential sensitivities of both. The 'urban' LCAs (LCA 2:

Tenby, LCA 17: St Davids and LCA 23: Newport) have been excluded due to the more limited opportunities for woodland planting in these areas, however generic guidance for tree and woodland planting in this document can be used to guide woodland creation in these locations (see **Table 3.2**.).

Type and scale of woodland planting considered

Scale of woodland planting

2.24 The Guide judges the suitability of different scales and types of woodland planting, based on bandings that reflect woodlands that are currently characteristic of the local landscape and those most likely to be accommodated in the landscapes of the National Park.

2.25 The scale of woodland considered for this guide consists predominantly of small scale planting (less than 30ha). Larger scale woodland (over 30ha) is also considered; however, this scale of woodland is unusual in the National Park and largely concentrated in the upland areas and along the wider estuaries.

Woodland planting types

Broadleaved woodlands

2.26 The woodland types considered for this guide mostly consist of native broadleaf species (although some non-native or coniferous species may form a component of larger woodlands to provide a mix more resilient to climate change and tree disease). The most common woodland types in the National Park are lowland oak woodland, where the dominant tree is sessile oak (found predominantly in the river valleys of the Gwaun and Nevern and in the upper Daugleddau Estuary). In the south, pockets of mixed ash woodland survive although these are increasingly vulnerable to *Chalara fraxinea* (ash dieback).

2.27 Historically orchards were found across Pembrokeshire and were once a valuable local food source. Although some traditional orchards remain, many have been lost or are derelict. Wood pasture (grazed woodland) is often associated with historic estates but is relatively scarce. The conservation of existing orchards and wood pasture and the creation of new ones offer the opportunity to graze animals in more treed landscape and has potential to integrate tree planting within the agricultural landscapes of the National Park, contributing to the wider woodland network.

⁶ UK Forestry Standard (UKFS) 2017

⁷ Landscape Character SPD (prepared by John Campion Associates Ltd)

2.28 The choice of species for new woodland in the National Park should be determined in consultation with the National Park team. Advice on appropriate species can be found in the <u>Guidance on Selection of Trees and Shrubs in</u>

<u>Pembrokeshire</u>⁸. Location specific species selection should also take into account current local guidance in terms of resilience and adaption to climate change.

2.29 Broadleaved trees have distinct seasonal colour and textural qualities, as well variations in tone. Planting densities for broadleaved woodlands also tend to be less than those of coniferous woodland, and this together with seasonal change, are likely to result in a lower impact on landscape character than coniferous, or mixed (broadleaf and coniferous) woodland.

Mixed and coniferous plantations

2.30 Extensive plantations made up of non-native conifers were established in the National Park in the middle of the 20th century. These were laid out in geometric shapes that followed ownership boundaries, with limited species and age diversity. There was little consideration of the ecological value of the existing habitats or the impact on landscape character at that time. These plantations, or areas that have reached maturity and been clear felled, still dominate the upland landscapes of the Preseli Hills (LCA 27) and Carningli Hills (LCAs 22). Just under a third of the woodland in the wider estuaries at Daugleddau (LCA 28) consist of mixed or coniferous woodlands, with most plantations on ancient woodland sites (PAWs). There are also some smaller plantation woodlands along stream valleys in Saundersfoot Settled Coast (LCA1) and within Cwm Gwaun/Afon Nyfer (LCA 26).

2.31 Any new or replacement large-scale commercial plantations, within the National Park may provide some elements of recreational value, flood risk management and carbon capture (although in the long term, 100+ years, oaks store as much as conifers). However, rapid growing plantations are likely to result in significant (negative) change to the character of all landscapes within the National Park, do not have the biodiversity benefits of native broadleaved woodland (as trees as predominantly non-native), have a particularly negative impact on the ecology of ancient woodland and can contribute to acidification of watercourses.

2.32 As the existing plantations within the National Park reach maturity, the opportunity exists to gradually restructure the

visual and species diversity of these forests in a way that reduces landscape impact and offers more diversity in terms of wildlife. Options include removal and replacement with heathland habitats or planting broadleaved woodland.

2.33 The short-term aim should be to modify the overall structure of existing conifers plantations to contain a higher broadleaf content (mixed woodlands), with their eventual replacement with predominantly native broadleaved woodlands. Native woodland conversion should be prioritised for all Planted Ancient Woodland Sites (PAWs), as they often retain ancient woodland remnants and consequently produce more diverse native woodland when restored.

2.34 On the large upland tracts of the Mynydd Preseli and Mynydd Carningli the alternative is to clear-fell existing plantations over the short or medium term and revert to a mosaic of broadleaved woodland and the former open heathland or grassland habitats of the hills with their soft muted colours and open character.

2.35 For these reasons, consideration of the sensitivity of the landscape to mixed woodlands in this Guide is confined to the upland landscapes of the National Park (LCA 22 and LCA 27), the wider estuaries at Daugleddau (LCA 28) and stream valleys around Saundersfoot (LCA 1). All other landscapes in the National Park are considered to have a high sensitivity to any scale of mixed woodland.

2.36 If proposals for new or replacement commercial plantations come forward within the National Park, the key attributes of individual schemes will be assessed on a site-by-site basis through the planning application process. Any scheme should confirm to the UK Forestry Standard. In particular;

- new woodland should be located and designed to maintain or enhance the visual, cultural, and ecological value and character of the landscape;
- diverse structure of habitat, species and age of trees should be established or maintained within the woodland, with mandatory broadleaf and open ground components to maximise biodiversity benefit.

2.37 Woodland types and sizes assessed in this guide are set out in **Table 2.1** below.

⁸ Pembrokeshire Nature Partnership, Guidance on Selection of Trees and Shrubs in Pembrokeshire (2020)

Chapter 2 Methodology and scope

Tree and Woodland Siting and Design Guidance June 2022

Table 2.1: Woodland types and descriptions

Woodland types	Area	Description	
Small-scale woodlands	≤5ha	Small predominantly native woodlands, less than or equal to 5ha in area, including copses, farm woodlands, shelter belts or riparian woodlands. Traditional orchards and wood pasture are also considered under this woodland type.	
		Small scale mixed woodlands, less than or equal to 5ha in area. Woodlands comprising both broadleaf and coniferous species (where the proportion of broadleaves is more than 50%).	
Small-medium scale	>5- 15ha	Small-medium scale predominantly native woodlands between 5 and 15ha in area including copses, shelterbelt woods or riparian woodlands.	
		Small-medium scale mixed woodlands (predominantly broadleaf), between 5 and 15ha in area. Woodlands comprising both broadleaf and coniferous species (where the proportion of broadleaves is more than 50%).	
Medium-scale woodlands	>15-30ha	Medium scale predominantly native woodlands, between 15 and 30ha in area.	
		Medium scale mixed woodlands (predominantly broadleaf), between 15 and 30ha in area. Woodlands comprising both broadleaf and coniferous species (where the proportion of broadleaves is more than 50%).	
Large-scale woodlands	>30ha	Large sized predominantly native woodlands over 30ha in area.	
		Large sized mixed woodlands (predominantly broadleaf) over 30ha in area. Woodlands, comprising both broadleaf and coniferous species (where the proportion of broadleaves is more than 50%).	

Evaluating landscape sensitivity

2.38 This study is based on an understanding of landscape sensitivity, using an established methodology consistent with national guidance.

2.39 The method used to evaluate landscape sensitivity to woodland planting has been adapted from the approach used by LUC for similar studies and draws on advice contained in An Approach to Landscape Sensitivity Assessment (Natural England, 2019) as well as the draft guidance published by Natural Resources Wales: 'Landscape Sensitivity and Capacity Statement (2018)⁹. Although specifically applied to onshore wind and solar PV development types, this emerging Welsh guidance may be adapted for other forms of landscape change. Landscape Sensitivity and Capacity Assessment has become an important way of using an understanding of

landscape character to inform the management of landscape change.

2.40 The development of the assessment approach also takes account of guidance in The UK Forestry Standard (2017) – Section 6.4 (Forests and Landscape) and Design Techniques for Forest Management Planning.

Assessment criteria

2.41 The selection of landscape sensitivity indicators ('criteria') for this study is informed by the attributes of landscape that could be affected by woodland planting. It considers the 'landscape', 'visual' and 'perceptual' aspects of sensitivity, including:

- Landform and scale;
- Field and landcover pattern;

⁹ Natural Resources Wales. 2018 Landscape Sensitivity and Capacity in relation to on-shore wind and solar photo-voltaic developments: An assessment approach for Wales

- Existing woodland pattern and diversity;
- Historic landscape character;
- Visual character (including skylines); and
- Perceptual and scenic qualities.

2.42 Tables 2.3 at the end of this chapter provides guidance and examples of features/attributes of higher and lower sensitivity to woodland planting in the National Park. These criteria were used to determine the key sensitivities to woodland planting for each LCA and inform judgements on overall levels of sensitivity.

2.43 The initial stage of the assessment involved a thorough desk-based study, drawing on sources of spatial and descriptive information regarding the landscape (see Appendix B). This was supplemented by field survey work undertaken by a team of landscape professionals to verify the findings.

Making overall judgements on landscape sensitivity

2.44 Key attributes or features of the landscape that could be affected by woodland creation were identified and are listed under 'key sensitivities' for each LCA. An overview of the sensitivity of each LCA is provided, and any area or feature, attribute or locations within the LCA judged to be of more or less sensitive (due to local variations in landscape sensitivity), is highlighted.

2.45 This is translated into overall scores of 'landscape sensitivity' (see **Table 2.2**) for the different bandings of tree and woodland planting. The results for each LCA are shown in the individual assessment profiles.

Table 2.2: The five-point scale of 'landscape sensitivity'

Overall Sensitivity rating	Definition	
Low	The key characteristics and qualities of the landscape are robust and can withstand change from the introduction of woodland. The landscape is likely to have high potential to accommodate woodland creation without a significant change in character. Woodland could relate well to the landscape although care is still needed when siting and designing woodland schemes.	
Low- Moderate	Few of the key characteristics and qualities of the landscape are sensitive to change from the introduction of woodland. The landscape has some potential to accommodate woodland creation with limited change in character. Care is still needed when	

	siting and designing woodland schemes to avoid adversely affecting landscape character.	
Moderate	Some of the key characteristics and qualities of the landscape are sensitive to change. Although the landscape may have some potential to accommodate woodland creation in defined locations, it is likely to cause a degree of change in character. Care would be needed in siting and design.	
Moderate- High	Key characteristics and qualities of the landscape are sensitive to change from woodland creation. There may be limited locations where new woodland planting can be accommodated without significantly changing landscape character. Great care would be needed in siting and design.	
High	Key characteristics and qualities of the landscape are highly sensitive to change. Woodland creation is likely to result in a significant change in character.	

2.46 The five defined levels of 'landscape sensitivity' form stages on a continuum, rather than clearly separated categories and an element of professional judgement is required.

2.47 The assessment of a landscape's sensitivity is the result of a complex interplay of often unequally weighted variables (or 'criteria'). Professional judgement is made on overall landscape sensitivity, taking all criteria into account in the context of their importance to the landscape character and quality of the individual LCA.

2.48 This Guide focuses on the potential impact of tree and woodland planting on landscape character. It also identifies where woodland planting will provide opportunities to add value in the delivery of other ecosystem services, such as the potential to enhance flood management and water quality, the value of woodland planting to biodiversity and the regulation of soil erosion.

Presentation of results

2.49 Guidance on the factors that contribute to the appropriate design of woodland and tree planting in the National Park are set out in **Chapter 3**, with the overall sensitivity of the individual LCAs and guidance on woodland planting opportunities set out in **Chapter 4**.

2.50 The full landscape sensitivity assessments for each of the LCAs are presented in separate assessment profiles (included in **Appendix A**). These are structured as follows:

Context maps showing the location of the LCA, existing woodland cover and historic and natural environment designations.

- A summary description of the existing tree and woodland coverage within the LCA.
- A table showing coverage of designated features and valued attributes within the LCA.
- A list of key sensitivities to woodland planting in the LCA.
- An overview of the overall landscape sensitivity of the LCA to new tree and woodland planting referencing particular features, attributes or locations which may be more or less sensitive.
- A table setting out the landscape sensitivity assessment rating for the relevant scenarios (using the five-point scale shown at **Table 2.2** and following the criteriabased approach set out at **Tables 2.3**).
- Opportunities for woodland planting within the LCA.
- Recommendations and strategic guidance for accommodating future tree and woodland planting in the landscape.

2.51 Illustrations of opportunities for future tree and woodland creation for typical landscapes found within the National Park are included in **Chapter 5.** These relate to the LCA groups in **Table 5.1** and include open coastal farmland, wooded coastal farmland, estuaries and river valleys, uplands, islands, and rocky headlands.

Table 2.3: Sensitivity criteria descriptions

Landform (and landform scale)

In mountainous or hilly areas, landform is usually the dominant influence on landscape sensitivity. A landscape with simple landforms, such as flat or gently undulating lowland landscapes, or smooth lower slopes, is less sensitive to the introduction of larger woodlands than a landscape with complex or prominent landforms and distinctive landform features (e.g. prominent ridgelines, hill summits with rocky outcrops, or intricate coastal landforms). This is because extensive woodland could mask distinctive landform features. However, smaller woodlands can be designed to relate to the landform, (e.g.native woodland extending up narrow upland stream valleys).

Generally, the scale and shape of woodland should reflect the scale of the landscape. A small-scale intimate landscape, with small-scale landscape features, is generally more sensitive to the introduction of extensive woodland planting as it can appear as a large block and dominate its surroundings. In these areas, a series of small-scale woodlands that link to existing tree cover and are irregular in shape would be more appropriate. Some of the National Park's largest scale landscapes, particularly those with existing woodlands and trees, such as the lower slopes of the Preseli Hills, generally have a greater ability to accommodate larger scale woodlands as it will have less impact on their landscape character. However, the high open moorlands on the summits of the Preseli and other areas of the National Park which are characterised by their openness, their rich ecology and archaeology have high sensitivity to woodland planting as it would alter their special qualities, including their extensive sweeping moorland character.

Low	Low-Moderate	Moderate	Moderate-High	High
A landscape with simple landforms, such as an extensive flat lowland landscape, or larger scale landforms.	A simple gently rolling landscape, likely to be a medium-large scale landform.	An undulating landscape perhaps also incised by valleys, likely to be a medium scale landform, with hidden areas in folds in the landscape as well as some visible slopes.	A landscape with distinct landform features, and/or irregular in topographic appearance (which may be large in scale), or a smaller scale landform.	A landscape with a rugged landform or dramatic landform features which are distinctive features in the surrounding landscape (which may be large in scale), or a small scale or intimate landform, with small- scale features.

Field and landcover pattern

In lowland areas, where landform is subdued, field patterns are usually the dominant influence on landscape sensitivity. Landscapes with small, irregular field patterns (often medieval in origin) are likely to be more sensitive to the introduction of large new woodland than landscapes with large, regular scale field patterns because of the risk of diluting or masking the characteristic landscape pattern. This is because extensive woodlands can detract from enclosure patterns, and this would be particularly apparent if planting takes place across a number of adjacent fields where the field pattern is small and intricate. However, small scale woodland planting can reinforce and extend the existing enclosure pattern where field pattern is the dominant influence on the landscape.

Highly naturalistic landscapes with extensive semi-natural land cover (e.g. species-rich grassland, heathland, water bodies and wetlands, particularly habitats protected by statutory or local designation) where woodlands are uncharacteristic, are likely to be more sensitive, since large scale woodland creation can result in the loss of landscape diversity. However, consideration should be given to the potential positive effects on habitat diversity of small-scale woodland creation, and the restoration of field boundaries to connect areas of new or existing woodland. Landscapes where woodlands are sparse, if their openness is a product of recent forces like agricultural intensification or development, are likely to be of lower sensitivity.

Low	Low-Moderate	Moderate	Moderate-High	High
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Chapter 2 Methodology and scope

A landscape with large-scale, regular fields of mainly modern origin. A landscape influenced by large-scale modern development / infrastructure.	A landscape which is mainly defined by large, modern fields or those sub-divided for non- traditional uses, e.g. equestrian uses. A landscape influenced by modern development/infrastructure.	A landscape with a mixture of large-scale, modern fields and some smaller, more historic enclosure. A rural landscape, perhaps with some modern development/infrastructure.	A landscape dominated by ancient, small-scale field patterns with a few isolated areas of modern enclosure, and/or a landscape with some areas of semi-natural (non-woodland) land cover.	A landscape characterised by small-scale, ancient field patterns and/ or a diverse landscape dominated by semi-natural (non- woodland) land cover.
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Existing woodland pattern and diversity

The overall pattern of existing and historic woodland coverage within the landscape (including size, overall shape, location within the landscape and type) will determine its sensitivity and the effects on the existing woodland pattern of new woodland creation and its location will need to be considered.

For example, landscapes with a strong/complex woodland pattern (e.g. narrow riparian woodland lining lowland valleys or extending up hillsides in steep stream valleys) will be sensitive to the introduction of new woodland planting because of the risk of diluting the existing landscape pattern and the difficulty of integrating new woodland in a way that respects the intrinsic landscape character (although they may not be sensitive to the woodland planting of a similar scale and type).

Landscapes with diverse native woodland (particularly ancient and/or designated woodlands) are likely to be more sensitive to the introduction of new woodland. However, in these areas small-medium scale woodland planting can reinforce and extend the existing native woodland pattern if located sensitively and reflecting the pattern of species within it. Landscapes with a history of woodland will be less sensitive to its reinstatement than those with no history of woodland

New woodland will generally be less intrusive in landscapes with geometric patterns of uniform coniferous forest or clear felled areas where woodland creation would result in a more diverse species, irregular edges and glades. If these plantations are on ancient wooldand sites, then there is an opportunity to restore them to broadleaved woodland with native ground flora which would greatly increase their biodiversity.

Low	Low-Moderate	Moderate	Moderate-High	High	
A landscape with very limited deciduous woodland due to historic clearance, and/or landscapes with extensive and uniform coniferous forestry.	An area with limited deciduous woodland and/or areas of uniform coniferous forestry.	A landscape with a mix of coniferous plantation and deciduous woodland, without a discernible woodland pattern	A landscape with a characteristic pattern of woodland coverage, much of which is native deciduous woodland	A landscape characterised by a strong characteristic pattern of existing woodland coverage and/or with extensive native deciduous woodland (some of which is ancient /designated)	
Historic landscape character					

Historic landscape character

Woodland and individual specimen trees may be landscape components of the historic environment. However, new woodland planting can detract from historic character if sited inappropriately. Where planting is likely to impact or disturb the historic character of the landscape itself, and /or the setting/character of archaeological and historic features (particularly nationally or locally designated heritage assets such as Scheduled Monuments. Listed buildings. Registered Historic Parks and Gardens and Conservation Areas) the sensitivity is likely to be higher. Woodland planting can also impact on buried and on the surface

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archaeological features if inappropriately planted (e.g. Historic Environment Record Monuments). Please refer to the Historic Landscape Character Assessment¹⁰ which examines the historic character of areas defined by the Register of Historic Interest in Wales.

Landscapes with little historic character and /or few historic features important to the character of the landscape, are likely to have lower sensitivity to new woodland.

A landscape with very little historic character a small number of historic features of importance to historic features important to the character of the landscape character area and/or where tree planting is likely to have a low-moderate impact on the historic on the hi	Low	Low-Moderate	Moderate	Moderate-High	High
and/or tree planting is likely to have a low impact on the historic environment. historic environment. historic environment. environmen	A landscape with very little historic character and/or few historic features important to the character of the landscape and/or tree planting is likely to have a low impact on the historic environment.	A landscape with little historic character a small number of historic features of importance to landscape character area and/or where tree planting is likely to have a low-moderate impact on the historic environment.	A landscape with some historic character and /or historic features of importance to landscape character, and/or where trees planting is likely to have a moderate impact on the historic environment.	A landscape with a strong historic character and/or many historic features of importance to the character of the landscape and/or where tree planting is likely to have a moderate-high impact on the historic environment.	A landscape with a very strong historic character and/or a high density of historic features of importance to the character of the landscape and/or where tree planting is likely to have a high impact on the historic environment.

Visual character (including skylines)

Landscapes which are highly visible in the wider landscape, especially in key views from settlements, footpaths including the Coast Path or promoted routes such as Active Travel are likely to have a higher level of sensitivity to new woodland planting, as new woodland can obscure important or sensitive viewpoints.

Undeveloped open skylines, or skylines with important landmark features, are likely to be more sensitive to woodland planting because new woodland may mask these skylines as features in the landscape or landmark features on skylines if not sited appropriately. Important landmark features on the skyline might include historic features or monuments as well as landforms.

Low	Low-Moderate	Moderate	Moderate-High	High				
A landscape which is not visible from footpaths or promoted routes and in which skylines are not prominent, and there are no important landmark features on the skyline.	A landscape with limited visibility from footpaths or promoted routes. A landscape in which skylines are simple, flat or gently convex and/or there are very few landmark features.	A landscape which is visible from footpaths or promoted routes and has some prominent skylines, but these are not particularly distinctive – there may be some landmark features on the skyline.	A landscape which is visible from the surrounding area, particularly footpaths or promoted routes. A landscape with important landmark features.	A landscape which is highly visible from the surrounding area, particularly footpaths or promoted routes. A landscape with prominent or distinctive open skylines, or with important landmark features on skylines.				
Perceptual and scenic qualities								
Landscapes with intendible qualities such as remotences, tranquillity or cultural associations that make a location special or unique, tend to be more sensitive to new woodland planting, since new woodlands can								

Landscapes with intangible qualities, such as remoteness, tranquillity or cultural associations that make a location special or unique, tend to be more sensitive to new woodland planting, since new woodlands can have a significant impact on the recognised qualities of a landscape and how people experience it. In areas where existing woodlands are a characteristic of the landscape, consideration will need to given to the

¹⁰ Dyfed Archaeological Trust. Historic Landscape Character Assessment

potential negative effects where increasing the woodland extent would be perceived as decreasing scenic qualities of the landscape. This particularly includes landscapes nationally recognised for their scenic quality such as the National Park.

New woodland will generally be less intrusive in landscapes that are influenced by overt human activity and disturbance, including modern settlement, industrial and commercial development, and infrastructure. These landscapes would benefit from further woodland planting which will provide a new landscape framework to help integrate/screen areas of new development.

Low	Low-Moderate	Moderate	Moderate-High	High
Landscapes with much human activity and modern development, including residential, commercial, or industrial areas.	A rural or semi-rural landscape with much human activity and dispersed modern development, such as settlement fringes.	A rural landscape with some modern development and human activity, such as intensive farmland.	A naturalistic/rural landscape with little modern human influence and development.	A naturalistic/rural landscape with no overt sign of modern human activity and development.

Chapter 3 Existing woodland character and guidance for woodland creation

Woodland coverage in Pembrokeshire Coast National Park

3.1 Wales is one of the least wooded countries in Europe, with woodland covering 15% of the land area, compared to the EU average of 38%¹¹. The character of woodland in Wales has been influenced by both historic land use and previous government policy, and now most woodland is either predominantly conifer woodland or native woodland which is mostly small and fragmented.

3.2 The total area of woodland in Wales is currently 306,000ha¹² and this has changed little in the past 20 years. Fragmentation is a significant pressure affecting native woodland condition, with nearly 22,000 woodlands identified as being smaller than 2ha. Woodland condition is also negatively impacted by grazing pressure from domesticated and wild animals, while tree health is declining due to the spread of pests, diseases and pathogens such as *Phytophthora ramorum* (affecting larch in particular), Acute Oak Decline and *Chalara fraxinea* (ash dieback). Woodland condition and extent will be increasingly affected by climate change and pressure from pests and diseases will increase in the future.

3.3 Woodland cover within the Pembrokeshire Coast National Park is lower than the Welsh average, with woodland making up just 8.75% of total land cover $(5,374 \text{ ha})^{13}$.

Conifer woodlands make up 12.4% of the woodland in the National Park. These are a mixture of stands that are undergoing transformation and restoration to diversify species and structure, or single-species even-aged stands created during the 20th century which generally have been managed by clear-felling. These are mostly concentrated in the upland areas of Mynydd Carningli (LCA 22) and Mynydd Preseli (LCA 27). Non-native plantation woodland has also been introduced along the slopes of the wider estuaries such as the Daugleddau

¹¹ <u>Natural Resources Wales / Why we need more trees - the benefits</u> of new woodland creation

¹² The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources. Technical Report. <u>www.naturalresourceswales.gov.uk</u>

¹³ Statistics on woodland cover within the National Park are taken from the National Forestry Inventory (NFI) programme which monitors woodland and trees within Great Britain. (LCA 28), often on planted ancient woodland sites (PAWS).

- Native woodland makes up 64.4% of the total woodland in the National Park. This is mostly small in scale (under 5ha) and located within the agricultural landscape or comprises more extensive woodlands along the banks of the rivers and estuaries of the National Park. Remaining woodland within the National Park is mixed, or falls into other NFI woodland types¹⁴.
- Not all native woodland is old, but a significant proportion (37% of all woodland with the National Park) has been continuously wooded for 400 years and is therefore classified as ancient (including some within PAWS).
- A significant proportion of the woodland in the National Park comprises trees growing along linear features, including hedgerows, and streams, while the rest is made up of trees found in orchards, wood pasture, parkland and urban areas. Even in areas with low woodland cover, broadleaved woodland is usually concentrated in the sheltered stream valleys which run to the coast.



Daugleddau Estuary LCA 26

3.4 There are marked differences in woodland coverage within the National Park, with heavily wooded areas concentrated in the river valleys and estuaries. This includes the river valleys of the Gwaun and Nyfer (LCA 26) where woodland cover makes up over half the current land cover (52.6%), and along the estuaries at Stackpole (LCA 5) with 34% and Daugleddau (LCA 28) with 20%. Woodland cover along the Brandy Brook (LCA 13) and the Solva Valley (LCA 14) varies between 20% and 7.6% respectively. Riverside

¹⁴ NFI Woodland Types include Broadleaved, Conifer, Mixed (mainly broadleaved), Mixed (mainly conifer), Shrub, Young trees, Low density, Ground Prep, Assumed Woodland and Felled.

woodlands are a common feature of the valley floors and slopes, with riparian woodlands following the course of the rivers and their tributaries. Parkland trees are also associated with the gardens and parks of historic houses found along the Daugleddau Estuary (LCA 28).

3.5 The upland areas of the Preseli Hills (LCA 27) and Carningli Hills (LCA 22) also have extensive woodlands concentrated on the lower slopes, including coniferous plantations in the Preseli Hills. However, this woodland makes up less than 10% of the total land cover of the LCAs due to their characteristically open and exposed higher slopes. Scattered scrub is characteristic of the steep upper slopes, at the transition to the open upland areas. Small woodlands trace the course of minor watercourses and contribute to the landscape pattern of pastoral fields and woodland on lower slopes.



Preseli Hills LCA 27

3.6 Exposed coastal areas have very low woodland coverage. Castlemartin/Merrion Ranges (LCA 6), Herbrandston Refinery Edge (LCA 11), and St David's Headland (LCA 18) as well as the inland commons at Dowrog and Tretio Common (LCA 15), have less than 2% woodland cover. Other lowland farmland areas along the coast including Angle Peninsular (LCA 7) Freshwater West/Brownslade Burrows (LCA 8), Marloes (LCA 9), St Brides Bay (LCA 12), Trefin (LCA 20) have woodland coverage of under 4%. Woodlands in these areas are generally small with occasional linear tracts of trees following minor watercourses or associated with coastal settlements and farmsteads, where tree groups or specimens provide shelter in the exposed conditions. The offshore islands of Skomer, Skokholm, and Ramsey are largely devoid of any woodland.



Strumble Head LCA 21

3.7 Woodland on the exposed headlands, including Carn Llidi (LCA 16), Strumble Head (LCA 21), Dinas Head (LCA 24), and Cemaes Head (LCA 25) is limited to small groups of trees within the farmed landscape, or concentrated in the shelter of the incised stream valleys which flow to the coast. Field boundaries are often devoid of trees, except in inland areas away from the coast.



Carn Llidi LCA 16

3.8 The more sheltered farmland in Saundersfoot Settled Coast (LCA 1) and Manorbier-Freshwater East (LCA 4) have a well-wooded character due to more mature hedgerow trees along field boundaries, and linear woodland along stream valleys or surrounding settlements. Woodland composition varies, with some broadleaved and some mixed or coniferous woodlands. Parkland estates with veteran trees are also features of Saundersfoot Settled Coast (LCA 1).

Woodland coverage in urban areas of the National Park

3.9 Urban tree cover in Pembrokeshire was estimated to be 13.5% in 2013 (below the national average of 16.3%)¹⁵. Urban woodlands represent 35% of Wales' urban canopy cover, the rest is made up of 'amenity' trees, growing along streets, car parks and other public and private spaces. Most urban trees and woodlands are broadleaved and are often made up of very hardy species that are resistant to pollution.

3.10 Canopy cover in coastal towns in Wales is often low, and Newport and St David's are typical in this regard. By contrast, Tenby (17.4% canopy cover) is above the Welsh national average, demonstrating that the establishment of a robust tree and woodland network within exposed coastal towns can help to ameliorate the environment and provide more comfortable living conditions. Despite their low canopy cover, these small coastal towns benefit from their strong natural setting which contributes greatly to the sense of place. Newport in particular has the feel of a town in woodland when viewed from across the estuary.

Benefits of tree and woodland planting

3.11 As noted earlier, new tree and woodland planting can bring a range of benefits for both nature and society. As well as acting as a carbon sink and producing timber, woodlands deliver numerous other ecosystem services: providing an important habitat for a variety of species, reducing air pollution and the risk of downstream flooding, improving community health and wellbeing by providing spaces for leisure and recreation, and contributing to cultural heritage and a sense of place. Woodlands and trees have a vital role to play in helping people and biodiversity adapt to the effects of a changing climate, which are likely to include changes in the pattern of rainfall, an increased risk of flooding, and higher peak temperatures. Woodlands are also important visual elements in the landscape that can make a significant contribution to sense of place.

3.12 Urban woodlands and trees can deliver a similar range of benefits as components of the green infrastructure in and around the villages and towns within the National Park. As well as contributing to urban character by bringing natural elements into urban areas and restoring derelict land, they can contribute to the quality of urban life by providing places for recreation and relaxation. They can be used to reduce unwelcome visual prominence in the wider landscape of hard built structures such as buildings and roads and soften the junction between the built and natural environment. Trees in

¹⁵ Natural Resources Wales, <u>Tree Cover in Wales' Towns and Cities</u> (2016)

streets and parks also help to lower noise pollution, combat air pollution, reduce temperatures in urban areas in summer and reduce the pressure on urban drainage systems by absorbing water.

Right tree, right place

3.13 As recognised by the UK Forestry Standard¹⁶ Guidelines on Forests and Landscapes:

'An appreciation of landscape character helps determine the capacity of a landscape to accommodate new forests and their design with respect to the key landscape characteristics of a particular area. Within a **valued landscape**, new forests, woodlands and trees can have a significant impact on its recognised qualities and how people experience it'.

3.14 Pembrokeshire Coast National Park is one of the smallest UK National Parks but has one of the most diverse landscapes and is the only National Park which is primarily designated for its unique coastal landscape.

3.15 Ecologically it is one of the richest and most diverse parts of Wales and is recognised as of international importance for a wide range of high-quality habitats and rare species. The high ecological value of many parts of the National Park is reflected in its coverage of nature conservation designations which include 13 Special Areas of Conservation (three marine SACs overlap about 75% of the Park's coastline and account for about 60% of the inshore area), five Special Protection Areas, one Marine Conservation Zone at Skomer, seven National Nature Reserves and 60 Sites of Special Scientific Interest (SSSI) – with 80% of the National Park coastline designated as SSSI.

3.16 The National Park also has a rich historic environment including 286 Scheduled Monuments, 14 Conservation Areas, and 15 registered historic parks and gardens. Large swathes of the National Park are registered as a special or outstanding

historic landscapes. The National Park also has many undesignated historic features, including archaeological sites and historic buildings.

3.17 Due to the richness of the landscape context, opportunities for woodland creation are correspondingly limited in terms of type and extent. The National Park Authority aims to achieve a holistic and well-planned approach to woodland creation which builds on the existing landscape framework. If woodland planting was permitted across a landscape, many of the elements (and combination of elements) that make this nationally protected landscape distinctive would be blurred or lost. Valued semi-natural habitats could be replaced by uncharacteristic woodland or the restoration potential to alternative habitats lost. Heritage features could be obscured, or the sense of wildness and remoteness along the unique coastline diminished. Woodland creation in the National Park should therefore be designed to take account of this landscape context in order make a positive contribution to the character of the local area.

Guidance for tree and woodland planting

3.18 Guidance on the factors that contribute to the appropriate design of woodland and tree planting in the National Park are set out below in **Table 3.1.** These align with guidance contained in the UK Forestry Standard.

Further guidance

3.19 The UK Forestry Standard (UKFS)¹⁷ sets out the standard for the planning, design and sustainable management of forests and woodland in the UK and provides valuable guidance for woodland creation.

3.20 Natural Resources Wales can also offer guidance on how to grow the right tree in the right place for the right reasons, and further guidance on tree planting is available from Forestry Commission Wales, including how planting trees can contribute to a farm business¹⁸.

 Table 3.1: Guidelines for woodland and tree planting in the National Park

Factor	Guidance
Shape	New woodlands should be located to establish a good fit with existing semi-natural woodland shapes and patterns, including the pattern of species within them. Woodland within the National Park is often small in scale and linear in shape, located along sheltered stream valleys or extending along river and estuaries and this irregular pattern should be reinforced and extended. Existing vegetation patterns and species (which reflect the underlying soil type, drainage, aspect and exposure) can also help guide planting

¹⁶ Forestry Commission, The UK Forestry Standard (2017)

¹⁷ Forestry Commission The UK Forestry Standard (2017)

18 New Farm Woodlands

Factor	Guidance
	species choices. Planting in geometric single-species blocks could detract from the prevalent woodland pattern in the National Park.
Landform	New woodlands in the National Park should relate to the local topography, particularly in hilly or mountainous areas, where landform is the dominant and most obvious landscape influence. Woodlands should run along the contours of slopes, such as the incised valley slopes, in order to integrate new woodland with its surrounding. Avoid planting woodland in straight horizontal or vertical lines across the landform or obscuring distinctive landform such as rocky outcrops and open ridgelines.
Enclosure patterns	In lowland farmed areas, where field patterns are the dominant and most obvious landscape influence, woodland should reinforce and extend the existing field pattern, particularly in areas with historic enclosure patterns. Use new woodlands to provide links to existing hedges and woodland copses. Extensive woodland planting could obscure the intricate small-scale pattern of the pastoral farmland found throughout the National Park, hiding historic field patterns that contribute to landscape character.
Scale	The scale of new woodlands should reflect the scale of the receiving landscape. The intricate scale of much of the farmed landscape within the National Park would mean that only smaller-scale woodlands would be appropriate, while large scale planting could weaken landscape character.
Diversity	The majority of the woodland within the National Park is species diverse. Diverse woodlands are more visually appealing and ecologically sound. Woodland resilience and climate adaptation can be improved through increasing the diversity of tree sizes, ages and species composition within woodlands, and ensuring they are appropriately managed – including through traditional techniques such as coppicing and pollarding.
Unity	Unity is achieved when woodlands integrate well with other features of the landscape. Woodland creation should be targeted to increase habitat connectivity across the landscape (strengthening hedgerow networks and providing links between existing woodlands) and providing links with other valued semi- natural habitats within the National Park such as coastal grasslands and heathlands. When selecting areas for woodland planting consideration should be given to the existence of existing valued habitats as well as the restoration potential to alternative habitats. The natural regeneration of existing native woodlands and natural colonisation by trees on suitable open ground should also be encouraged.
Visual character	Planting should be positioned to avoid screening or obscuring the extensive views out to sea and along the coast that are distinctive features of the National Park, or obscure landmark features and their settings.
Historic character	The National Park has a rich historic environment. Woodland planting should be located to preserve the integrity of the historic features and the strong cultural associations of the landscape. Avoid sitting woodland in areas that may adversely affect designated or locally listed heritage assets or their settings (including scheduled or undesignated monuments, listed and historic buildings, registered historic parks and gardens and conservation areas).
Perceptual and scenic qualities	The intangible qualities of the landscape of the National Park, including its wildness and tranquillity and cultural associations should be conserved and woodland planting designed to emphasise rather than detract from these qualities. For example, extensive woodland planting could detract from the exposed character of the coastline and remote qualities of the upland areas, which contribute to the sense of wildness and remoteness which are defining characteristics of the National Park.

This chapter presents the overall results of the landscape sensitivity assessment

4.1 The overall landscape sensitivity for each Landscape Character Area within the National Park is set out in **Table 4.1** and illustrated in **Figures 4.1** to **4.8**. These figures do not contain results for the urban areas within the National Park.

These results should be interpreted alongside the detailed information and guidance provided in the separate assessment profiles.

The LCAs within PCNP often contain areas of higher and lower landscape sensitivity that vary from the overall scores. It is therefore important to take note of the content of the individual assessment profiles, including any commentary which highlights areas which could be more sensitive to tree and woodland planting.

4.2 The detailed profiles and guidance for woodland creation for each LCA are included in **Appendix A.**

 Table 4.1: Landscape sensitivity scores for tree and woodland planting

LCA code	LCA name	Broadleaved Woodland				Mixed Woodland			
		Small-scale (<5ha)	Small-medium scale (>5-15ha)	Medium-scale (>15-30ha)	Large-scale (>30ha)	Small-scale (<5ha)	Small-medium scale (>5-15ha)	Medium-scale (>15-30ha)	Large-scale (>30ha)
LCA 1	Saundersfoot Settled Coast	L	L	L-M	Н	M-H	M-H	Н	Н
LCA 3	Caldey Island	М	Н	Н	Н	Н	Н	Н	Н
LCA 4	Manorbier/Freshwater East	L	L-M	М	Н	Н	Н	Н	Н
LCA 5	Stackpole	L	L	L-M	Н	н	Н	Н	н
LCA 6	Castlemartin/Merrion Ranges	L-M	L-M	М	M-H	н	Н	Н	Н
LCA 7	Angle Peninsula	L	М	М	M-H	Н	Н	Н	Н
LCA 8	Freshwater West/Brownslade Burrows	M-H	Н	Н	Н	н	Н	Н	Н
LCA 9	Marloes	L	L-M	М	Н	н	Н	Н	Н
LCA 10	Skomer & Skokholm	Н	Н	Н	Н	н	Н	Н	н
LCA 11	Herbrandston Refinery Fringe	L	L-M	М	M-H	н	Н	Н	Н
LCA 12	St Brides Bay	L-M	М	М	Н	Н	Н	Н	Н
LCA 13	Brandy Brook	L	L	L-M	M-H	Н	Н	Н	Н

LCA code	LCA name	Broadleaved Woodland				Mixed Woodland			
		Small-scale (<5ha)	Small-medium scale (>5-15ha)	Medium-scale (>15-30ha)	Large-scale (>30ha)	Small-scale (<5ha)	Small-medium scale (>5-15ha)	Medium-scale (>15-30ha)	Large-scale (>30ha)
LCA 14	Solva Valley	L	L-M	М	M-H	Н	Н	Н	Н
LCA 15	Dowrog & Tretio Commons	L-M	М	M-H	Н	Н	Н	Н	Н
LCA 16	Carn Llidi	М	Н	Н	Н	Н	Н	Н	Н
LCA 18	St Davids Headland	L-M	М	M-H	Н	Н	Н	Н	Н
LCA 19	Ramsey Island	Н	Н	Н	н	н	Н	н	Н
LCA 20	Trefin	L-M	М	Н	Н	Н	Н	Н	Н
LCA 21	Pen Caer/Strumble Head	L-M	M-H	Н	н	н	Н	н	Н
LCA 22	Mynydd Carningli	L	L-M	М	М	М	M-H	M-H	Н
LCA 24	Dinas Head	L	М	M-H	Н	Н	Н	Н	Н
LCA 25	Cemaes Head	L	L	М	н	н	Н	н	Н
LCA 26	Cwm Gwaun/Afon Nyfer	L	L	М	Н	Н	Н	н	Н
LCA 27	Mynydd Preseli	L	L-M	М	М	М	M-H	M-H	Н
LCA 28	Daugleddau	L	L	L-M	М	М	М	M-H	Н

Figure 4.1: Landscape sensitivity to small scale broadleaved woodland - see separate document
Figure 4.2: Landscape sensitivity to small-medium scale broadleaved woodland - see separate document

Figure 4.3: Landscape sensitivity to medium scale broadleaved woodland - see separate document

Figure 4.4: Landscape sensitivity to large scale broadleaved woodland - see separate document

Figure 4.5: Landscape sensitivity to small scale mixed woodland - see separate document

Figure 4.6: Landscape sensitivity to small-medium scale mixed woodland - see separate document

Figure 4.7: Landscape sensitivity to medium-scale mixed woodland - see separate document

Figure 4.8: Landscape sensitivity to large-scale mixed woodland - see separate document

This chapter presents the opportunities for woodland creation

5.1 Opportunities for future tree and woodland creation for 'typical' landscapes found within the National Park are summarised in **Table 5.1**. The guidance relates to the following landscape types:

- open coastal farmland
- wooded coastal farmland
- estuaries and river valleys
- uplands
- islands
- rocky headlands
- urban areas

5.2 Through the use of illustrations appropriate locations for tree and woodland planting have been highlighted for these 'typical' landscapes.

Table 5.1: Opportunities for woodland creation in typical landscapes found in the National Park

LCA group	LCAs	Opportunities for woodland creation
Open coastal farmland	LCA 6Castlemartin/Merrion RangesLCA 7Angle PeninsulaLCA 8Freshwater West/Brownslade Burre	There are very limited opportunities for woodland creation in the LCAs along the coastline of the National Park, due their extensive semi-natural habitats (particularly along the coastal strip), their distinctively open character and expansive views, and the strong sense of place and connection to the sea.
	LCA 9 Marloes LCA 11 Herbrandston Refinery Fringe LCA 12 St Brides Bay	There are opportunities for small scale or small-medium woodland planting (or occasionally medium-scale) when located to reinforce the traditional field pattern of the farmed landscape, or when planted to increase the connectivity of existing linear woodlands along stream valleys or provide connectivity with non-woodland habitats. There are also opportunities to restore lost lengths of hedgerow and plant new hedgerow trees.
	LCA 15 Dowrog & Tretio Commons LCA 18 St Davids Headland LCA 20 Trefin	Woodland creation could also be used to screen farm-based development or small-scale tourism development. Large scale woodland creation is only appropriate when used to screen views of large scale industrial development, such as oil refineries or LNG terminals e.g. Angle Peninsular (LCA 7) or Herbrandston Refinery Fringe (LCA 11).
Wooded coastal farmland	LCA 1 Saundersfoot settled coast LCA 4 Manorbier/Freshwater East	There are some opportunities to increase woodland coverage in these more sheltered coastal LCAs, particularly in the farmed landscape inland from the coast, or where the field pattern is larger. There are opportunities for the restructuring of existing conifer plantations, working towards a gradual reversion to a mosaic of mixed or broadleaved woodland. New tree and woodland planting could provide links between exiting valley woodlands, and could also screen tourism development such as camping and caravan sites.
Estuaries and river valleys	LCA 5 Stackpole LCA 13 Brandy Brook LCA 14 Solva Valley LCA 28 Daugleddau LCA 26 Cwm Gwaun/Afon Nyfer	 There are opportunities to increase woodland cover along the wooded estuaries and river valleys of the National Park. Woodland planting in these LCAs could strengthen the exiting landscape character if designed to extend the existing pattern of linear woodlands along the main estuaries and river valleys. Small or small-medium scale woodland could increase connectivity along small tributary valleys extending riparian woodlands, and enhancing flood management, and helping to prevent soil erosion. Small scale woodland coverage could also extend into the agricultural landscape but should sit within the traditional field pattern. There is an opportunity in many of these LCAs to restructure existing plantations (including PAWS) to improve climate change resilience by increasing age and species diversity e.g. Stackpole (LCA 5), Brandy Brook (LCA 13), Cwm

LCA group	LCAs	Opportunities for woodland creation
		There are also opportunities to soften settlement edges e.g. Solva Valley (LCA 14).
Uplands	LCA 22 Mynydd Carningli LCA 27 Mynydd Preseli	These upland landscapes are typically open on upper slopes and the rocky ridgelines make a dominant contribution to the character of the National Park and planting on upper slopes and rocky ridgelines should be avoided. Ongoing restructuring of exiting coniferous woodland creates an opportunity to work towards a gradual reversion to a mosaic of mixed or broadleaved woodland, and deliver benefits ranging from enhanced public access, to habitat networks, climate resilience and improved landscape values. There are some opportunities to increase woodland cover on the lower slopes. Extending woodland/scrub along upland tributaries could also provide increased connectivity with more extensive woodland in adjacent lowland river valleys. Woodland/ hedgerow tree planting could reinforce the small scale pattern on the fringing farmland and screen farmbased development or small-scale tourism development.
Islands	LCA 3 Caldey Island LCA 10 Skomer & Skokholm LCA 19 Ramsey Island	There are no opportunities for woodland creation on the offshore islands due to their high sensitivity to change (due to their extensive semi-natural habitats, archeological remains, distinctive open character and expansive views), except on Caldey Island, where limited small scale woodland planting could be used to extend and in-fill and soften the edges of the exiting wooded area.
Rocky headlands	LCA 16 Carn Llidi LCA 21 Pen Caer/Strumble Head LCA 24 Dinas Head LCA 25: Cemaes Head	There are very limited opportunities for woodland creation on these rocky headlands as this would detract from the intricate coastal landforms and craggy summits, as well as the extensive semi-natural habitats, the distinctive open character and expansive views, and the strong sense of remoteness and connection to the sea. There are some opportunities for small scale (or occasionally small-medium scale) woodland planting in the agricultural landscape when located to reinforce the traditional field pattern and provide habitat connectivity, conserving and reinforcing existing networks. Small-medium or medium scale planting could also increase the connectivity of existing linear woodlands along watercourses flowing to the coast. There are also opportunities to restore lost field boundaries and plant new hedgerow trees in more sheltered locations. Woodland creation could also screen village or farm-based development or small-scale tourism development.
Urban areas	LCA 2 Tenby	Urban woodland is most valuable when it is accessible to the local population and forms part of an interlinking green infrastructure and network of footpaths and recreational features. For woodlands to offer the most benefits to local

LCA group	LCAs	Opportunities for woodland creation
	LCA 17 St Davids LCA 23 Newport	communities they must be well managed. Reference should be made to the Green Infrastructure Action Plan for the National Park. ¹⁹
		Not all urban green space or urban fringe land is suitable for woodland and a balance between habitats and land use is required. In some areas, open green space provides more benefits due to a long history as open common land or is heavily used by the community. Many of the towns in the National Park are located on the coast and have valued semi-natural habitats such as coastal grassland, dune grasslands, and scrub or may contain features of archeological or historic value and so would be unsuitable for woodland planting.
		Existing woodland and amenity trees should be retained and extended wherever possible, and connectivity improved to woodlands on the edge of the towns or in the adjacent rural areas.
		Mature street trees are often a Victorian or Edwardian legacy, which are increasingly in need of replacement. There is an opportunity to enhance the urban treescape through planting similar large scale trees.
		Urban sites require robust planting of tolerant species reducing the need for high-input management. Existing trees are often appropriate to the character of the urban landscape and the range of species should be taken in account in species choice.

¹⁹ LUC, Pembrokeshire Towns: <u>A Green Infrastructure Action Plan</u> (2018)

Figure 5.1: Open coastal farmland: opportunities for tree and woodland planting



 Avoid planting along the coastal strip as this could detract from the open character and harm existing coastal habitats.

Introduce new, small-scale woodlands that sit within the field pattern of the farmed landscape and adjoin existing woodlands and/ or hedges. Restore lost hedgerows and plant hedgerow trees.

2

Plant new woodlands along steam valleys, extending the linear form of existing woodlands which relate to the enclosed valley landform.

(4) Introduce woodlands to screen farm based development or small-scale tourism development.

Establish new woodlands to screen views of large scale industrial development.



Figure 5.2: Wooded coastal farmland - opportunities for tree and woodland planting



Restructure existing conifer plantations with broadleaved species.

 Introduce new, small-scale woodlands that sit within the field pattern of the farmed landscape and adjoin existing woodlands and/ or hedges. Restore lost hedgerows and plant hedgerow trees.

Introduce new woodlands to provide links between existing valley woodlands.

(4) Establish new woodlands to screen views of tourism development.



Figure 5.3: Estuaries and river valleys - opportunities for tree and woodland planting



O Concentrate riparian woodlands adjacent to estuaries and river valleys to extend the existing pattern of linear woodland.

Plant new woodlands along stream valleys, extending the linear form of existing woodlands which relate to the enclosed valley landform.

Introduce new, small-scale woodlands that sit within the traditional field pattern of the farmed landscape and adjoin existing woodlands and/ or hedges.

Restructure existing conifer plantations with broadleaved
 species. Relate the design of new woodland to the local landform, and naturalise margins.

(5) Avoid planting which could harm existing estuarine habitats.



Figure 5.4: Uplands - opportunities for tree and woodland planting



Avoid planting on open upper slopes and rocky ridgelines as this could detract from the open character of the hills.

Restructure existing conifer plantations with broadleaved species. Relate design to the upland landform and naturalise margins.

- 3 Manage and extend woodland and scrub along upland tributaries.
- (4) Manage and extend existing woodlands on lower slopes.
- 5 Introducing new woodlands on lower slopes to connect with more extensive woodland in adjacent river valleys.

 Introduce new, small-scale woodlands that sit within the traditional field pattern of the farmed landscape and adjoin existing woodlands and/ or hedges.

 Introduce woodlands to screen farm based development or small-scale tourism development.



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Figure 5.5: Rocky headlands - opportunities for tree and woodland planting



O Avoid planting on rocky headlands as this could detract from the open coastal character and harm existing coastal habitats.

 Introduce new, small-scale woodlands that sit within the field pattern of the farmed landscape and adjoin existing woodlands and/ or hedges. Restore lost hedgerows and plant hedgerow trees.

Plant new woodlands along stream valleys, extending the linear form of existing woodlands which relate to the enclosed valley landform.

 Introduce woodlands to screen farm based development or small-scale tourism development.



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Appendix A Assessment profiles

This appendix presents the assessment profiles for tree and woodland planting for each LCA within the National Park.

A.1 The assessments of individual LCAs within the National Park excludes urban areas due to the limited opportunities for woodland planting within these settlements. As a result, the following LCAs were scoped out: Tenby (LCA2), St Davids (LCA 17) and Newport (LCA 23). General guidance on planting in urban areas of the National Park has been included in **Table 5.1** above.

See separate sheets

Appendix B

Data/information sources

The following key sources of information were used to inform this study:

- Pembrokeshire Coast National Park Landscape Character SPD (LCA)²⁰
- Pembrokeshire Coast National Park Seascape Character SPD²¹
- Planning Policy Wales²²
- Pembrokeshire Coast National Park Local Development Plan 2 (end date 2031)²³
- Pembrokeshire Coast National Park Management Plan 2020-2024²⁴
- An Approach to Landscape Sensitivity Assessment²⁵
- Natural Resources Wales: 'Landscape Sensitivity and Capacity Statement²⁶
- The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources. Technical Report²⁷

B.1 The following woodland and forestry guidance was consulted:

- UK Forestry Standard²⁸ Section 6.4 (Forests and Landscape)
- Design Techniques for Forest Management Planning²⁹
- Woodlands for Wales Strategy³⁰

²⁶ Natural Resources Wales. Landscape Sensitivity and Capacity in relation to on-shore wind and solar photo-voltaic developments: An assessment approach for Wales (2018)

 ²⁰ Landscape Character SPD (prepared by John Campion Associates Ltd) (2011, updated 2020)
 ²¹ Pembrokeshire Coast Seascape Character interim SPD (prepared

²¹ Pembrokeshire Coast Seascape Character interim SPD (prepared by White Consultants) (2013,updated 2020)

²² <u>https://gov.wales/planning-policy-wales (updated Feb 2021)</u>

²³ Pembrokeshire Coast National Park Local Development Plan 2 (end date 2031) September 2020

²⁴ Pembrokeshire Coast National Park Management Plan 2020-2024, Pembrokeshire Coast National Park Authority

²⁵ An approach to landscape sensitivity assessment – to inform spatial planning and land management Natural England (2019)

²⁸ Forestry Commission The UK Forestry Standard (2017)

 ²⁹ Forestry Commission. Practice Guide. Design techniques for forest management planning (2014)
 ³⁰ Woodland For Wales The Welsh Government's Strategy for trees,

³⁰ Woodland For Wales The Welsh Government's Strategy for trees, Welsh Government (2018)

- Written Statement. Trees and Timber³¹
- Written statement Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks 201832
- Natural Resources Wales Tree Cover in Wales' Towns and Cities (2016)33

B.2 In addition, the following table lists the main datasets collated and analysed in Geographic Information System (GIS) software as a key part of the evidence base for this study.

Table B.1: GIS data considered in the assessments

GIS layer	Source
Base maps	
Aerial Imagery	ESRI
Ordnance Survey 25k	Ordnance Survey (via Getmapping)
Ordnance Survey 50k	Ordnance Survey
Ordnance Survey 250K	Ordnance Survey
Contour lines	Ordnance Survey
Boundary	
Local Authority boundaries	Ordnance Survey
Pembrokeshire Coast National Park boundary	PCNPA
Action Area Boundaries	PNCPA
Landscape Character	
National Landscape and Seascape Character Areas for Wales	NRW
LANDMAP Aspect Areas	NRW
Pembrokeshire Coast Landscape Character Areas (2011)	PCNPA
Pembrokeshire Coast Seascape Character Areas and Types (2013)	PCNPA
Agriculture and Land Use	
Agricultural Land Classification	NRW
CEH Land Cover Map 2019	CEH

GIS layer	Source
Unified Peat Map of Wales	Lle
CORINE Land Cover	EEA
Natural Heritage	
Priority Habitat Inventory	NRW
National Nature Reserves	NRW
Local Nature Reserves	NRW
Sites of Special Scientific Interest	NRW
Ancient Woodland Inventory	NRW
National Forestry Inventory	FC
Regionally Important Geological Sites (RIGS) / Local Geological Sites	NRW
Geological Conservation Review (GCR)	NRW
Special Protection Areas (SPA)	NRW
Special Areas of Conservation (SAC)	NRW
Marine Conservation Zones	NRW
Ramsar	NRW
RSPB Reserves	RSPB
RSPB Important Bird Areas	RSPB
Habitat Networks	NRW
Canopy cover	Living Wales
Historic Environment	
Registered Historic Landscapes	Cadw
Listed Buildings	Cadw
Scheduled Monuments	Cadw
Registered Historic Parks and Gardens	PCNPA
Conservation Areas	Lle
Historic Environment Records (HERs)	Dyfed Archaeological Trust
Water resources	

³¹ Written Statement: Trees and Timber (2021)
 ³² Written Statement Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks

³³ Natural Resources Wales, <u>Tree Cover in Wales' Towns and Cities</u> (2016)

GIS layer	Source
WWNP Floodplain Reconnection Potential - Wales	NRW
WWNP Floodplain Woodland Planting Potential - Wales	NRW
WWNP Riparian Woodland Potential - Wales	NRW
Ordnance Survey OpenRivers	Ordnance Survey
Access and Recreation	
National Cycle Network	Sustrans
National Trails	NRW
Open Access, including Common Land	NRW
Country Parks	NRW
Planning and infrastructure	
Pre-Assessed Areas for Wind Energy (PAAs)	Lle
Solar Local Search Areas	PCNPA
National grid overhead lines and pipes	National Grid
Consented and operational solar farms and wind farms	BEIS
Dark skies and tranquillity	
Dark Skies and Light Pollution in Wales	NRW
OS 50 Terrain	Ordnance Survey
Tranquil Areas Wales (2009)	NRW

Appendix C

Glossary of terms and abbreviations

Table C.1: Glossary of Terms

Term	Definition
AOD	Above Ordnance Datum (sea level).
Agricultural Land Classification	The classification of agricultural land in England and Wales.
Ancient trees and veteran trees	Individual trees or groups of trees with wood pastures, historic parkland, hedgerows, orchards, park, and other areas. They are often found outside ancient woodlands. irreplaceable habitats with some or all of the following characteristics:
	Ancient trees
	An ancient tree is exceptionably valuable. Attributes can include its great age, size, condition, biodiversity value (as a result of significant wood decay and the habitat created from the ageing process), cultural and heritage value.
	Veteran trees
	A veteran tree may or may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value.
Ancient Woodland	Woodland which the evidence shows has had had continuous woodland cover since at least 1600 AD and has only been cleared for underwood or timber production. It is an extremely valuable ecological resource, with an exceptionally high diversity of flora and fauna.
Biodiversity	The measure of the variety of organisms present in different ecosystems.
Coppicing	The traditional method of woodland management in which trees are cut down to near the ground to encourage the production of long, straight shoots, which can subsequently be harvested.
Element	A component part of the landscape (e.g. hedges, roads, woods).
FC	Forestry Commission.
GCR	Geological Conservation Review.
Glastir	The Welsh Government's sustainable land management scheme, through which financial support is offered to farmers and land managers.
Habitat	The natural home or environment of an animal, plant, or other organism.
HER	Historic Environment Records
HLC	Historic Landscape Characterisation.

Term	Definition
Land cover	Combinations of land use and vegetation that cover the land surface.
Landscape	The term refers primarily to the visual appearance of the land, including its shape, form, and colours. However, the landscape is not a purely visual phenomenon; its character relies on a whole range of other dimensions, including geology, topography, soils, ecology, archaeology, landscape history, land use, architecture, and cultural associations.
Landscape character	A distinct pattern or combination of elements that occurs consistently in a particular landscape.
Landscape Character Area (LCA)	A unique geographic area with a consistent character and identity, which forms part of a landscape character type.
Landscape value	The relative value that is attached to different landscapes. In a policy context the usual basis for recognising certain highly valued landscapes is through the application of a local or national landscape designation. Yet a landscape may be valued by different communities of interest for many different reasons without any formal designation, recognising, for example, perceptual aspects such as scenic beauty, tranquillity or wildness; special cultural associations; the influence and presence of other conservation interests; or the existence of a consensus about importance, either nationally or locally.
Listed Building	A building, object or structure that has been judged to be of national importance in terms of architectural or historic interest.
LNR	Local Nature Reserve.
Natural character	Character as a result of natural or semi-natural features such as woodland, grassland, hedgerows etc.
National Landscape Character Area (NLCA)	National Landscape Character Areas are defined by NRW at a broad landscape scale. There are 48 individual NLCAs in Wales. Each has their own regionally distinct natural, cultural and perceptual characteristics.
NFI	National Forest Inventory
NNR	National Nature Reserve.
NRW	Natural Resources Wales.
Open access land	An area where the public have a right of access on foot as set out in the Countryside and Rights of Way (CRoW) Act 2005.
OS	Ordnance Survey.
PAWS	Planted Ancient Woodland Sites. Ancient woodland sites where the semi-natural woodland has been replaced with a plantation.
Pastoral	Land used for keeping or grazing sheep or cattle.
PCNPA	Pembrokeshire Coast National Park Authority
Phytophthora ramorum	A fungal-like organism that causes the death of a wide range of trees and shrubs, particularly Larch.
PRoW	Public Right of Way.

Term	Definition
Ramsar	Wetlands of international importance especially as Waterfowl Habitat.
Remnant	A part or quantity left after the greater part has been used, removed, or destroyed.
RIGS	Regionally Important Geological and Geomorphological Sites.
Riparian habitat	Riverbank habitat.
RHPG	Registered Historic Park and Garden - sites listed under the register of historic parks and gardens as designated under the Historic Environment (Wales) Act 2016.
SAC	Special Area of Conservation (EC Directive 92/43/EEC Habitats Directive).
Scheduled Monument	Nationally important archaeological sites or historic buildings, given protection against unauthorised change.
Semi-natural vegetation	Any type of natural vegetation which has been influenced by human activities, either directly or indirectly.
Sense of Place	A person's perception of a location's indigenous characteristics, based on the mix of uses, appearance and context that makes a place memorable.
Sensitive	The response to change or influence.
Skyline	The outline of a range of hills, ridge or group of buildings seen against the sky.
SPA	Special Protection Area (EC Directive 2009/147/EC on the Conservation of Wild Birds).
SSSI	Site of Special Scientific Interest.
Time depth	The time period expressed in the landscape, or the extent to which the landscape reflects a certain time period (a landscape with greater time depth will comprise older elements than a landscape with lesser time depth).
Topography	Combinations of slope and elevation that produce the shape and form of the land surface.
UKFS	UK Forestry Standard. The standard for the planning, design and sustainable management of forests and woodland in the UK.
Valued landscape attributes	Positive features and characteristics that are important to landscape character and that, if lost, would result in adverse change to the landscape.



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Figure 1.1 Pembrokeshire Coast National Park Landscape Character Areas

- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
- LCA 9: Marloes
- LCA 10: Skomer & Skokholm
- LCA 11: Herbrandston Refinery Fringe
- LCA 12: St Brides Bay
- LCA 13: Brandy Brook
- LCA 14: Solva Valley
- LCA 15: Dowrog & Tretio Commons
- LCA 16: Carn Llidi
- LCA 18: St Davids Headland
- LCA 19: Ramsey Island
- LCA 20: Trefin
- LCA 21: Pen Caer/Strumble Head
- LCA 22: Mynydd Carningli
- LCA 24: Dinas Head
- LCA 25: Cemaes Head
- LCA 26: Cwm Gwaun/Afon Nyfer
- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau

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Figure 4.1: Landscape sensitivity to small scale broadleaved

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
- LCA 9: Marloes
- LCA 10: Skomer & Skokholm
- LCA 11: Herbrandston Refinery Fringe
- LCA 12: St Brides Bay
- LCA 13: Brandy Brook
- LCA 14: Solva Valley
- LCA 15: Dowrog & Tretio Commons
- LCA 16: Carn Llidi
- LCA 18: St Davids Headland
- LCA 19: Ramsey Island
- LCA 20: Trefin
- LCA 21: Pen Caer/Strumble Head
- LCA 22: Mynydd Carningli
- LCA 24: Dinas Head
- LCA 25: Cemaes Head
- LCA 26: Cwm Gwaun/Afon Nyfer
- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau



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Figure 4.2: Landscape sensitivity to small-medium scale broadleaved woodland

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
- LCA 9: Marloes
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- LCA 12: St Brides Bay
- LCA 13: Brandy Brook
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- LCA 16: Carn Llidi
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- LCA 19: Ramsey Island
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- LCA 22: Mynydd Carningli
- LCA 24: Dinas Head
- LCA 25: Cemaes Head
- LCA 26: Cwm Gwaun/Afon Nyfer
- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau

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Figure 4.3: Landscape sensitivity to medium scale broadleaved woodland

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
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- LCA 22: Mynydd Carningli
- LCA 24: Dinas Head
- LCA 25: Cemaes Head
- LCA 26: Cwm Gwaun/Afon Nyfer
- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau

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Figure 4.4: Landscape sensitivity to large scale broadleaved

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
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Figure 4.5: Landscape sensitivity to small scale mixed

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
- LCA 9: Marloes
- LCA 10: Skomer & Skokholm
- LCA 11: Herbrandston Refinery Fringe
- LCA 12: St Brides Bay
- LCA 13: Brandy Brook
- LCA 14: Solva Valley
- LCA 15: Dowrog & Tretio Commons
- LCA 16: Carn Llidi
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- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau



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Figure 4.6: Landscape sensitivity to small-medium scale mixed woodland

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
- LCA 9: Marloes
- LCA 10: Skomer & Skokholm
- LCA 11: Herbrandston Refinery Fringe
- LCA 12: St Brides Bay
- LCA 13: Brandy Brook
- LCA 14: Solva Valley
- LCA 15: Dowrog & Tretio Commons
- LCA 16: Carn Llidi
- LCA 18: St Davids Headland
- LCA 19: Ramsey Island
- LCA 20: Trefin
- LCA 21: Pen Caer/Strumble Head
- LCA 22: Mynydd Carningli
- LCA 24: Dinas Head
- LCA 25: Cemaes Head
- LCA 26: Cwm Gwaun/Afon Nyfer
- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau

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Figure 4.7: Landscape sensitivity to medium scale mixed

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
- LCA 6: Castlemartin/Merrion Ranges
- LCA 7: Angle Peninsula
- LCA 8: Freshwater West/Brownslade Burrows
- LCA 9: Marloes
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- LCA 21: Pen Caer/Strumble Head
- LCA 22: Mynydd Carningli
- LCA 24: Dinas Head
- LCA 25: Cemaes Head
- LCA 26: Cwm Gwaun/Afon Nyfer
- LCA 27: Mynydd Preseli
- LCA 28: Daugleddau

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Figure 4.8: Landscape sensitivity to large scale mixed

- High sensitivity
- Moderate-high sensitivity
- Moderate sensitivity
- Low-moderate sensitivity
- Low sensitivity
- Landscape Character Area
- LCA 1: Saundersfoot settled coast
- LCA 3: Caldey Island
- LCA 4: Manorbier/Freshwater East
- LCA 5: Stackpole
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