

MONA OFFSHORE WIND PROJECT

Preliminary Environmental Information Report

Volume 3, chapter 18: Onshore ecology



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Final

Image of an offshore wind farm

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Glossary

Term	Meaning
Access area	Areas of private land where access had to be sought from the landowner.
Cofnod	North Wales Environmental Information Service
Evidence Plan	The Evidence Plan is a mechanism to agree upfront what information the Applicant needs to supply to the Planning Inspectorate as part of the Development Consent Order (DCO) applications for the Mona Offshore Wind Project.
Evidence Working Group	Expert working groups set up with relevant stakeholders as part of the Evidence Plan process.
Intertidal area	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS).
Joint Nature Conservation Committee	A statutory body that advises the UK Government and devolved administrations on UK-wide and international nature conservation.
Mean High Water Spring	The average height of spring high tides, as marked on OS maps
Non-statutory consultee	Organisations that an applicant may choose to consult in relation to a project who are not designated in law but are likely to have an interest in the project.
NPS	The current national policy statements published by the Department of Energy and Climate Change in 2011.
PEIR	Preliminary Environmental Information Report
Statutory consultee	Organisations that are required to be consulted by an applicant pursuant to the Planning Act 2008 in relation to an application for development consent. Not all consultees will be statutory consultees (see non-statutory consultee definition).
Sites of Special Scientific Interest	An area protected under law for its nationally important biological or geological features.
Special Area of Conservation (SAC)	An area which protects one or more special habitats and/or species, terrestrial or marine, listed in the Habitats Directive.
Special Protection Area (SPA)	An area protected under law for its internationally or nationally important numbers of migratory bird species
Wildlife and Countryside Act 1981, (as amended)	UK legislation which sets out protections for species and habitats.

Acronyms

Acronym	Description
DCO	Development Consent Order
EWG	Expert Working Group
GCN	Great Crested Newt

Acronym	Description
HELMP	Hydrology Ecology and Landscape Management Plan
JNCC	Joint Nature Conservation Committee
LDP	Local Development Plan
MHWS	Mean High Water Spring
MLWS	Mean Low Water Spring
PEIR	Preliminary Environmental Information Report
SAC	Special Area of Conservation
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
ZOI	Zone of Influence
LSS	Land Substation
LSS2	Land Substation Option 2
LSS7	Land Substation Option 7
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Projects
ES	Environmental Statement
IEF	Important Ecological Features
NRW	Natural Resources Wales
MDS	Maximum Design Scenario
PPW	Planning Policy Wales
HRA	HRA
eDNA	environmental Deoxyribonucleic Acid
HSI	Habitat Suitability Index
LNR	Local Nature Reserve
LWS	Local Wildlife Sites
BAP	Biodiversity Action Plan
NNR	National Nature Reserves
HDD	Horizontal Directional Drilling
NVC	National Vegetation Classification
ISAA	Information to Support Appropriate Assessment
CoCP	CoCP
IEMA	Institute of Environmental Management and Assessment
EPSML	European Protected Species Mitigation Licence

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Acronym	Description
FCS	Favourable Conservation Status
TCP	Tree Constraints Plan
RPA	Root Protection Areas
INNS	Invasive and Non-native Species
NGET	National Grid Electricity Transmission

Units

Unit	Description
%	Percentage
m ²	Metres square
ha	Hectares
kV	Kilovolts

18 Onshore Ecology

18.1 Introduction

18.1.1 Overview

18.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the assessment of the potential impact of the Mona Offshore Wind Project on onshore ecology. Specifically, this chapter considers the potential impact of the Mona Offshore Wind Project landward of Mean Low Water Springs (MLWS) during the construction, operations and maintenance, and decommissioning phases.

18.1.1.2 This chapter also draws upon information contained within the following documents of the PEIR:

- Volume 7, annex 17.4: Water Framework Directive Assessment surface water and groundwater assessment of the PEIR
- Volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR
- Volume 7, annex 18.2: Phase 1 habitat survey of the PEIR
- Volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.

18.1.1.3 The potential impacts of the Mona Offshore Wind Project on offshore and onshore ornithology have been considered in volume 2, chapter 10: Offshore ornithology and volume 3, chapter 24: Onshore and intertidal ornithology of the PEIR. In addition, the potential impact of the Mona Offshore Wind Project on benthic and intertidal ecology is reported in volume 2, chapter 7: Benthic subtidal and intertidal ecology of the PEIR.

18.1.2 Purpose of chapter

18.1.2.1 The primary purpose of the PEIR is outlined in volume 1, chapter 1: Introduction of the PEIR. In summary, the primary purpose of an Environmental Statement is to support the Development Consent Order (DCO) application for Mona Offshore Wind Project under the Planning Act 2008 (the 2008 Act). The PEIR constitutes the Preliminary Environmental Information for Mona Offshore Wind Project and sets out the findings of the EIA to date to support the pre-application consultation activities required under the 2008 Act. The EIA will be finalised following completion of pre-application consultation and the Environmental Statement will accompany the application to the Secretary of State for Development Consent.

18.1.2.2 The PEIR forms the basis for statutory consultation which will last for 47 days and conclude on 4 June 2023 as outlined in volume 1, chapter 2: Policy and legislation of the PEIR. At this point, comments received on the PEIR will be reviewed and incorporated (where appropriate) into the Environmental Statement, which will be submitted in support of the application for Development Consent scheduled for quarter one of 2024

18.1.2.3 In particular, this PEIR chapter:

- Presents the existing environmental baseline established from desk studies, site-specific surveys, and consultation.

- Identifies any assumptions and limitations encountered in compiling the environmental information.
- Presents the potential environmental effects on onshore ecology arising from the Mona Offshore Wind Project, based on the information gathered and the analysis and assessments undertaken.
- Highlights any necessary monitoring and/or mitigation measures which could prevent, minimise, reduce, or offset the possible environmental effects of the Mona Offshore Wind Project on onshore ecology.

18.1.3 Study area

18.1.3.1 The onshore ecology study area focuses on ecological receptors landward of MLWS where potential impacts are more likely to occur on onshore ecological receptors.

18.1.3.2 The onshore ecology study area has been defined as the area of land (landward of MLWS) to be temporarily or permanently occupied during the construction, operation and maintenance and decommissioning of the Mona Offshore Wind Project.

18.1.3.3 The following buffers were used for the ecology study area, as detailed in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7 annex 18.3: Great crested newt interim survey technical report of the PEIR:

- A 200m buffer around the Mona Proposed Onshore Development Area was used for field surveys and for protected species and a 250m buffer was used for GCN surveys
- A 2 kilometre (km) buffer around the Mona Proposed Onshore Development Area was used for the desktop study area
- A 2km buffer around the Mona Proposed Onshore Development Area was used for locally designated sites
- A 5km buffer around the Mona Proposed Onshore Development Area was used for nationally designated sites
- A 20km buffer around the Mona Proposed Onshore Development Area was used for internationally designated sites.

18.1.3.4 The onshore ecology study area falls within the administrative areas of both Conwy County Borough Council and Denbighshire County Council. The onshore ecology study area starts at the intertidal zone at the Mona Landfall and continues through limestone hills that are dominated by farming and improved grassland used for sheep grazing. Within the landscape, there are small blocks of woodland, scrub, ponds, watercourses, and field boundaries comprised of hedgerows of various habitat quality. Small areas of coastal habitats are present at the coast.

18.1.3.5 The onshore ecology study area has been divided into nine sections for the purpose of the Phase 1 Habitat reporting (see volume 7, annex 18.2: Phase 1 habitat survey report of the PEIR). As described in volume 1, chapter 3: Project description of the PEIR, two alternative locations have been identified for the Mona Onshore Substation, Land Substation (LSS) Option 2 (LSS2) and LSS Option 7 (LSS7). As such, Section 8 and 9 of the Mona Proposed Onshore Development Area have been sub-divided into LSS2 Section 8, LSS7 Section 8, LSS2 Section 9 and LSS7 Section 9.

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- 18.1.3.6 These sections of the Mona Proposed Onshore Development Area were informed through agreement with bp/EnBW and approximately follow the boundaries presented in the Works Plans – Onshore. This also allows the location of ecological features to be more accurately described in relation to the Mona Proposed Onshore Development Area.
- 18.1.3.7 The location and geographic extent of the onshore ecology study area is presented in Figure 18.1 and the sections of the Mona Proposed Onshore Development Area are shown in Figure 18.2 of this chapter.

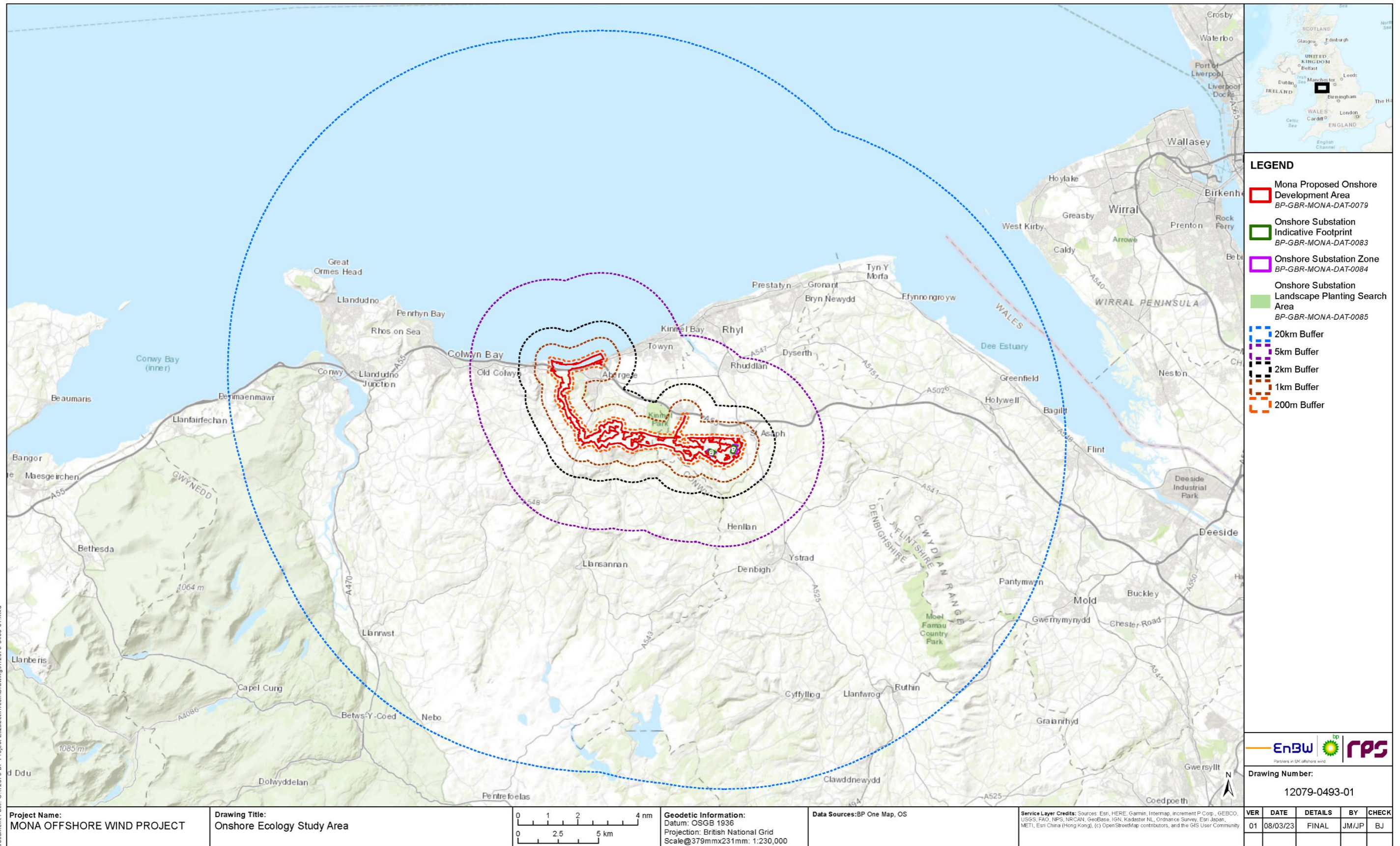


Figure 18.1: Onshore Ecology study area.

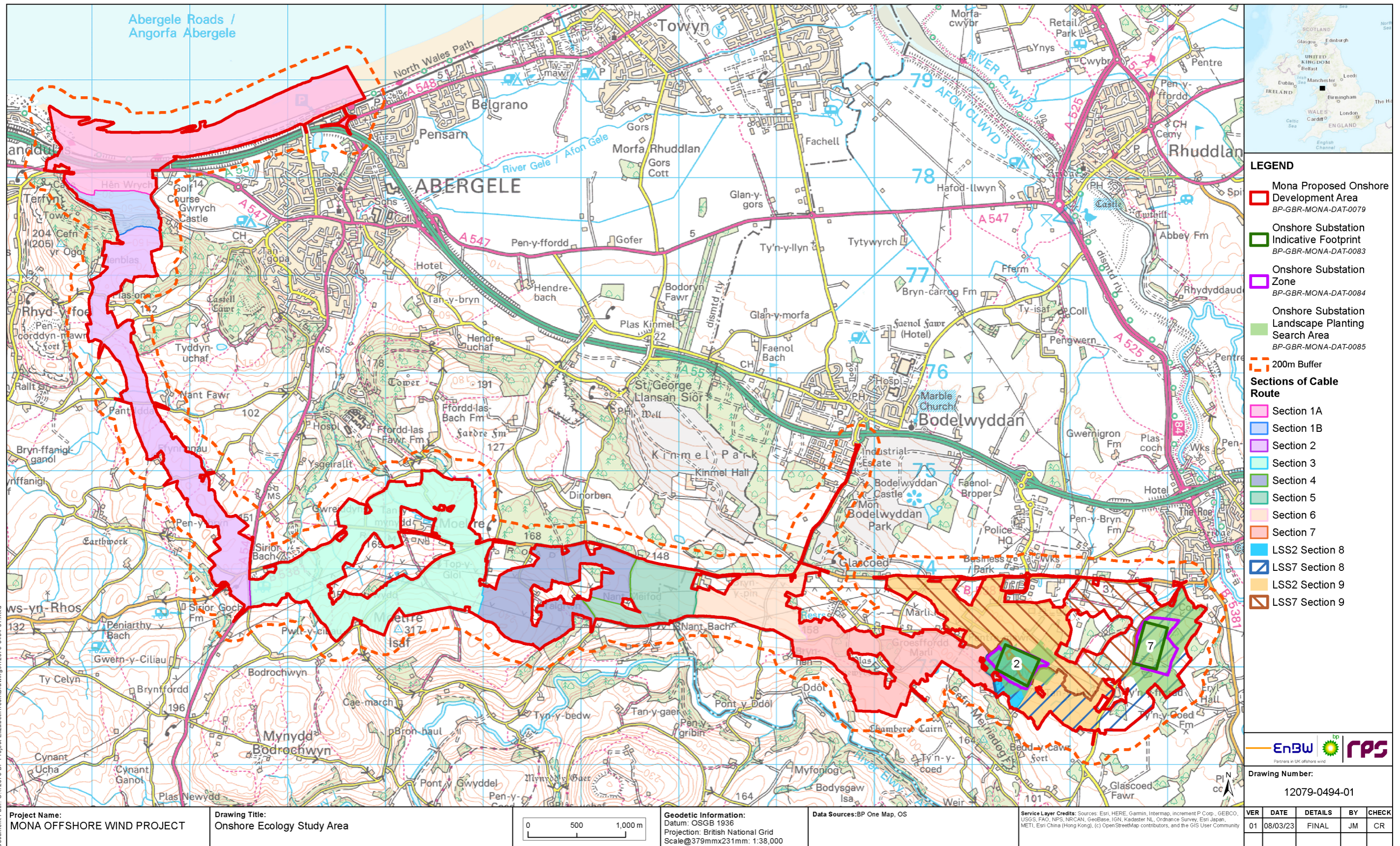


Figure 18.2: Sections of the Mona Proposed Onshore Development Area.

18.2 Policy context

18.2.1 National Policy Statements

- 18.2.1.1 Planning policy on renewable energy infrastructure is presented in volume 1, chapter 2: Policy and legislation of the PEIR. Planning policy on offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to onshore ecology, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1; DECC, 2011a), the NPS for Renewable Energy Infrastructure (EN-3, DECC, 2011b) and the NPS for Electricity Networks Infrastructure (EN-5, DECC, 2011c).
- 18.2.1.2 NPS EN-1 and NPS EN-3 include guidance on what matters are to be considered in the assessment. These are summarised in Table 18.1 below. NPS EN-1 and NPS EN-3 also highlight a number of factors relating to the determination of an application and in relation to mitigation (further information provided in Table 18.1).
- 18.2.1.3 NPS-5 includes guidance on what matters are to be considered in the onshore assessment of electrical networks. These are summarised in Table 18.3 below. NPS EN-5 also highlights a number of factors relating to the determination of an application and in relation to mitigation (further information provided in Table 18.4 below).
- 18.2.1.4 Table 18.2 specifically refers to NPS EN-1 (DECC, 2011a), NPS EN-3 (DECC, 2011b) and NPS EN-5 (DECC, 2011c). If the NPSs are updated prior to the application for Development Consent, the revised NPSs will be fully considered in relation to onshore ecology within the Environmental Statement.

Table 18.1: Summary of NPS EN-1 and NPS EN-3 provisions relevant to onshore ecology.

Summary of NPS EN-1 and EN-3 provision	How and where considered in the PEIR
NPS EN-1	
Where the proposal is subject to EIA, the applicant should ensure that the Environmental Statement clearly sets out any effects on the environment, including specific fauna. An assessment is required of any likely significant effects of the proposal on the environment be they direct, indirect, secondary, cumulative, short, medium, long-term, permanent, temporary, positive, or negative at all stages of the project. Methods for avoiding or mitigating adverse effects should be included. (NPS EN1 paragraph 4.2.1)	Assessment of the potential effects of the Mona Offshore Wind Project on onshore ecology are considered in section 18.8 of this chapter. Primary and tertiary mitigation measures are discussed in section 18.7 of this chapter.
The Environmental Statement should include an assessment of the effects on the environment arising from the construction of infrastructure once completed but before it is operational. (NPS EN1 paragraph 4.2.3)	The effects during construction, operation, and decommissioning the Mona Offshore Wind Project are assessed in section 18.8 of this chapter.

Summary of NPS EN-1 and EN-3 provision	How and where considered in the PEIR
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<p>Where the development is subject to EIA the applicant should ensure that the Environmental Statement clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity. (NPS EN-1 paragraph 5.3.3)</p>	<p>As part of this chapter the process of identifying designated sites has been undertaken in section 18.4.2. The baseline ecological environment is described in section 18.4 of this chapter.</p> <p>Assessment of the potential effects of the Mona Offshore Wind Project for specific species are identified and considered in section 18.7 of this chapter.</p> <p>Important areas for onshore ecology are considered in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested new interim survey technical report of the PEIR.</p>
<p>The important sites for biodiversity are those identified through international conventions and European Directives. The Habitats Regulations provide statutory protection for Special Areas of Conservations (SACs), Special Protection Areas (SPAs) and Ramsar sites. (NPS EN-1 paragraph 5.3.9)</p>	<p>Internationally designated conservation sites are considered in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR and volume 7 annex 18.2: Phase 1 habitat survey of the PEIR.</p>
<p>All Sites of Specific Scientific Interest (SSSIs) should be protected as if designated as sites of international importance, including those features of SSSIs not covered by international designation. (NPS EN-1 paragraph 5.3.10)</p>	<p>Important areas for onshore ecology are considered in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR and volume 7 annex 18.2: Phase 1 habitat survey of the PEIR.</p>
<p>Many species and habitats have been identified as being of principal importance to biodiversity in addition to wildlife species that receive statutory protection under a range of legislative provisions. These species and habitats require conservation action. (NPS EN-1 paragraph 5.3.17)</p>	<p>Assessment of the potential effects of the Mona Offshore Wind Project are considered in section 18.8 of this chapter. Measures adopted as part of the Mona Offshore Wind Project are discussed in section 18.7 of this chapter.</p> <p>In addition, all species afforded extra protections under the Conservation of Habitats and Species Act 2017 (as amended), Schedule 1 of the Wildlife and Countryside Act, and Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.</p>
NPS EN-3	
<p>Where the applicant has identified a precise route for the cable to a precise location for the onshore substation and connection to the transmission network, the EIA should assess the effects of the cable. (NPS EN-3 paragraph 2.6.37)</p>	<p>The maximum impacts of the cable during construction, operation, and decommissioning are discussed in section 18.8 of this chapter.</p> <p>Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.</p>
<p>Consultation on the assessment methodologies should be undertaken at early stages with the statutory consultees as appropriate. (NPS EN-3 paragraph 2.6.65)</p>	<p>Relevant statutory and non-statutory consultation with stakeholders has been carried out (e.g. via the Evidence Plan Process Expert Working Groups (EWG) and are presented in section 18.3 of this chapter.0</p>

Summary of NPS EN-1 and EN-3 provision	How and where considered in the PEIR
<p>There is the potential to impact on species and habitats through:</p> <ul style="list-style-type: none"> • Direct habitat loss • Disturbance from construction activities • Displacement of protected species during the operations phase, resulting in loss of feeding/roosting/breeding areas • Impacts on protected species movements (i.e. barrier effect) and associated increased energy use by protected species for commuting between breeding and foraging areas. <p>(NPS EN-3 paragraph 2.6.101)</p>	<p>Assessment of the potential effects on the Mona Proposed Onshore Development Area for Important Ecological Features (IEFs) are discussed in section 18.7.</p>
<p>The scope, effort and methods required for ecology surveys should have been discussed with the relevant statutory advisor.</p> <p>(NPS EN-3 paragraph 2.6.102)</p>	<p>Baseline survey methods have been discussed with Natural Resources Wales (NRW) through the Evidence Plan Process EWGs.</p>

Table 18.2: Summary of NPS EN-1 and NPS EN-3 policy on decision making relevant to onshore ecology.

Summary of NPS EN-1 and EN-3 provision	How and where considered in the PEIR
NPS EN-1	
<p>The aim of the NPS is to ensure a halting, and if possible, a reversal, of declines in priority habitats and species, with wild species and habitats as part of healthy, functioning ecosystems.</p> <p>(NPS EN-1 paragraph 5.3.5)</p>	<p>Assessment of the potential effects of the Mona Offshore Wind Project and associated measures adopted as part of the project are identified and discussed in sections 18.8 and 18.7 of this chapter respectively.</p>
<p><i>‘The Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; habitats and other species of principal importance for the conservation of biodiversity; and to biodiversity and geological interests within the wider environment.’</i></p> <p>(NPS EN-1 paragraph 5.3.8)</p>	<p>Internationally, nationally, and locally important onshore ecology sites are considered in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2 Phase 1 habitat survey of the PEIR.</p> <p>This process of identifying designated ecology sites of international, national, and local importance has been considered (see 18.4.2 of this chapter).</p> <p>In addition, all species afforded extra protections under the: Conservation of Habitats and Species Act 2017 (as amended); Schedule 1 of the Wildlife and Countryside Act; and Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim technical report of the PEIR.</p>
<p>The Secretary of State should use requirements alongside planning obligations to mitigate the impacts of the development and to enhance/conservate biodiversity where possible.</p> <p>(NPS EN-1 paragraph 5.3.11)</p>	<p>Assessment of the potential effects of the Mona Offshore Wind Project and measures adopted as part of the project are identified and discussed in sections 18.8 and 18.7 of this chapter respectively.</p>

Summary of NPS EN-1 and EN-3 provision	How and where considered in the PEIR
<p>The Secretary of State should give substantial weight to any harm to biodiversity of national or regional importance where it considers it may arise from the proposed development.</p> <p>(NPS EN-1 paragraph 5.3.17)</p>	<p>Nationally important sites are considered in 18.4.2 of this chapter.</p> <p>Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.</p>
<p>The Secretary of State will need to take account of what mitigation measures may have been agreed between the applicant and Natural England (or Natural Resources Wales) or the Marine Management Organisation (MMO), and whether these organisations have granted or refused or intends to grant or refuse, any relevant licences, including protected species mitigation licences.</p> <p>(NPS EN-1 paragraph 5.3.20)</p>	<p>Measures adopted as part of the Mona Offshore Wind Project relevant to onshore ecology have been considered in section 18.7 of this chapter.</p>

Table 18.3: Summary of NPS EN-5 provision relevant to onshore ecology.

Summary of NPS EN-5 provision	How and where considered in the PEIR
<p>The applicant must consider whether the proposed cable corridor will fragment hunting, feeding and breeding grounds for species where they are functionally linked to sites designated or allocated under the ‘national site network’ provisions of the Conservation of Habitats and Species Regulations.</p> <p>(NPS EN-5 paragraph 2.10.1)</p>	<p>The potential effects of the Mona Offshore Wind Project on onshore ecology are considered in section 18.8 of this chapter, which takes into account the Maximum Design Scenario (MDS) see Table 18.18.</p>

Table 18.4: Summary of NPS EN-5 policy on decision making relevant to onshore ecology.

Summary of NPS EN-5 provision	How and where considered in the PEIR
<p>The Secretary of State should ensure that biodiversity has been considered in the Environmental Statement and that appropriate mitigation measures will be taken where necessary.</p> <p>(NPS EN-5 2.7.3)</p>	<p>Assessment of the potential effects of the Mona Offshore Wind Project are considered in section 18.8 of this chapter. Measures adopted as part of the Mona Offshore Wind Project are identified in section 18.7 of this chapter.</p>

18.2.2 Planning Policies for Wales

18.2.2.1 The assessment of potential changes to onshore ecology has been made with consideration to the specific policies set out in Planning Policy Wales (PPW) (Welsh Government, 2021a). Key provisions of PPW are set out in Table 18.5, along with details as to how these have been addressed within the assessment.

Table 18.5: Summary of the Planning Policy Wales relevant to onshore ecology.

Summary of PPW provision	How and where considered in the PEIR
<p>Development proposals must consider how they will: support the conservation of biodiversity; ensure action in Wales contributes to international responsibilities towards biodiversity and habitats; ensure statutorily and non-statutorily designated sites are protected; safeguard from direct impacts on protected and priority species and the ecological networks and components that underpin them; secure enhancement of and improvements to ecosystem resilience.</p> <p>(PPW paragraph 6.4.3)</p>	<p>Internationally, nationally, and locally important ecological sites are considered in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR and volume 7 annex 18.2: Phase 1 habitat survey of the PEIR.</p> <p>This process of identifying designated sites of international, national, and local conservation importance has been considered (see section 18.4.2 of this chapter).</p> <p>In addition, all species afforded extra protections under the Wildlife and Countryside Act, and Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR.</p>
<p>Development should not cause any significant loss of habitats or populations locally or nationally and must provide a net benefit for biodiversity.</p>	<p>The Mona Offshore Wind Project is committed to attempting to achieve long term net biodiversity as outlined in Table 18.20 of this chapter.</p> <p>The Mona Offshore Wind Project is aware of the consultation for policy changes on the Net benefit of Biodiversity and Ecosystem Resilience incorporating changes to strengthen policy SSSIs, Trees and Woodland and Green infrastructure published 9 March 2023 and will take these policy changes into account during the preparation of the Environmental Statement and DCO application.</p>
<p>The presence of a protected species is a material consideration when assessing the impacts of a proposal. An ecological survey to determine the presence of any such species and assess the likely impact of the development may be required to inform decision making.</p> <p>(PPW paragraph 6.4.22)</p>	<p>All species afforded extra protections under the: Conservation of Habitats and Species Act 2017 (as amended), Schedule 1 of the Wildlife and Countryside Act, and Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR. This has also been taken into consideration in the assessment in section 18.8 of this chapter.</p>

18.2.3 Local Planning Policies

- 18.2.3.1 The assessment of potential changes to onshore ecology has also been made with consideration to the specific policies set out in Conwy Local Development Plan (LDP) 2007-2022 (Conwy County Borough Council, 2013) and Denbighshire County Council LDP 2006-2021 (Denbighshire County Council, 2013). The LDPs for both local authorities have expired, however replacement LDPs are currently being developed. The current adopted LDPs will remain the statutory development plan until they are replaced by a revised version of the LDP.
- 18.2.3.2 It is acknowledged that these local planning policies are currently out of date, but no future policy is yet forthcoming and, as such, the key provisions are set out in Table 18.6 along with details as to how these have been addressed within the assessment, with respect to the existing local planning policies.

Table 18.6: Local Planning Policy of relevance to onshore ecology.

Policy	Key provisions	How and where considered in the PEIR
Conwy County Borough Council: Adopted Local Development Plan (October 2013)		
NTE/3 - Biodiversity	New development should aim to conserve and, where possible, enhance biodiversity.	The onshore ecology baseline has been established (see section 18.4.4 of this chapter) through desk top studies and site specific surveys. Mitigation measures, including mitigation adopted as part of the Mona Offshore Wind Project are set out in section 18.7 of this chapter.
Denbighshire County Council: Adopted Local Development Plan (June 2013)		
VOE 5	<p>Development proposals that may have an impact on protected species or designated sites of nature conservation will be required to be supported by a biodiversity statement which must have regard to the County biodiversity aspiration for conservation, enhancement, and restoration.</p> <p>Consent will not be supported for development proposals that are likely to cause significant harm to the qualifying features of internationally and nationally designated sites of nature conservation, priority habitats, priority species or to species that are under threat.</p>	<p>Internationally, nationally, and locally important sites are considered in volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR and volume 7 annex 18.2: Phase 1 habitat survey of the PEIR. This process of identifying designated sites of international, national, and local importance has been considered (see section 18.4.5 of this chapter).</p> <p>In addition, all species afforded extra protections under the Conservation of Habitats and Species Act 2017 (as amended), Schedule 1 of the Wildlife and Countryside Act, and Section 7 species of the Environment (Wales) Act 2016, are considered in: volume 7 annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 Habitat Survey Technical Report of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.</p> <p>This has been taken into consideration in the assessment in section 18.8 of this chapter. Measures adopted as part of the Mona Offshore Wind Project are set out in section 18.7 of this chapter.</p> <p>In accordance with policy VOE 5 of the Adopted Local Development Plan 2006-2021 (Denbighshire County Council, 2013), a Biodiversity Statement will be prepared and submitted in support of the Environmental Statement. The Biodiversity Statement will set out how the Mona Offshore Wind Project would preserve Denbighshire County Council's objectives for conserving, enhancing, and restoring biodiversity.</p>
VOE 10	Development proposals which promote the provision of renewable energy technologies will be supported providing they...demonstrate no unacceptable impact upon the interests of nature conservation, wildlife, natural heritage...	The onshore ecology baseline has been established (see section 18.4 of this chapter) through desk top studies and site specific surveys. Measures adopted as part of the Mona Offshore Wind Project are set out in 18.7 of this chapter and a thorough assessment of IEFs has been undertaken (see section 18.4.6 of this chapter).

18.3 Consultation

18.3.1.1 A summary of the key issues raised during consultation activities undertaken to date specific to onshore ecology is presented in Table 18.7 below, together with how these issues have been considered in the production of this PEIR chapter. Further detail is presented within volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7 annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.

18.3.2 Evidence plan

18.3.2.1 The purpose of the Evidence Plan process is to agree the information the Mona Offshore Wind Project needs to supply to the Secretary of State, as part of a DCO application for Mona Offshore Wind Project with NRW, Conwy County Borough Council and Denbighshire County Council. The Evidence Plan seeks to ensure compliance with the Habitat Regulations Assessment (HRA) and EIA. As part of the Evidence Plan process, an Onshore Ecology EWG has been set up and the meetings are set out in Table 18.7.

Table 18.7: Summary of key consultation issues raised during consultation activities undertaken for the Mona Offshore Wind Project relevant to onshore ecology.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or were considered in this chapter
March 2022	NRW (email)	<p>Confirmation was sought from NRW on the methodology for GCN surveys; specifically, would the NRW accept the use of environmental DNA (eDNA) to confirm absence and where the eDNA results were negative would NRW agree that no surveys would be required unless:</p> <ul style="list-style-type: none"> • there had been a previous record of GCN. • ponds are within 250m of a pond where GCN have been confirmed, provided habitats are available for connectivity purposes and that these ponds do not support fish. <p>NRW were also asked if the St Asaph, Gwynt Y Mor and Burbo Bank ponds, which are already being monitored annually, could be excluded from the proposed survey programme.</p> <p>NRW confirmed that they had no objection to this proposed approach and added that modelling data which suggests the likely presence of GCN is considered as a material component of surveillance strategies. There is a <i>presumption in favour of all ponds with extant records being subject to survey using traditional survey techniques unless the ponds are known to be subject to ongoing surveys by third parties.</i>"</p>	GCN surveys were undertaken following the scope and points of clarification agreed with NRW and are reported in volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.
May 2022	Denbighshire County Council (Scoping Opinion)	The proposal therefore has the potential to impact on protected species, and ecological impacts should be scoped in for the construction and operational phases.	Protected species have been surveyed where possible and are assessed in this chapter, where appropriate.
June 2022	Natural England (Scoping response)	Identification of receptors and the sensitivity of receptors to impact scale definitions should be discussed and agreed as part of the Evidence Plan process with the relevant Expert Working Group (EWG). These definitions should be set out within the ES.	The definitions of IEFs are set out in section 18.4.6 of this chapter.
June 2022	The Planning Inspectorate (Scoping Opinion)	The Applicant should seek to agree study areas and receptors with relevant consultation bodies. The Environmental Statement should confirm whether the study area proposed aligns with relevant policy and guidance and provide justification for any divergences. The Environmental Statement should include figures to identify the final study area for each aspect and the location of any static receptors considered in the assessment.	The onshore ecology study area was set out in the Mona Offshore Wind Project Scoping Report (Mona Offshore Wind Ltd, 2022) and survey scope of surveys is agreed with the Onshore Ecology Expert Working Group (EWG).
June 2022	The Planning Inspectorate (Scoping Opinion)	Where possible, the Applicant should seek to agree the magnitude of impact or sensitivity of receptors with relevant consultees through the PEIR and pre-application process. Where differences in opinion remain, these should be identified within the Environmental Statement with justification given for the Applicant's choice.	Justification for significance criteria is provided in section 18.3.2 of this chapter.
June 2022	The Planning Inspectorate (Scoping Opinion)	A number of mitigation plans have been referred to in aspect chapters. Where plans are relied upon to avoid significant environmental effects, outline or in-principle plans should be submitted as part of the DCO application.	Measures adopted as part of the Mona Offshore Wind Project are listed in Table 18.20 of this chapter.
June 2022	The Planning Inspectorate (Scoping Opinion)	The impact of temporary and permanent habitat loss on protected habitats and species during operations and maintenance of the Mona onshore transmission assets. On the basis of the likely small scale and nature of habitat loss associated with the operations and maintenance of the Mona onshore transmission assets, the Inspectorate is content that this matter can be scoped out of the assessment.	Noted – this impact has been scoped out of the assessment as set out in Table 18.19 of this chapter.
June 2022	The Planning Inspectorate (Scoping Opinion)	The impact of pollution caused by accidental spills/contaminant release on protected habitats and species during operations and maintenance of the Mona onshore transmission assets. The Scoping Report proposes to scope out accidental spills/contaminant release from operations and maintenance activities for the Proposed Development. The Inspectorate agrees that these effects are capable of mitigation through standard management practices and can be scoped out of the assessment. The Environmental Statement should provide details of the proposed mitigation measures to be included in the Ecological Management Plan. The Environmental Statement should also explain how such measures will be secured.	Noted – this impact has been scoped out of the assessment as set out in Table 18.19 of this chapter.
June 2022	The Planning Inspectorate (Scoping Opinion)	The Scoping Report confirms that the detailed scope, methodologies, and extents of the site-specific surveys identified will be agreed with NRW in advance of survey commencement. The Environmental Statement should provide a clear rationale and a justification as to the approach undertaken to the surveys used to inform the assessment, including reference to agreements reached with relevant consultation bodies, such as NRW.	GCN survey scope was agreed with NRW, and the Phase 1 habitat surveys have been carried out to industry standard. Further survey methodologies for habitats and protected species will be discussed and agreed with the EWG and stakeholders where required.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or were considered in this chapter
June 2022	The Planning Inspectorate (Scoping Opinion)	Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the Environmental Statement as a confidential annex. All other assessment information should be included in an Environmental Statement chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Protected species surveys will be reported in the Environmental Statement as confidential annexes, where appropriate.
June 2022	Onshore Ecology Expert Working Group (01)	The purpose of the first meeting was to introduce the Mona Offshore Wind Project to the EWG and to discuss the ongoing and proposed onshore ecology surveys and desk top data sources.	The scope and results of the initial surveys and desk study are reported in volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR, volume 7, annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.
December 2022	Onshore Ecology Expert Working Group (02)	The purpose of the meeting was to confirm the approach to baseline characterisation including agreeing the onshore ecology study area and providing updates on the ecology surveys.	The scope and results of the initial surveys and desk study are reported in volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR, volume annex 18.2: Phase 1 habitat survey of the PEIR and volume 7, annex 18.3: Great crested newt interim survey technical report of the PEIR.

18.4 Baseline environment

18.4.1 Methodology to inform baseline

Desktop study

18.4.1.1 Information on onshore ecological receptors within the onshore ecology study area was collected through a detailed desktop review of existing studies and datasets. These are summarised at Table 18.19 of this chapter below.

18.4.1.2 Following the statutory consultation, the Mona Proposed Onshore Development Area will be refined. The desk study data will be updated for the Environmental Statement to check for any new records arising since the data request in March 2022 and to ensure consistency with the refined project boundaries.

Table 18.8: Summary of key desktop reports.

Title	Source	Year	Author
Conwy County Council website	Conwy County Council website	Accessed January 2023	Conwy County Council
Defra Magic Map Application	Defra Magic Map Application	Accessed January 2023	Defra
Denbighshire County Council website	Denbighshire County Council website	Accessed January 2023	Denbighshire County Council
Saint Asaph Solar Farm	Anesco Ltd	2022	SLR
Protected and Notable Species Records plus 2km protected species and 1 km plants and invertebrates	Cofnod – North Wales Environmental Information Service	2022	Cofnod – North Wales Environmental Information Service

18.4.2 Identification of designated sites

18.4.2.1 All designated sites within the onshore ecology study area and qualifying interest features that could be affected by the construction, operations and maintenance, and decommissioning phases of the Mona Offshore Wind Project were identified using the three-step process described below:

- Step 1: All designated sites of international, national and local importance within the onshore ecology study area were identified using the DEFRA Magic Map Application, Conwy County Council website, and Denbighshire County Council website.
- Step 2: Information was compiled on the relevant ecological qualifying interests for each of these sites as follows: Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC, Llwyn SAC, Coedwigoedd Penrhyn Creuddyn/Creuddyn Peninsula Woods SAC, Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC, Llanddulas Limestone and Gwrych Castle Wood Site of SSSI, Traeth Pensarn SSSI, Coed y Gopa SSSI, Coedydd ac Ogofau Elwy a Merichion SSSI, Mynydd Marian SSSI and Coedydd Derw Elwy SSSI.

- Step 3: Using the above information and expert judgement, sites were included for further consideration if:
 1. A designated site directly overlaps with the Mona Proposed Onshore Development Area
 2. The sites and associated qualifying interests were located within the potential Zone of Influence (ZOI) for impacts associated with the Mona Offshore Wind Project.

18.4.3 Site specific surveys

18.4.3.1 To inform the PEIR, site-specific surveys were undertaken within the onshore ecology study area. A summary of the surveys undertaken to inform the baseline assessment is provided in Table 18.9 of this chapter below.

18.4.3.2 Phase 1 Habitat Surveys were undertaken for the onshore ecology study area between April 2022 and January 2023 to map all habitats present and identify potential for protected species to be present.

18.4.3.3 At this stage, detailed protected species surveys were limited to GCN surveys. For the purpose of the PEIR, a precautionary approach of assumed presence was taken for any habitats within the onshore ecology study area that were assessed as having potential to support protected or notable species. Detailed surveys will be undertaken in 2023 to inform the Environmental Statement.

18.4.3.4 GCN surveys were undertaken in 2022 and comprised Habitat Suitability Index (HSI) assessments and environmental Deoxyribonucleic Acid (eDNA) (presence/absence) surveys of all accessible ponds located within the onshore ecology study area. The presence of GCN within and surrounding the Mona Proposed Onshore Development Area is well known. A considerable number of historic records of GCN were confirmed by the desk study, primarily associated with the east end of the Mona Proposed Onshore Development Area, around the St Asaph Business Park to the north of the Bodelwyddan National Grid Station and to the east of the National Grid site, associated with the onshore substations for Gwynt y Môr Offshore Wind Farm and Burbo Bank Offshore Wind Farm.

Table 18.9: Summary of site survey reports.

Title	Extent of survey	Overview of survey	Date	Reference to further information
Phase 1 Habitat Surveys, including scoping for protected species surveys	Mona Proposed Onshore Development Area and adjacent habitats	A programme of Phase 1 Habitat Surveys to characterise the broad habitat types in accordance with the Handbook for Phase 1 habitat survey (JNCC, 2010). As part of the Phase 1 Habitat Surveys, habitats of potential value to legally protected or otherwise notable fauna were recorded, including any signs/sightings and subsequently used to determine the requirement for further protected species surveys.	April 2022 to January 2023	See volume 7, annex 18.2: Phase 1 Habitat Survey of the PEIR.
GCN Surveys, including HSI and eDNA	Mona Proposed Onshore Development Area plus a 250m buffer	A programme of HSI and eDNA surveys of GCN to characterise the abundance and distribution of this species within the onshore ecology study area. These will be used to inform the scope of the population size class surveys, which are proposed in 2023, to evaluate the importance of GCN populations.	April 2022 to June 2022	See volume 7 annex 18.3: Great crested newt interim survey technical report of the PEIR.

18.4.4 Baseline environment

Desktop studies

- 18.4.4.1 A full review and analysis of ecological records, identified from a desktop review of available data are detailed in volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR.
- 18.4.4.2 There are 11 internationally designated sites located within 20km of the Mona Proposed Onshore Development Area, 25 nationally designated sites within 5km, and 63 non-statutory sites, 398 ancient woodland parcels and 44 traditional orchards within 2km of the Mona Proposed Onshore Development Area.
- 18.4.4.3 There are two statutory designated sites, 25 non-statutory sites, 34 Ancient Woodland and 1 traditional orchard located within the Mona Proposed Onshore Development Area.
- 18.4.4.4 Of the statutory sites, there are two of these that lie partially within the Mona Proposed Onshore Development Area. These are Llanddulas Limestone and Gwrych Castle Wood SSSI, and Traeth Pensarn SSSI.
- 18.4.4.5 Llanddulas Limestone and Gwrych Castle Wood SSSI holds several areas of interest: limestone (calicolous) grassland, heath and woodland communities, vascular plants, bryophytes, butterflies and moths, and a winter roost for lesser horseshoe bats. Llanddulas Limestone and Gwrych Castle Wood SSSI has a wide variety of aspects, soil conditions and topography, allowing a complex range of plant communities to develop.
- 18.4.4.6 Traeth Pensarn SSSI is of special botanical interest for its vegetated shingle beach plant communities.
- 18.4.4.7 No Local Nature Reserves (LNRs) are located within 2km of the Mona Proposed Onshore Development Area.
- 18.4.4.8 There are 63 non-statutory Local Wildlife Sites (LWS) within a 2km buffer of the Mona Proposed Onshore Development Area. Of these, 25 LWSs are located within the Mona Proposed Onshore Development Area.
- 18.4.4.9 Data was also obtained from Cofnod for records of protected or otherwise notable flora, terrestrial invertebrates, fish, amphibians, reptiles, and mammals within and surrounding the Mona Proposed Onshore Development Area.
- 18.4.4.10 The key findings of the Cofnod data search are the presence of protected sites and habitats within the Mona Proposed Onshore Development Area, a dense breeding population of GCN, and large lesser horseshoe bat roosts. A summary of the key records for protected and notable species is summarised in volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR.

Site specific surveys

- 18.4.4.11 The onshore ecology study area comprised a range of habitat types, including habitats of importance such as ancient woodland, semi-natural broadleaved woodland, coastal vegetated shingle, species-rich hedgerows, mature broadleaved trees, and waterbodies.

- 18.4.4.12 The habitats within the onshore ecology study area had the potential to support a range of protected species, including: badgers *Meles*, bats *Chiroptera spp*, fish *Piscus spp.*, and eel *Anguilliformes spp*, great crested newts, hazel dormice *Muscardinus avellanarius*, invertebrates, otter *Lutra*, reptile, water vole *Arvicola amphibius*, and white clawed crayfish *Austropotamobius pallipes*.
- 18.4.4.13 The results of the eDNA analysis confirmed the presence of GCN in an additional two ponds located close to those highlighted in the desk study (i.e. P064 and P084), as well as two ponds in the north half of the Mona Proposed Onshore Development Area, where the desk study reported no historic records of great crested newt (ponds P021 near Gopa Wood, and P111 to the north of the B5381). Only P111 is located within 250m of the Mona Proposed Onshore Development Area.
- 18.4.4.14 As stated in volume 7, annex 18.3: Great crested newt interim survey technical report, due to restrictions on land access, it was not possible to complete an HSI assessment and eDNA analysis of all waterbodies within the onshore ecology study area (i.e. those highlighted as ‘not surveyed’) before the end of the survey season (i.e. before the end of June 2022). However, considering the results of the desk study and field surveys, the potential for GCN to be present within the onshore ecology study area, cannot be discounted, and further surveys will be undertaken during 2023 to inform the Environmental Statement and appropriate mitigation measures.
- 18.4.4.15 For the purpose of the PEIR, a precautionary approach of assumed presence will be taken for any waterbodies within the field survey buffer zone that were not confirmed to be dry or absent, and for which negative eDNA results were not obtained in 2022.

18.4.5 Designated sites

- 18.4.5.1 Designated sites identified within the onshore ecology study area are described below in Table 18.10 of this chapter.

Table 18.10: Designated sites and relevant qualifying interests for onshore ecology.

Designated site	Closest distance to the Mona Proposed Onshore Development Area (km)	Relevant qualifying interest
Llanddulas Limestone and Gwrych Castle Wood SSSI	0.0	This site is of special interest for limestone (calicolous) grassland, heath, and woodland communities, the first two of which comprise some of the largest examples in Clwyd, as well as its populations of vascular plants; bryophytes; butterflies; moths and a winter roost of lesser horseshoe bat.
Traeth Pensarn SSSI	0.0	This site is of special interest for its vegetated shingle beach plant communities. The site support both ‘pioneer’ and ‘stable vegetated’ shingle, extending approximately 1.7km along the Pensarn beach, from the promenade westward towards Llanddulas.

Designated site	Closest distance to the Mona Proposed Onshore Development Area (km)	Relevant qualifying interest
Coedy Gopa SSSI	0.9	The site occupies a prominent Carboniferous Limestone hill, there is a disused stone quarry in the southeast corner. The many natural cave and underground mine workings provide opportunities for bat roosting area including a large hibernaculum of lesser horseshoe bats <i>Rhinolophus hipposideros</i> , and smaller numbers of Natterer's bat <i>Myotis nattereri</i> and Daubenton's bat <i>Myotis daubentonii</i> .
Coedwigoedd Dyffryn Elwy/Elwy Valley Woods SAC	1.5	Elwy Valley Woods is one of three sites selected to represent Tilio-Acerion Forest across its geographic range on the Carboniferous limestone of north Wales and is an example of the habitat with an outstanding lower-plant flora. The canopy is quite varied: ash <i>Fraxinus excelsior</i> is the commonest tree, but there is also occasional small-leaved lime <i>Tilia cordata</i> and wild service-tree <i>Sorbus torminalis</i> . There is a rich, calcicolous understorey and ground flora, and rare bryophytes include <i>Bryum canariense</i> , <i>Cololejeunea rossettiana</i> , <i>Plagiochila britannica</i> , <i>Platydictya confervoides</i> and <i>Isothecium striatulum</i> . The woods have developed along steep valley-sides and ravines that are also important for their cave systems and Pleistocene fossil mammal assemblages.
Coedydd ac Ogofau Elwy a Meirchion SSSI	1.9	The site is of special interest for its semi-natural broadleaved woodland, its rare flowering plant assemblage, its scarce bryophyte assemblage, and the geological and palaeontological interest of Galltfaenan, Cefn and Pontnewydd Caves. The caves also provide roosting habitat for Natterer's bat, brown long-eared bat <i>Plecotus auritus</i> , common pipistrelles <i>Pipistrellus</i> , and lesser horseshoe bats.

2018), the assessment of the likely ecological effects of the Mona Offshore Wind Project and identification of IEFs was evaluated.

18.4.6.2 IEFs comprise habitats or species identified through the ecology desk study and field surveys that are of conservation concern and that could be significantly affected by the Mona Offshore Wind Project and are species of high ecological value, present within the ZOI of the Mona Proposed Onshore Development Area, that any potential effect upon them as a result of the Mona Offshore Wind Project would be considered to be significant.

18.4.6.3 Sites, habitats, species populations and assemblages within the onshore ecology study area have been evaluated with reference to their importance in terms of biodiversity conservation and the need to conserve representative areas of habitats and genetic diversity of species populations

18.4.6.4 Where appropriate, reference is also made to social benefits that species and habitats deliver (e.g. relating to enjoyment of flora and fauna by the public) and economic benefits that they provide, but only where these are deemed material considerations

18.4.6.5 For the purposes of this assessment, sites, habitats, and species populations and assemblages have been valued using the following scale (as summarised in Table 18.11 of this chapter):

- International
- National (Wales)
- Regional (North Wales)
- County
- Local
- Negligible.

18.4.6.6 Sites, habitats, or species are considered to be IEFs if they meet at least the county level of importance. It is considered that only under exceptional circumstances would effects on features of less than county level importance be significant.

18.4.6.7 The valuation of sites also takes full account of existing value systems such as SSSIs and LWS designations. Judgement is required for the valuation of sites of less than county value.

18.4.6.8 Populations are valued based on their size, recognised status, such as UK or county Biodiversity Action Plan (BAP) status and legal protection status. In assigning values to species populations, it is important to consider the status of the species in terms of any legal protection to which it is subject. However, it is also important to consider other factors such as its distribution, rarity, population trends, and the size of the population which would be affected. For example, whilst the GCN is protected under European law, and therefore conservation of the species is at the international level of importance, this does not mean that every population of GCN is internationally important. It is important to consider the population in its context. Thus, in assigning values to species, the geographic scale at which they are important has been considered. The assessments of value rely on the professional opinion and judgement of experienced ecologists.

18.4.6.9 Due regard must also be paid to the legal protection afforded to such species in the development of measures adopted as part of the Mona Offshore Wind Project. For

18.4.6 Important Ecological Features

18.4.6.1 In accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for ecological impact assessment in the UK and Ireland (CIEEM,

- European protected species there is a requirement that the scheme should not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 18.4.6.10 Various criteria are used to evaluate the importance of species assemblages such as SSSI selection criteria.
- 18.4.6.11 Assessing IEF's values requires consideration of both existing and future predicted baseline conditions and therefore, the description and valuation of ecological features takes account of any likely changes, including for example, trends in the population size or distribution of species, likely changes to the extent of habitats and the effects of other proposed developments or land-use changes.
- 18.4.6.12 Based on the information presented in section 18.4.4 and the above-described criteria in the current section, the following IEF's will be taken forward for assessment of significance. The habitats and species taken forward to assessment of significance along with the rationale for inclusion are presented in Table 18.11.

Geographic Context of Importance	Example / Description
Local	Habitats and species and legally protected species that based on their extent, population size, quality etc are determined to be at a lesser level of importance than the geographic contexts above. Common and widespread semi-natural habitats occurring in proportions greater than may be expected in the local context. Common and widespread native species occurring in numbers greater than may be expected in the local context.
Negligible	Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area. Areas of heavily modified or managed land uses (e.g. hard standing used for car parking, as roads etc.)

Table 18.11: Summary of Important Ecological Features assessment criteria.

Geographic Context of Importance	Example / Description
International or European	European sites including SACs, candidate SACs and Sites of Community Importance (SCI), Areas of habitat or populations of species which meet the published selection criteria based on discussions with NRW and field data collected to inform the Environmental Statement for designation as a SAC, but which are not themselves currently designated at this level.
National	A nationally designated site including SSSIs and National Nature Reserves (NNRs). Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated based on field data collected, and in agreement with NRW. Environment (Wales) Act 2016 Section 7 Priority species & Priority habitats and legally protected species that are not addressed directly in Part 2 of the "Guidelines for Selection of Biological SSSIs" but can be determined to be of national importance. Large areas of priority habitats listed on Annex 1 of the Habitats Directive and smaller areas that are essential to maintain the viability of that ecological resource. Areas of Ancient Woodland (e.g. woodland listed within the Ancient Woodland Inventory).
Regional	Regionally occurring populations of priority species will be of regional importance in the context of published information on population size and distribution. Large areas of modified or degraded priority habitats, which are important in a regional context.
County	LNRs and Non-statutory designated sites. Areas which based on field data collected to inform the Environmental Statement meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.

Table 18.12: Important Ecological Features.

IEF	Importance Legislation and Policy	Importance – Mona Proposed Onshore Development Area	Environmental changes and significant effects	ZOI beyond Mona Proposed Onshore Development Area	Relevant assessment criteria and scoped in justification
Ancient Woodland	National	National	Indirect disturbance because of Horizontal Directional Drilling (HDD) operations under the Ancient Woodland Parcels within the Mona Proposed Onshore Development Area. There is a low risk of bentonite breakout associated with HDD.	Mona Proposed Onshore Development Area and 15m beyond construction/ maintenance areas for the HDD launch and receptor areas.	PPW (Welsh Government, 2021a) recognises the significant value of ancient woodlands and makes provision for their protection against damage or loss. Parcels of ancient woodland are within the Mona Proposed Onshore Development Area as detailed volume 7, annex 18.1: Terrestrial ecology desk study of the PEIR (see Figure 3.4).
Coastal Vegetated Shingle	National	National	Indirect disturbance as a consequence of constructing/using temporary access to the Llanddulas beach. Access needed to facilitate HDD drilling operations at landfall within the Mona Proposed Onshore Development Area	Mona Proposed Onshore Development Area and a buffer zone, the extent of the buffer will be agreed with the EWG. The buffer will be beyond the construction/ maintenance areas for the HDD launch and receptor area.	Construction and decommissioning of the Mona Offshore Wind Project could lead to damage / habitat loss within the SSSI.

IEF	Importance Legislation and Policy	Importance – Mona Proposed Onshore Development Area	Environmental changes and significant effects	ZOI beyond Mona Proposed Onshore Development Area	Relevant assessment criteria and scoped in justification
Waterbodies (including ponds, ditches, and streams)	District	Local	Habitat loss/Reduction in habitat quality as a result of pollution incidents	Within the Mona Proposed Onshore Development Area. Any river catchment which is within the Mona Proposed Onshore Development Area.	There are two ordinary watercourses present within the Mona Proposed Onshore Development Area, which convey flows to the north, converging with the Nant-y-Faenol some 950m to the north of the Mona Proposed Onshore Development Area. Nant-y- Faenol is a tributary of the River Clywd and is classified as a Main River to the north of the B5381. There are several additional ordinary watercourses present within the 1km buffer zone which eventually drain to the River Elwy/River Clwyd. Several ponds are also present within the Mona Proposed Onshore Development Area. The watercourses have potential to support water vole and otter. The ponds have potential to support GCN.
Hedgerows	District	District	Habitat loss and temporary damage /fragmentation	Within the Mona Proposed Onshore Development Area	There are a number of hedgerows throughout the Mona Proposed Onshore Development Area. Some of these hedgerows have been recorded as species rich and have the potential to support species such as nesting dormice and foraging bats.

IEF	Importance Legislation and Policy	Importance – Mona Proposed Onshore Development Area	Environmental changes and significant effects	ZOI beyond Mona Proposed Onshore Development Area	Relevant assessment criteria and scoped in justification
Mature broadleaved standards	District	District	Habitat loss and temporary damage	Within the Mona Proposed Onshore Development Area	There are a number of mature standards present throughout the Mona Proposed Onshore Development Area. Many of these trees have been identified as having features that could support roosting bats and some were identified as veteran trees.
GCN	International	County	Direct loss and temporary damage to terrestrial habitats and breeding ponds	50m beyond the Mona Proposed Onshore Development Area	The presence of great crested newt within and surrounding the Mona Proposed Onshore Development Area has been previously documented. A considerable number of historic records of great crested newt were confirmed by the desk study, primarily associated with the east end of the Mona Proposed Onshore Development Area, around the St Asaph Business Park to the north of the Bodelwyddan National Grid Station and to the east of the National Grid site, associated with the onshore substations for Gwynt y Môr Offshore Wind Farm and Burbo Bank Offshore Wind Farm.

Mona Offshore Wind Project does not come forward, an assessment of the future baseline conditions has been carried out and is described within this section.

18.4.7.2 There are no forthcoming developments with planning permission or consent within the Mona Proposed Onshore Development Area and, on this basis, there is no likely change to baseline conditions for the purposes of assessment.

18.4.7.3 In the absence of development, it would be anticipated that intensive arable farming and sheep grazing of improved grassland would continue. The small blocks of woodland, scrub, ponds, watercourses, and field boundaries would remain. There is potential risk to coastal habitats because of climate change. It would also be expected that, without significant intervention, biodiversity in the UK would continue to decline. Since 1970 there has been a 13% decline in UK biodiversity (House of Commons Environmental Audit Committee Biodiversity in the UK 2021).

18.4.8 Data limitations

18.4.8.1 Access for surveys was possible for 855 hectares (ha) (83%) of the onshore ecology study area, where the Phase 1 habitat and scoping surveys were undertaken. The areas not available for survey at the time of writing will be surveyed, where possible, and reported in the Environmental Statement.

18.4.8.2 Phase 1 habitat surveys in Section 8 and Section 9 (see Figure 18.1) were undertaken in winter months, and under snowy conditions when surveys are sub-optimal. Botanical surveys will be undertaken in 2023 for all necessary land parcels to clarify and provide more detailed phase 1 survey habitat results. In addition, habitat parcels with potential to provide botanical diversity will have National Vegetation Classification (NVC) surveys undertaken by qualified botanists.

18.4.8.3 The current assessment does not include detailed surveys for protected species including bats, badgers, hazel dormice, otters, water voles and reptiles. These surveys will be undertaken in 2023 and included for assessment in the Environmental Statement.

18.5 Impact assessment methodology

18.5.1 Overview

18.5.1.1 The onshore ecology impact assessment has followed the methodology set out in volume 1, chapter 5: EIA methodology of the PEIR. Specific to the onshore ecology impact assessment, the following guidance documents have also been considered:

- Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase I: Expectations for pre-application baseline data for designated nature conservation and landscape receptors to support offshore wind applications (Natural England, 2022).
- Guidelines for ecological impact assessment in the UK and Ireland (CIEEM, 2018).

18.5.1.2 In addition, the Onshore Ecology impact assessment has considered the legislative framework as defined by:

- The Conservation of Habitats and Species Regulations 2017 (as amended)

18.4.7 Future baseline scenario

18.4.7.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires that ‘an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge’ is included within the Environmental Statement. In the event that

- The Wildlife and Countryside Act 1981 (as amended)
- Section 7 of the Environment (Wales) Act 2016.

18.5.2 Impact assessment criteria

18.5.2.1 The criteria for determining the significance of effects is a two-stage process that involves defining the magnitude of the impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in volume 1, chapter 5: EIA methodology of the PEIR.

18.5.2.2 This assessment process takes account of Guidelines for ecological impact assessment in the UK and Ireland (CIEEM, 2018). The criteria for defining magnitude in this chapter are outlined in Table 18.13 below.

Table 18.13: Definition of terms relating to the magnitude of an impact.

Magnitude of impact	Definition
High	A change in the size or extent of distribution of the habitat or the species (flora or fauna) population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short to long term and to alter the long-term viability of the population and/or the integrity of the protected site. Impacts felt long-term. Impacts predicted to be reversed in the long-term (i.e. more than five years) following cessation of the project activity.
Medium	A change in the size or extent of distribution of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site that occurs in the short and long-term, but which is not predicted to alter the long-term viability of the population and/or the integrity of the protected site. Impacts felt medium to long term. Impacts predicted to be reversed in the medium-term (i.e. no more than five years) following cessation of the project activity.
Low	A change in the size or extent of distribution of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long-term harm to the feature/population. Impacts present for a short to medium duration. Impacts predicted to be reversed in the short-term (i.e. no more than one year) following cessation of the project activity.
Negligible	Very slight change of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site. Impacts present for a short duration. Impacts predicted to be reversed rapidly (i.e. no more than circa six months) following cessation of the project related activity.
No change	No loss or alteration of species (flora or fauna) characteristics, features, or elements; no observable impact either adverse or beneficial.

18.5.2.3 The criteria for defining recoverability and sensitivity in this chapter are outlined in Table 18.14 and Table 18.15 below. The definition of sensitivity considers the vulnerability and recoverability of a receptor as well as considering the conservation importance of each receptor. Recoverability is defined as *'The ability of a habitat, community or individual (or individual colony) of species to redress damage sustained as a result of an external factor'* (adapted from Hiscock et al., 1999).

Table 18.14: Definition of terms relating to the sensitivity of the receptor.

Sensitivity	Definition
Very High	Habitats or species that have high or very high conservation importance, high vulnerability to impact and have no ability to recover
	Habitats or species that have very high conservation importance, high vulnerability to impact and have low recoverability
High	Habitats or species that have high or very high conservation importance, medium or high vulnerability to impact and has medium recoverability
	Habitats or species that have high conservation importance, medium vulnerability to impact and has low recoverability
	Habitats or species that have medium conservation importance, high vulnerability to impact and has low recoverability
Medium	Habitats or species that have conservation importance, low vulnerability to impact and has low to medium recoverability
	Habitats or species that have medium conservation importance, low, medium, or high vulnerability to impact and has medium recoverability
Low	Habitats or species that have medium conservation importance, medium vulnerability to impact and high recoverability
	Habitats or species that have low conservation importance, medium or high vulnerability to impact and medium or high recoverability
Negligible	Habitats or species that have low conservation importance, low vulnerability to impact and medium or high recoverability. Habitats or species that not vulnerable to impacts.

Table 18.15: Definition of recoverability.

Recoverability	Definition
Very high	Full recovery is likely within a few weeks or at most six months.
High	Full recovery will occur but will take many months (or more likely years) but should be complete within about five years.
Moderate	Only partial recovery is likely within five years and full recovery is likely to take up to 10 years.
Low	Only partial recovery is likely within 10 years and full recovery is likely to take up to 25 years.
None	Recovery is not possible

18.5.2.4 It should be noted that high vulnerability and/or low recoverability are not necessarily linked with high conservation importance within a particular impact. A receptor could be categorised as being of high conservation importance (e.g. an interest feature of a SAC or SSSI) but have a low or negligible physical/ecological vulnerability to an effect and vice versa. Determination of sensitivity takes these differing aspects into consideration.

18.5.2.5 The conservation importance of identified ecological receptors is based on the population from which individuals are predicted to be drawn. This reflects current understanding of the movements of species, with site-based protection (e.g. SACs) generally limited to specific periods of the year (e.g. the breeding/hibernation season).

18.5.2.6 Therefore, conservation importance can vary through the year depending on the relative sizes of the number of individuals predicted to be at risk of impact and the population from which they are estimated to be drawn. Conservation importance also considers species of national importance, regional importance, and local importance, for which further criteria are defined in Table 18.16.

Table 18.16: Definition of conservation importance of the receptor.

Conservation importance	Definition
Very High	Species of international/European importance: <ul style="list-style-type: none"> Cited interest feature of SAC.
High	Species of national importance: <ul style="list-style-type: none"> Species that contribute to the assemblage of a SSSI Species listed on Schedule 1 of the Wildlife and Countryside Act (1981) as amended.
Medium	Species of regional importance: <ul style="list-style-type: none"> Legally protected or noted species BAP species.
Low	Species of local importance: <ul style="list-style-type: none"> Species listed on Schedule 5 of the Wildlife and Countryside Act (1981) as amended.
Negligible	<ul style="list-style-type: none"> All species of lowest conservation importance.

18.5.2.7 The significance of the effect upon onshore ecology is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in Table 18.17. Where a range of significance of effect is presented in Table 18.17, the final assessment for each effect is based upon expert judgement.

18.5.2.8 For the purposes of this assessment, any effects with a significance level of minor or less have been concluded to be not significant in terms of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

Table 18.17: Matrix used for the assessment of the significance of the effect.

Sensitivity of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor or Moderate	Moderate or Major	Major

Sensitivity of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Very High	No change	Minor	Moderate or Major	Major	Major

18.5.3 Designated sites

18.5.3.1 Where National Site Network sites (i.e. internationally designated sites, including SACs, SPAs and Ramsar sites) are considered, this chapter summarises the assessments made on the interest features of internationally designated sites as described within section 18.4.5 of this chapter.

18.5.3.2 With respect to nationally and locally designated sites, where these sites fall within the boundaries of an internationally designated site (e.g. SSSIs which have not already been assessed within the Information to Support Appropriate Assessment), only the international site has been taken forward for assessment. This is because potential effects on the integrity and conservation status of the nationally designated site are assumed to be inherent within the assessment of the internationally designated site (i.e. a separate assessment for the national site is not undertaken).

18.5.3.3 The Information to Support Appropriate Assessment (ISAA) has been prepared in accordance with Advice Note Ten: Habitats Regulations Assessment Relevant to Nationally Significant Infrastructure Projects (Planning Inspectorate, 2022). A draft of the ISAA will be submitted in conjunction with the PEIR.

18.6 Key parameters for assessment

18.6.1 Maximum design scenario

18.6.1.1 The MDSs identified in Table 18.18 have been selected as those having the potential to result in the greatest effect on an identified ecological receptor. These scenarios have been selected from the Design of the Mona Offshore Wind Project Envelope provided in volume 1, chapter 3: Project description of the PEIR. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Design of the Mona Offshore Wind Project Envelope (e.g. different infrastructure layout), to that assessed here be taken forward in the final design scheme.

Table 18.18: Maximum design scenario considered for the assessment of potential impacts on onshore ecology.

^a C=construction, O=operational and maintenance, D=decommissioning

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
The impact of temporary and permanent habitat loss during construction, operations and maintenance and decommissioning of the Mona Proposed Onshore Development Area	✓	×	✓	<p>Construction phase</p> <p><u>Open cut trenching in the intertidal area between MLWS and MHWS:</u></p> <ul style="list-style-type: none"> The area required for the trenches is 18,000m² based on up to four trenches each measuring 3m wide and 1.5km long. A total of 54,000m³ of material will be excavated from the trenches based on the area and the 3m depth required for the trenches). The working area required to undertake the open trenching is 25m wide and will extend along the 1.5km length. The working area is provided on both sides of the trench and results in a total working area of 318,000m². <p><u>Trenchless techniques (e.g. HDD, thrust bore, or other trenchless techniques) may be adopted pull the offshore export cable from within the intertidal region between MLWS and MHWS to meet the onshore export cable at the Transition Joint Bays (TJB) approximately 600 m in-land:</u></p> <ul style="list-style-type: none"> Up to four HDD exit pits will be required with dimensions of approximately 80 m x 20 m and a depth of 2.5 m The maximum burial depth of the HDD will be 25m between MLWS and MHWS; the maximum burial depth landward of MHWS is approximately 30m. The HDD working compound area measures up to 150m x 100m and will be located on agricultural land. The maximum duration for works on all four exit pits will be eight weeks broken down into two x four-week periods in each of two seasons Major HDD works may require 24-hours works dependent upon requirements HDD works at landfall will be nine months in duration The plant list for the HDD works includes: <ul style="list-style-type: none"> Mobile crane Articulated trucks CAT 320 excavators Diesel compressors Diesel generators in operation 24-hours a day Concrete pumps A tracked drilling rig will be used and will operate 24-hours a day 	<p>Construction and decommissioning within the Mona Proposed Onshore Development Area may result in the temporary (e.g. onshore export cable) or permanent (e.g. onshore substation) loss of habitat, which may support protected or notable species.</p> <p>The use of open cut trenching at the landfall represents the greatest temporary habitat loss to the intertidal zone. The maximum area required for the construction of the landfall and the associated infrastructure represents the maximum area of habitat that will be temporarily lost during the nine-month construction of the Mona Offshore Wind Project.</p> <p>The use of open cut trenching methods along the onshore cable route and 400kV grid connection cable route represent the greatest potential for permanent and temporary damage to habitats. The maximum area required for the construction of the Onshore Cable Corridor, 400kV Grid Connection Cable, and the associated infrastructure represents the maximum area of habitat that will be temporarily lost during the 33-month construction of the Mona Offshore Wind Project.</p> <p>The maximum area required for the construction of the Onshore Substation and permanent access road represents the maximum area of habitat that will be lost during the 35-year lifespan of the Mona Offshore Wind Project.</p> <p>The Onshore Cable and 400kV Grid Connection Cable shall remain in situ in decommissioning phase with only the link boxes needing removal. The area of the link boxes (plus a temporary working area) represents the maximum area of habitat that will be temporarily lost during decommissioning of the Mona Offshore Wind Project.</p>
The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Mona Proposed Onshore Development Area	✓	✓	✓	<p><u>Open cut trenching along the Onshore Cable Corridor:</u></p> <ul style="list-style-type: none"> The area of the permanent Onshore Cable Corridor is up to 540,000m² based on a corridor measuring 30m wide and 18km in length. The temporary working corridor requires an additional 70m wide corridor (making the total width of the Onshore Cable Corridor (temporary and permanent requirements) 100m wide representing an area up to 1,800,000m². There are up to four cable trenches within the permanent Onshore Cable Corridor, each trench measures 2.5m wide at the top, 1.5m at the base and the depth is 1.8m. There is one haul road within the Onshore Cable Corridor for the entire length of the corridor; it is 6m wide excluding passing places. It will be constructed using imported engineered granular fill with geotextile style layers with a nominal thickness of 400mm and a maximum thickness of up to 1000mm. The maximum number of joint bays along the Onshore Cable Corridor is 96 (based on a minimum distance of 750m between each joint bay). The area of each joint bay is up to 200m² and each joint bay is 2m deep; the volume of material excavated per joint bay is 400m³ (a total of 38,400m³ of material excavated for the joint bays). 	<p>Construction, operations, and maintenance and decommissioning of the Mona Proposed Onshore Development Area may result in the disturbance of habitat (e.g. movement, noise, light spill, vibration), which may support protected or notable species.</p> <p>The use of open cut trenching at the landfall represents the greatest potential for disturbance. The use of open cut trenching methods along the onshore cable route and 400kV grid connection cable route represent the greatest potential for disturbance. The maximum area required for the construction of the Onshore Cable Corridor, 400kV Grid Connection Cable, the Onshore Substation, the permanent access road, and the associated infrastructure represents the maximum area that will be subject to disturbance to protected or notable species during the 33-month construction period.</p> <p>Maintenance during the operational phase represents potential for disturbance.</p> <p>During the decommissioning phase, the Onshore Cable Corridor and 400kV grid connection cable will remain in situ; the link boxes, Onshore Substation and permanent access road will be removed. These areas (plus the temporary area</p>

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> The maximum number of link boxes along the Onshore Cable Corridor is 96 (based on a distance of 750m between each link box). The area of each link box is up to 6m² and each link box is 1m deep; the volume of material excavated per link box is 6m³ (a total of 576m³ of material excavated for the link boxes). Works are expected to take 33-months to complete. <p><u>Open cut trenching along the 400kV Grid Connection Cable Corridor:</u></p> <ul style="list-style-type: none"> The area of the permanent 400kV Grid Connection Cable Corridor is up to 48,000m² based on a corridor measuring 16m wide and 3km in length. The temporary working corridor requires an additional 44m wide corridor (making the total width of the route to grid connection (temporary and permanent requirements) 60m wide representing a total area of habitats that will be subject to temporary works of up to 180,000m². 	required to facilitate decommissioning) represent the maximum area that will be subject to disturbance during decommissioning.
The impact of habitat fragmentation and species isolation during construction, operations and maintenance and decommissioning of the Mona Proposed Onshore Development Area.	✓	✓	✓	<ul style="list-style-type: none"> There are up to two cable trenches within the permanent 400kV Grid Connection Cable corridor, each trench measures up to 2.5m wide at the top, 1.5m at the base and the depth is 1.8m. The maximum number of joint bays along the 400kV Grid Connection Cable corridor is 10 (based on a minimum distance of 500m between each joint bay). The area of each joint bay is up to 200m² and each joint bay is 2m deep; the volume of material excavated per joint bay is 400m³ (a total of 4,000m³ of material excavated for the joint bays). The maximum number of link boxes along the 400kV Grid Connection Cable Corridor is 10 (based on a distance of 500m between each link box). The area of each link box is up to 6m² and each link box is 1m deep; the volume of material excavated per link box is 6m³ (a total of 60m³ of material excavated for the link boxes). There is one haul road within the 400kV Grid Connection Cable Corridor for the entire length of the corridor; it is 6m wide excluding passing places. It will be constructed using imported engineered granular fill with geotextile style layers with a nominal thickness of 400mm and a maximum thickness of up to 1000mm. Works are expected to take 33-months to complete. <p><u>Trenchless techniques:</u></p> <ul style="list-style-type: none"> The maximum number of HDD locations along the Onshore Cable Corridor and 400kV Grid Connection Cable Corridor is 72. Primary HDD operations will require a compound, these will measure up to 150m x 100m. Secondary HDDs will require a smaller compound (measuring up to 30m x 20m) and will be located within the 100m temporary construction corridor. <p><u>Construction compounds:</u></p> <ul style="list-style-type: none"> Up to two primary construction compounds (each measuring 150m x 150m) and up to 10 secondary construction compounds (each measuring 150m x 100m) will be located along the Onshore Cable Corridor. The compounds will be located within the Mona Proposed Onshore Development Area. Soils will be removed and stored; and crushed stone or other suitable material will be used across the entire area to create hardstanding. These will be in place for the duration of the works (33-months). <p><u>Onshore Substation:</u></p> <ul style="list-style-type: none"> The maximum footprint of the Onshore Substation will measure up to 125,000m² and will be located with the Onshore Substation zone: this area will include the substation buildings and the earthworks to create the platform. The Onshore Substation will comprise up to four buildings. The maximum dimensions of the main building are 20m high, 40m wide and 90m long Access to the substation will be via a new permanent access road measuring up to 8m wide and up to 1.2km in length. A construction compound will be required to support the construction of the Onshore Substation and will extend up to 250,000m². The maximum search area for landscape planting around the Onshore Substation is 469,733m². This area includes the footprint of the Onshore Substation, landscape planting and the attenuation pond. Works are expected to take 33-months to complete. 	<p>Construction, Operations, and maintenance and decommissioning of the Mona Proposed Onshore Development Area may result in the fragmentation of habitat, which may limit population movements and isolate protected or notable species.</p> <p>The use of open cut trenching methods along the onshore cable route and 400kV grid connection cable route represent the greatest potential for habitat fragmentation along the Onshore Cable Corridor, and the 440kV Cable Corridor. These corridors will represent a potential temporary linear barrier along the corridor route.</p> <p>The maximum area of the substation represents the greatest potential for permanent fragmentation of habitats during the operations and maintenance phase of the project.</p>

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
The impact of pollution caused by accidental spills/contaminant release during construction and decommissioning of the Mona Proposed Onshore Development Area	✓	×	✓	<p>Construction phase</p> <p><u>Construction compounds:</u></p> <ul style="list-style-type: none"> Up to two primary construction compounds (each measuring 150m x 150m) and up to 10 secondary construction compounds (each measuring 150m x 100m) will be located along the Onshore Cable Corridor. The compounds will be located within the Mona Proposed Onshore Development Area. Soil will be removed and stored; crushed stone or other suitable materials will be used across the entire area to create hardstanding. A construction compound will be required to support the construction of the Onshore Substation extending to 250,000m². <p><u>HDD compounds</u></p> <ul style="list-style-type: none"> Primary HDD operations will require a compound, these will measure up to 150m x 100m. Secondary HDDs will require a smaller compound (measuring up to 30 x 20m) and will be located within the 100m temporary construction corridor. <p>Decommissioning phase</p> <ul style="list-style-type: none"> The onshore cable and 400kV Grid Connection Cable will remain in situ but the link boxes will be removed. The Onshore Substation and permanent access road will be removed. 	<p>Activities required for the construction and decommissioning of the Mona Proposed Onshore Development Area may result in accidental spills/contaminant release which could adversely affect protected or notable habitats and species.</p> <p>Fuels and chemicals will be stored at construction compounds and HDD compounds. The maximum number of construction compounds and HDD compounds represents the maximum MDS scenario for the risk of spillages.</p>
The impact of spreading Invasive and Non-native Species (INNS) during construction and decommissioning of the Mona Proposed Onshore Development Area	✓	×	✓	<p>Construction Phase</p> <p><u>Open cut trenching along the Onshore Cable Corridor:</u></p> <ul style="list-style-type: none"> The area of the permanent Onshore Cable Corridor is up to 540,000m² based on a corridor measuring 30m wide and 18km in length. The temporary working corridor requires an additional 70m wide corridor (making the total width of the Onshore Cable Corridor (temporary and permanent requirements) 100m wide representing a total area of habitats that will be subject to temporary works of 1,800,000m². This corridor will contain four trenches. There is one haul road within the Onshore Cable Corridor along the length of the corridor; it is 6m wide excluding passing places. This equates to a total area of habitats that will be subject to temporary works of 108,000m². Therefore, open cut trenching represents a total area of temporary works along the onshore cable corridor of 1,908,000m². <p><u>Open cut trenching along the 400kV Grid Connection Cable Corridor:</u></p> <ul style="list-style-type: none"> The area of the permanent 400kV Grid Connection Cable Corridor is up to 48,000m² based on a corridor measuring 16m wide and 3km in length. The temporary working corridor requires an additional 44m wide corridor (making the total width of the route to grid connection (temporary and permanent requirements) 60m wide representing a total area that will be subject to temporary works of up to 180,000m². This corridor will contain two trenches. There is one haul road within the 400kV Grid Connection Cable Corridor along the length of the corridor; it is 6m wide excluding passing places. This equates to a total area of works that will be subject to temporary loss of 96,000m². Therefore, open cut trenching represents a total area of temporary works along the 400kV grid connection cable corridor of 276,000m². <p><u>Trenchless techniques:</u></p> <ul style="list-style-type: none"> The maximum number of HDD locations along the Onshore Cable Corridor and 400kV Grid Connection Cable Corridor is 72. Primary HDD operations will require a compound, these will measure up to 150m x 100m. Secondary HDDs will require a smaller compound (measuring up to 30m x 20m) and will be located within the 100m temporary construction corridor. <p><u>Construction Compounds:</u></p> <ul style="list-style-type: none"> Up to two primary construction compounds (each measuring 150m x 150m) and up to 10 secondary construction compounds (each measuring 150m x 100m) will be located along the Onshore Cable Corridor. The compounds will be located within the Mona Proposed Onshore Development Area. Soil will be removed and stored, crushed stone or other suitable materials will be used across the entire area to create hardstanding. 	<p>Construction and decommissioning of the Mona Proposed Onshore Development Area may cause the spread of INNS, which could adversely affect the status of native protected or notable habitats and species.</p> <p>The use of open cut trenching methods along the onshore cable route and 400kV grid connection cable route represent the greatest potential for spreading INNS. The maximum area required for the construction of the Onshore Cable Corridor, 400kV Grid Connection Cable, and the associated infrastructure represents the maximum area that INNS can be spread.</p> <p>The maximum area required for the construction of the Onshore Substation and permanent access road represents the maximum area that INNS can be spread.</p> <p>The Onshore Cable Corridor and 400kV grid connection cable shall remain in situ in decommissioning phase with only the link boxes needing removal. The area of the link boxes (plus a temporary working area) represents the maximum area that INNS can be spread.</p>

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<p><u>Onshore Substation</u></p> <ul style="list-style-type: none"> The maximum footprint of the Onshore Substation will measure up to 125,000m² and will be located within the Onshore Substation zone; this area will include the substation buildings and the earthworks to create the platform. Access to the substation will be via a new permanent access road measuring up to 8m wide and 1.2km in length. The maximum search area for landscape planting around the Onshore Substation is 469,732.83m². This area includes the footprint of the Onshore Substation, landscape planting and the attenuation pond. A construction compound will be required to support the construction of the Onshore Substation extending to 250,000m². <p>Decommissioning phase</p> <ul style="list-style-type: none"> The onshore cable and 400kV Grid Connection Cable will remain in situ but the link boxes will be removed. The onshore substation and permanent access road will be removed. 	

18.6.2 Impacts scoped out of the assessment

18.6.2.1 On the basis of the baseline environment and the description of development outlined in volume 1, chapter 3: Project description of the PEIR, a number of impacts are proposed to be scoped out of the assessment for onshore ecology. These impacts are outlined, together with a justification for scoping them out, in Table 18.19.

Table 18.19: Impacts scoped out of the assessment for onshore ecology.

Potential impact	Justification
The impact of temporary and permanent habitat loss on protected habitats and species during operation and maintenance of the Mona Proposed Onshore Development Area.	Activities associated with the operations and maintenance of the Mona Proposed Onshore Development Area are unlikely to result in the temporary or permanent loss of large areas of habitat. Therefore, the potential impact on protected habitats and species arising from the temporary and permanent habitat loss during operations and maintenance of the Mona Proposed Onshore Development Area is unlikely to be significant and is proposed to be scoped out of the assessment for onshore ecology.
The impact of pollution caused by accidental spills/contaminant release on protected habitats and species during operations and maintenance of the Mona Proposed Onshore Development Area.	Activities associated with the operations and maintenance of the Mona Proposed Onshore Development Area are unlikely to result in accidental spills/contaminant release. Notwithstanding, best practice measures to be incorporated into a Code of Construction Practice (CoCP) which would include measures to avoid or minimise the significance of any accidental pollution event. Therefore, the potential impact of pollution on protected habitats and species arising from accidental spills/contaminant release during operation and maintenance of the Mona Proposed Onshore Development Area is unlikely to be significant and is proposed to be scoped out of the assessment for onshore ecology.

Potential impact	Justification
The impact of construction, operations and maintenance and decommissioning of the Mona Proposed Onshore Development Area on species not listed in the EIA Scoping Report, including red squirrel, brown hare, fish, and aquatic invertebrates.	<p>As part of the site selection and route refinement process, the Mona Proposed Onshore Development Area will be located and designed to avoid large parcels of woodland and main watercourses. Where the Onshore Cable Corridor is required to cross watercourses, the selection of crossing technique for each location will take into account the sensitivity or ecological value of the watercourse, to avoid or reduce potential impacts on habitats and species. The crossing technique for each watercourse will be identified in the crossing schedule that will accompany the application for development consent together with an outline watercourse crossing method statement.</p> <p>In addition, due to the limited extent and temporary nature of habitat disturbance associated with construction and decommissioning of the onshore export cable, and the requirement for land to be reinstated post- construction, significant impacts on species not listed in the Mona Offshore Wind Project Scoping Report (Mona Offshore Wind Ltd, 2022) are unlikely to occur and are proposed to be scoped out of the assessment for onshore ecology. However, should it not be feasible to utilise environmentally sensitive construction techniques (e.g. horizontal directional drilling), the list of survey requirements and species to be considered in the assessment for onshore ecology will be updated as required.</p>

18.7 Measures adopted as part of the Mona Offshore Wind Project

18.7.1.1 For the purposes of the EIA process, the term 'measures adopted as part of the project' is used to include the following measures (adapted from IEMA, 2016):

- Measures included as part of the design of the Mona Offshore Wind Project. These include modifications to the location or design of the Mona Offshore Wind Project which are integrated into the application for consent. These measures are secured through the consent itself through the description of the development and the parameters secured in the DCO and/or marine licences (referred to as primary mitigation in IEMA, 2016).
- Measures required to meet legislative requirements, or actions that are generally standard practice used to manage commonly occurring environmental effects and are secured through the DCO (referred to as tertiary mitigation in IEMA, 2016).

18.7.1.2 A number of measures (primary and tertiary) have been adopted as part of the Mona Offshore Wind Project to reduce the potential for impacts on onshore ecology. These are outlined in Table 18.20 below. As there is a commitment to implementing these measures, they are considered inherently part of the design of the Mona Offshore Wind Project and have therefore been considered in the assessment presented in section 18.8 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures).

Table 18.20: Measures adopted as part of the Mona Offshore Wind Project.

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
Primary measures: Measures included as part of the design of the Mona Offshore Wind Project		
HDD under ancient woodland	Where the cable route cannot avoid sensitive ecological receptors, there is a commitment to HDD under ancient woodland and avoidance of open trenching, thus minimising direct impacts to sensitive habitats.	Committed within the design of the Mona Offshore Wind Project (see volume 1, chapter 3: Project description of the PEIR).
Avoidance of impacts to Traeth Pensarn SSSI	Design to avoid sensitive ecological receptors	Committed within the design of the Mona Offshore Wind Project (see volume 1, chapter 3: Project description of the PEIR).
HDD under Llanddulas Limestone and Gwrych Castle Wood SSSI	Where the cable route cannot avoid sensitive ecological receptors, there is a commitment to HDD under Traeth Pensarn SSSI and avoidance of open trenching, thus minimising direct impacts to sensitive habitats.	Committed within the design of the Mona Offshore Wind Project (see volume 1, chapter 3: Project description of the PEIR).
Re-instatement of habitats along temporary working areas (e.g. Hedgerows will be replanted using locally sourced native species, where practicable). Suitably qualified and experienced contractors will be used to undertake the reinstatement, which will be based on restoring the hedge to match the remaining hedgerow at each location. Where appropriate, some enhancement (such as planting of additional suitable species) may be undertaken.	Measures to minimise the potential impacts of habitat loss, disturbance, and fragmentation	Committed within the design of the Mona Offshore Wind Project (see volume 1, chapter 3: Project description of the PEIR).
The width of hedge to be removed will be limited where practicable	Measures to minimise the potential impacts of habitat loss, disturbance, and fragmentation	Committed with the design of the Mona Offshore Wind Project (see volume 1, chapter 3: Project description of the PEIR).
Tertiary measures: Measures required to meet legislative requirements, or adopted standard industry practice		
Biodiversity Benefit	Mona Offshore Wind Project is committed to attempting to achieve long term biodiversity benefit	A Biodiversity Statement will be submitted alongside the Environmental Statement as part of the DCO application.

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
GCN European Protected Species Mitigation Licence (EPSML)	Legally required to demonstrate that the project results in no likely detriment to maintenance of Favourable Conservation Status (FCS)	These measures would be secured as a requirement of the DCO.
Outline CoCP to ensure effective management of environmental risk during the construction phase of onshore transmission assets and supporting infrastructure. The CoCP will include regulatory guidance and industry best practice guidance including: <ul style="list-style-type: none"> A surface and groundwater management plan Construction method statement for the diversion of the ordinary watercourse at Mona Onshore Substation option 7 to include measures to minimise impacts on protected species. Construction method statement for watercourse crossings that will include a bentonite breakout plan. 	Measures to minimise potential contaminant releases and manage construction impacts.	These measures would be secured as a requirement of the DCO.
Ecological Clerk of Works (ECoW)	The presence of a suitably qualified ECoW during construction activities	These measures would be secured as a requirement of the DCO.
Hydrological, Ecological and Landscape Management Plan (HELMP) setting out measures for habitat creation and monitoring in particular at the Mona Onshore Substation site and the realignment of the ordinary watercourse. Measures will include habitat restoration and the use of temporary hedgerows – see below.	To minimise impacts on protected species and habitats.	These measures would be secured as a requirement of the DCO.

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
Temporary hedgerows which would comprise a double row of Heras fencing secured in place with a water filled traffic barrier to prevent wind damage and covered with a green camouflage netting over both rows of Heras fencing to mimic a hedgerow. Another option for dormice, specifically, is the installation of brash hedgerows but these would only be able to be deployed at specific locations, such as the boundaries of the substations so they would not obstruct construction related activities.	Where important hedgerows are identified to provide connectivity features for bats and dormice, but the access needs to be made available for construction works these temporary hedgerows can be used to maintain connectivity without significantly disrupting construction related activities as they are moveable. These hedgerows will be identified during the surveys outlined in the next steps detailed in 18.12	These measures would be reported in the HELMP that would be secured as a requirement of the DCO.
The design of the Mona Onshore Substation will provide an 8m easement between the banks of the watercourse and any proposed development	To provide a buffer between the development and the water course	These measures would be secured as a requirement of the DCO and through the implementation of the CoCP, particularly the Surface and Groundwater Management Plan.
There will be tree protection buffers of 15m, in line with best practice guidance.	To limit disturbance activity at the ancient woodland edges.	These measures would be secured as a requirement of the DCO.
There will be tree protection plans and associated Heras fencing of retained trees within and adjacent to the construction areas as specified by the Tree Constraints Plan (TCP)	To prevent root damage to retained trees from construction related activities.	These measures would be secured as a requirement of the DCO.

18.7.1.3 Where significant effects have been identified, further mitigation measures (referred to as secondary mitigation in IEMA 2016) have been identified to reduce the significance of effect to acceptable levels following the initial assessment. These are measures that could further prevent, reduce and, where possible, offset any adverse effects on the environment. These measures are set out, where relevant, in section 18.8 below.

18.8 Assessment of significant effects

18.8.1.1 The potential impacts arising from the construction, operations and maintenance and decommissioning phases of the Mona Offshore Wind Project have been assessed for onshore ecology. The potential impacts arising from the construction, operations and

maintenance and decommissioning phases of the Mona Offshore Wind Project are listed in Table 18.18, along with the MDS against which each impact has been assessed.

18.8.1.2 A description of the potential effect on onshore IEFs caused by each identified impact is given below.

18.8.1.3 Table 18.21 details the table of ecology features which are considered to be IEFs, their conservation status and level of sensitivity, as defined in accordance with the Mona Offshore Wind Project assessment methodology (see section 18.5.2 of this chapter).

Table 18.21: Important Ecological Features and sensitivities.

IEF	Conservation status	Sensitivity of IEF
Ancient Woodland	National importance	Very High
Coastal Vegetated Shingle	National	High
Waterbodies, including ponds, ditches, and streams	District	High
Hedgerows	District	Medium
Mature broadleaved standards	District	Medium
GCN	County	Medium

18.8.2 The impact of temporary and permanent habitat loss during construction, and decommissioning of the Mona Offshore Wind Project

18.8.2.1 Construction and decommissioning of the Mona Proposed Onshore Development Area may result in the temporary (e.g. onshore export cable) or permanent (e.g. Mona Onshore Substation) loss of habitat, which in turn may support protected or notable species and habitats. The MDS is represented by the maximum surface area of habitat loss and disturbed and as outlined in Table 18.18.

Ancient Woodland

Construction

Magnitude of impact

18.8.2.2 The Mona Offshore Wind Project has made a commitment to HDD underneath Ancient Woodland and, as such, will not be affected by the temporary or permanent loss of habitat.

18.8.2.3 The impact is predicted to be none. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.2.4 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and none or low recoverability. The sensitivity of the receptor is therefore, considered to be **very high**.

Significance of effect

18.8.2.5 Overall, the magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.2.6 The onshore export cable will remain in place during decommissioning.

18.8.2.7 The impact is predicted to be none. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.2.8 Ancient woodland is deemed to be of high value and none or low recoverability. The sensitivity of the receptor is therefore, considered to be **very high**.

Significance of effect

18.8.2.9 Overall, the magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Coastal Vegetated Shingle

Construction

Magnitude of impact

18.8.2.10 Coastal vegetated shingle is the qualifying feature of the Traeth Pensarn SSSI and it extends for 1.7km along the North Wales coast. The onshore export cables for Mona Offshore Wind Project will be located outside the SSSI and, as such, will not be affected by the temporary or permanent loss of habitat.

18.8.2.11 The impact is predicted to be none. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.2.12 Traeth Pensarn SSSI is designated for the presence of coastal vegetated shingle resource which is a threatened habitat because of rising sea levels and climate change. As such the sensitivity of the receptor can be considered to be **high**.

Significance of effect

18.8.2.13 Overall, the magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.2.14 As the onshore export cables are located away from the coastal vegetated habitat, there will be no temporary or permanent habitat loss during decommissioning.

18.8.2.15 The impact is predicted to be none. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.2.16 The sensitivity of the coastal vegetated shingle habitat is considered to be **high**.

Significance of effect

18.8.2.17 Overall, the magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Waterbodies, including ponds, ditches, and streams

Construction

Magnitude of impact

18.8.2.18 During construction there will be a temporary loss of riparian habitat within the Mona Proposed Onshore Development Area where open cut techniques are used to cross ditches and streams.

18.8.2.19 Temporary loss of habitat will also occur at Mona Onshore Substation option 7 as a result of the realignment of the ordinary watercourse (section 8 of the Mona Proposed Onshore Development Area) where the Mona Onshore Substation and associated infrastructure will be constructed. The watercourse is a minor tributary of the Elwy – Clwyd to Melai river water body and its realignment could impact on the habitat and hydromorphological supporting conditions.

18.8.2.20 The impact on ditches and streams crossed by open cut trenching is predicted to be short term and the water courses will be re-instated and, as such, will only be impacted in the short term. The magnitude of impact is therefore, considered to be **negligible**.

18.8.2.21 Temporary and permanent habitat loss, as a result of the realignment on the ordinary watercourse may directly impact upon the habitat and ecosystems of protected species and fish. There may also be impacts to aquatic flora and invertebrates which may rely on seasonal depths of water.

18.8.2.22 The impact of the realignment of the ordinary watercourse at the Mona Onshore Substation option 7 (section 8 of the Mona Proposed Onshore Development Area) is predicted to be moderate. Only partial ecological recovery is likely within five years and full recovery is likely to take up to 10 years as the existing ordinary watercourse is associated with a mature tree line. The magnitude of impact is therefore, considered to be **medium**.

Sensitivity of the receptor

18.8.2.23 Waterbodies have a medium conservation importance, high vulnerability to pollution incidents, a potential to support protected species and has low recoverability. The sensitivity of the receptor is therefore, considered to be **high**.

Significance of effect

18.8.2.24 With regards to the loss of permanent or temporary habitat loss of waterbodies associated with ditches, streams, and ponds, the magnitude of the impact is deemed to be negligible, as the impacts will be temporary and has high recoverability. The sensitivity of the receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

18.8.2.25 With regards to the realignment of the ordinary watercourse the magnitude of the impact is deemed to be medium, and the sensitivity of the receptor is considered to be high. The effect will, therefore, be of **moderate adverse** significance, which is significant in EIA terms.

Further mitigation

18.8.2.26 Following the completion of protected species surveys of the ordinary watercourse at Mona Onshore Substation option 7, a Habitat Restoration and Creation Plan will be prepared in discussion with the Onshore Ecology EWG. Following the implementation of the habitat restoration/creation plan, the significance of effect would be **minor adverse**.

Decommissioning

Magnitude of impact

18.8.2.27 During decommissioning, the onshore export cable will remain in place (including at the crossings of ditches and streams) and activity will be localised to the removal of link boxes which will not require the temporary or permanent loss of riparian habitat. The removal of the Mona Onshore Substation and access road is likely to require similar activities as during construction but is not likely to result in the temporary or permanent loss of waterbody habitat.

18.8.2.28 The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.2.29 Waterbodies have a medium conservation importance, high vulnerability to pollution incidents, a potential to support protected species and has low recoverability. The sensitivity of the receptor is therefore, considered to be **high**.

Significance of effect

18.8.2.30 Overall, the magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Hedgerows

Construction

Magnitude of impact

18.8.2.31 There will be a temporary loss of habitat within the Mona Proposed Onshore Development Area where the Onshore Cable Corridor and 400kV Grid Connection Corridor traverses' hedgerows throughout each section. Hedgerows may also have to be removed at the Mona Onshore Substation site and to allow for construction access and to meet visibility requirements at access points. Hedgerow removal will occur as the part of the pre-construction process and will be re-planted at the end of the construction process.

18.8.2.32 The width of hedge to be removed will be limited where practicable. During construction, temporary hedgerows will be used in the gaps where important hedgerows have been removed to reduce the impact on fragmentation for species such as bats and dormice. On completion of construction, hedgerows will be replanted using locally sourced native species, where practicable.

18.8.2.33 The impact is predicted to be medium term duration and of high recoverability the hedgerows will not be impacted in the long term. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.2.34 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to establish following a planting and management regime. Therefore, the sensitivity of the receptor is considered to be **medium**.

Significance of effect

18.8.2.35 Overall, the magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Decommissioning

Magnitude of impact

- 18.8.2.36 No temporary hedgerows will be removed during the decommissioning of the Onshore Cable Corridor or 400kV Grid Connection Corridor. Very localised sections of hedgerow may have to be removed during the decommissioning of the Mona Onshore Substation but will be kept to a minimum where practicable.
- 18.8.2.37 The magnitude of impact is therefore considered to be **negligible**.

Sensitivity of the receptor

- 18.8.2.38 The sensitivity of the receptor is considered to be **medium**.

Significance of effect

- 18.8.2.39 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Mature broadleaved standards

Construction

Magnitude of impact

- 18.8.2.40 There will be a loss of trees within the Mona Proposed Onshore Development Area where trees are affected by the Onshore Cable Corridor, 400kV Grid Connection Corridor and construction accesses except where HDD is proposed (e.g. beneath substantial areas of woodland). Trees will also be removed where required to facilitate the construction of the Mona Onshore Substation and its infrastructure. At Mona Onshore Substation site 7 there are several mature trees along the watercourse. Some of these trees will be removed during the re-alignment of the ordinary watercourse. The removal of mature broadleaved standards (and other trees) will be limited where practicable.
- 18.8.2.41 The impact is predicted to be limited in extent as the Mona Offshore Wind Project will aim to minimise the loss of trees through the design process. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.8.2.42 Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats. Therefore, the sensitivity of the receptor as is considered to be **medium**.

Significance of effect

- 18.8.2.43 Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Decommissioning

Magnitude of impact

- 18.8.2.44 Mature broadleaved standards will be lost during the removal of link boxes along the Onshore Cable Corridor or 400kV Grid Connection Corridor, or during the decommissioning of the Mona Onshore Substation.
- 18.8.2.45 The magnitude of impact is therefore considered to be **no change**.

Sensitivity of the receptor

- 18.8.2.46 The sensitivity of the receptor is considered to be **medium**.

Significance of effect

- 18.8.2.47 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Great crested newt

Construction

Magnitude of impact

- 18.8.2.48 There will be a temporary loss of terrestrial habitat and potentially waterbodies within the Mona Proposed Onshore Development Area where the waterbodies are affected by the Onshore Cable Corridor and Grid Connection Cable Corridor.
- 18.8.2.49 The impact is predicted to be limited in extent as the Mona Offshore Wind Project will aim to minimise the loss of important habitats, such as ponds used for breeding GCN, where possible. Measures for habitat creation will be set out in the HELMP. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.8.2.50 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conversation importance and has medium ability to recover.

Significance of effect

- 18.8.2.51 Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Decommissioning

Magnitude of impact

- 18.8.2.52 There will be no loss of waterbodies within the Mona Proposed Onshore Development Area during the decommissioning phase. The magnitude of impact is therefore, considered to be **no change**.

	Sensitivity of the receptor		Significance of effect
18.8.2.53	It is considered that the sensitivity of the receptor is medium as GCN is medium conversation importance and has medium ability to recover.	18.8.3.7	Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be very high. The effect will, therefore, be of minor adverse significance which is not significant in EIA terms.
	Significance of effect		Operations and maintenance
18.8.2.54	Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be no change which is not significant in EIA terms.		Magnitude of impact
18.8.3	The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Mona Offshore Wind Project	18.8.3.8	There is the potential for disturbance (e.g. from shading and heat) during the operations and maintenance of the Mona Onshore Substation and its infrastructure.
18.8.3.1	Construction, operations, maintenance and decommissioning of the Mona Proposed Onshore Development Area may result in the disturbance of habitat (e.g. movement, noise, light spill, vibration), which may support protected or notable species. The MDS is represented by the maximum number of vehicles (including heavy machinery) and personnel that could cause the greatest impact and is summarised in Table 18.18.	18.8.3.9	The Mona Onshore Substation will be located at an appropriate standoff (greater than 15m) from the Ancient Woodland edge which will limit disturbance activity at the ancient woodland edges.
	Ancient Woodland	18.8.3.10	The impact would therefore be predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude of impact is, therefore, considered to be negligible .
	Construction		Sensitivity of the receptor
	Magnitude of impact	18.8.3.11	Ancient woodland is deemed to be of high value and non or low recoverability. The sensitivity of the receptor is, therefore, considered to be very high .
18.8.3.2	There is the potential for indirect disturbance as a consequence of HDD drilling operations under the Ancient Woodland Parcels within the Mona Proposed Onshore Development Area. There will be compounds associated with HDD launch and receptor sites outside ancient woodland parcels. There is also the potential for disturbance to Ancient Woodland Parcels from the construction of Mona Onshore Substation option 7 (e.g. dust).		Significance of effect
18.8.3.3	Similarly, during decommissioning, there is the potential for disturbance primarily from dust	18.8.3.12	Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be very high. The effect will, therefore, be of minor adverse significance which is not significant in EIA terms.
18.8.3.4	There will be tree protection buffers of 15m, in line with guidance, installed which will limit disturbance activity at the ancient woodland edges. There will also be measures in place to manage dust from construction activities. These measures will be secured via the CoCP, which will be secured as a requirement of the DCO.		Decommissioning
18.8.3.5	The impact would therefore be predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude of impact is, therefore, considered to be negligible .		Magnitude of impact
	Sensitivity of the receptor	18.8.3.13	The Onshore Cable Corridor and 400kV Grid Connection Cable Corridor will remain in place during decommissioning.
18.8.3.6	Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and non or low recoverability. The sensitivity of the receptor is, therefore, considered to be very high .	18.8.3.14	The impact is predicted to be none. The magnitude of impact is therefore, considered to be no change .
			Sensitivity of the receptor
		18.8.3.15	Ancient woodland is deemed to be of high value and none or low recoverability. The sensitivity of the receptor is therefore, considered to be very high .
			Significance of effect
		18.8.3.16	Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be very high. The effect will, therefore, be no change which is not significant in EIA terms.

Coastal Vegetated Shingle

Construction

Magnitude of impact

18.8.3.17 The offshore export cables will be brought onshore away from the Traeth Pensarn SSSI, however the SSSI will be used to provide access for construction vehicles to the beach. There is the potential for direct disturbance from the movement of vehicles on the coastal shingle habitat. However, most of the equipment will be brought by sea and measures will be in place to minimise damage. Similarly, during decommissioning vehicles will access the beach via Traeth Pensarn SSSI.

18.8.3.18 There will be an impact risk protection zone in line with Natural England guidance, the extent of which will be agreed through the EWP process to prevent disturbance to Traeth Pensarn SSSI. This will be secured via the CoCP, which will be conditioned part of the DCO process

18.8.3.19 The disturbance impact is predicted to be short term and the short-term viability of the habitat and protected site will not be impacted in the long term. The magnitude of impact is, therefore, considered to be **negligible**.

Sensitivity of the receptor

18.8.3.20 Traeth Pensarn SSSI is designated for the presence of coastal vegetated shingle resource which is are a threatened habitat because of rising sea levels and climate change. As such the sensitivity of the receptor can be considered **high**.

Significance of effect

18.8.3.21 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Magnitude of impact

18.8.3.22 No access will be required across the coastal vegetated shingle habitat during the operations and maintenance phase.

18.8.3.23 The impact is predicted to be none. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.3.24 The sensitivity of the coastal vegetated shingle habitat is considered to be **high**.

Significance of effect

18.8.3.25 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.3.26 There is the potential for direct disturbance from the movement of vehicles on the coastal shingle habitat during the decommissioning of the offshore export cable. However, the majority of equipment will be brought by sea and measures will be in place to minimise damage. Similarly, during decommissioning vehicles will access the beach via Traeth Pensarn SSSI.

18.8.3.27 There will be an impact risk protection zone in line with Natural England guidance, the extent of which will be agreed through the EWP process to prevent disturbance to Traeth Pensarn SSSI. This will be secured via the CoCP, which will be conditioned part of the DCO process

18.8.3.28 The disturbance impact is predicted to be short term and the short-term viability of the habitat and protected site will not be impacted in the long term. The magnitude of impact is, therefore, considered to be **negligible**.

Sensitivity of the receptor

18.8.3.29 Traeth Pensarn SSSI is designated for the presence of coastal vegetated shingle resource which is are a threatened habitat because of rising sea levels and climate change. As such the sensitivity of the receptor can be considered **high**.

Significance of effect

18.8.3.30 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Waterbodies, including ponds, ditches and streams

Construction

Magnitude of impact

18.8.3.31 During construction there will be some indirect disturbance of riparian habitat area within the Mona Proposed Onshore Development Area, which has the potential to impact watercourses as the cable traverses' ditches and waterbodies, specifically in Sections 8 and 9.

18.8.3.32 There will also be temporary disturbance at Mona Onshore Substation option 7 as a result of the realignment of the ordinary watercourse (section 8 of the Onshore Cable Corridor) where the substation and associated infrastructure will be constructed.

18.8.3.33 The disturbance impact is predicted to be short term (less than one year) and riparian habitats will not be impacted in the long term. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.3.34 Waterbodies have a medium conservation importance, high vulnerability to pollution incidents, a potential to support protected species and has low recoverability. The sensitivity of the receptor is therefore, considered to be **high**.

Significance of effect

18.8.3.35 Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance**Magnitude of impact**

18.8.3.36 During operations and maintenance, there would be no disturbance to the waterbody habitat. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.3.37 The sensitivity of waterbodies is considered to be **high**.

Significance of effect

18.8.3.38 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning**Magnitude of impact**

18.8.3.39 During decommissioning the onshore export cable at watercourse crossings will remain in place and therefore, disturbance of habitats is unlikely to occur.

18.8.3.40 There is the potential for temporary disturbance of riparian habitats at Mona Onshore Substation option 7 where the substation and associated infrastructure will be decommissioned.

18.8.3.41 The disturbance impact is predicted to be short term (less than one year) and riparian habitats will not be impacted in the long term. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.3.42 Waterbodies have a medium conservation importance, high vulnerability to pollution incidents, a potential to support protected species and has low recoverability. The sensitivity of the receptor is therefore, considered to be **high**.

Significance of effect

18.8.3.43 Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Hedgerows**Construction****Magnitude of impact**

18.8.3.44 There will be indirect habitat disturbance of adjacent retained hedgerows where gaps in hedgerows are required to install the onshore infrastructure.

18.8.3.45 The disturbance impact is predicted to be short term (less than one year) and there will be no long-term disturbance. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.3.46 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to recover from short term disturbance related impacts following a planting and management regime. Therefore, the sensitivity of the receptor is considered to be **medium**

Significance of effect

18.8.3.47 Overall, the magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance**Magnitude of impact**

18.8.3.48 During operations and maintenance, there would be no disturbance to the hedgerow habitat. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.3.49 The sensitivity of waterbodies is considered to be **medium**.

Significance of effect

18.8.3.50 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.3.51 During decommissioning the onshore export cable will remain in place and as a result there will be no habitat disturbance.

18.8.3.52 The decommissioning of the Mona Onshore Substation and its infrastructure could potentially disturb nearby hedgerows. The disturbance impact is predicted to be short term (less than one year) and there will be no long-term disturbance. The magnitude of impact is therefore, considered to be **negligible**.

Sensitivity of the receptor

18.8.3.53 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to recover from short term disturbance related impacts following a planting and management regime. Therefore, the sensitivity of the receptor is considered to be **medium**

Significance of effect

18.8.3.54 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

Mature broadleaved standards

Construction

Magnitude of impact

18.8.3.55 There will be indirect disturbance of mature broadleaved standards, which will be minimised through the installation of tree protection fencing around the Root Protection Areas (RPAs) during the construction and decommissioning phases.

18.8.3.56 The disturbance impact is predicted to be short term (less than one year) and there will be no long-term disturbance. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.3.57 Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats. Therefore, the sensitivity of the receptor as is considered to be **medium**.

Significance of effect

18.8.3.58 Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Magnitude of impact

18.8.3.59 During operations and maintenance, there would be no disturbance to the mature broadleaved standards. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.3.60 The sensitivity of waterbodies is considered to be **medium**.

Significance of effect

18.8.3.61 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.3.62 There will be indirect disturbance of mature broadleaved standards during the decommissioning of the Mona Onshore Substation and its infrastructure. Along the Onshore Cable Corridor and 400kV Grid Connection Corridor disturbance would be localised to where link boxes are removed. Impacts will be minimised through the installation of tree protection fencing around the RPAs during the decommissioning phase.

18.8.3.63 The disturbance impact is predicted to be short term (less than one year) and there will be no long-term disturbance. The magnitude of impact is therefore, considered to be **negligible**.

Sensitivity of the receptor

18.8.3.64 The sensitivity of the receptor as is considered to be **medium**.

Significance of effect

18.8.3.65 Overall, the magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

Great Crested Newt (GCN)

Commissioning and decommissioning

Magnitude of impact

18.8.3.66 There will be a temporary disturbance of terrestrial habitat and aquatic habitats during construction and decommissioning within the Mona Proposed Onshore Development Area, which has the potential to cause disturbance to GCN populations.

18.8.3.67 The disturbance impact is predicted to be short term (less than one year) and the terrestrial and aquatic habitats will not be impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.3.68 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conversation importance and has medium ability to recover

Significance of effect

18.8.3.69 The significance of effect for the disturbance of habitat used by GCN is considered to be a **minor adverse**, which is not significant in EIA terms

Operations and maintenance

Magnitude of impact

18.8.3.70 During operations and maintenance, there would be no disturbance of terrestrial habitat and aquatic habitats. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.3.71 The sensitivity of the receptor is considered to be **medium**.

Significance of effect

18.8.3.72 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.3.73 There may be localised temporary disturbance of terrestrial habitat will be no loss of waterbodies within the Mona Proposed Onshore Development Area during the decommissioning phase, but it is expected to be localised. The magnitude of impact is therefore, considered to be **negligible**.

Sensitivity of the receptor

18.8.3.74 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conversation importance and has medium ability to recover.

Significance of effect

18.8.3.75 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

18.8.4 The impact of habitat fragmentation and species isolation during construction, operations and maintenance and decommissioning of the Mona Offshore Wind Project

18.8.4.1 Construction, operations, maintenance and decommissioning of the Mona Proposed Onshore Development Area has the potential to result in habitat fragmentation and species isolation through creating changes to habitat configuration at a landscape scale. The MDS is based upon the largest footprint of disturbed land and is summarised in Table 18.18.

18.8.4.2 Changes which cause existing habitat to become broken up or fragmented can, in turn, lead to the isolation of individual species, such as dormice or water vole, which in turn, reduces the area in which they can forage and breed and, therefore, potentially affect their population size and viability.

Ancient Woodland

Construction and decommissioning

Magnitude of impact

18.8.4.3 There is no potential fragmentation of ancient woodland as a consequence of HDD drilling operations under the Ancient Woodland Parcels within the Mona Proposed Onshore Development Area.

18.8.4.4 The impact is predicted to be none. The magnitude is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.4.5 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and non or low recoverability. The sensitivity of the receptor is therefore, considered to be **very high**.

Significance of effect

18.8.4.6 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be very high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Operations and maintenance

Magnitude of impact

18.8.4.7 During operations and maintenance, there would be no fragmentation to ancient woodland. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.4.8 The sensitivity of ancient woodland is considered to be **very high**.

	Significance of effect		Waterbodies including ponds ditches and steams
18.8.4.9	Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be very high. The effect will, therefore, be no change which is not significant in EIA terms.		Construction and decommissioning
	Coastal Vegetated Shingle		Magnitude of impact
	Construction and decommissioning		
	Magnitude of impact	18.8.4.17	There will be some fragmentation impacts to riparian habitat area within the Mona Proposed Onshore Development Area, which, in turn has the potential to cause fragmentation and isolation impacts to species which could potentially rely on them, such as water vole and otter (should they be identified as being present).
18.8.4.10	There will be some short-term fragmentation of vegetated shingle that is a qualifying feature of the Traeth Pensarn SSSI, during the construction and decommissioning of the Mona Offshore Wind Project.	18.8.4.18	The fragmentation and isolation impacts are predicted to be short term (less than one year) and fragmentation of riparian habitats will be impacted in the long term through the design process. The magnitude of impact is therefore, considered to be low .
18.8.4.11	The fragmentation impact is predicted to be short term and the short-term viability of the habitat and protected site will not be impacted in the long term. The magnitude of impact is, therefore, considered to be low .		Sensitivity of the receptor
	Sensitivity of the receptor	18.8.4.19	Waterbodies have a medium conservation importance, high vulnerability to pollution incidents, a potential to support protected species and has low recoverability. The sensitivity of the receptor is therefore, considered to be high .
18.8.4.12	Traeth Pensarn SSSI is designated for the presence of coastal vegetated shingle resource which is are a threatened habitat because of rising sea levels and climate change. As such the sensitivity of the receptor is considered as high .		Significance of effect
	Significance of effect	18.8.4.20	Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be minor adverse which is not significant in EIA terms.
18.8.4.13	Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.		Operations and maintenance
	Operations and maintenance		Magnitude of impact
	Magnitude of impact	18.8.4.21	During operations and maintenance, there would be no fragmentation of waterbodies. The magnitude of impact is therefore, considered to be no change .
18.8.4.14	During operations and maintenance, there would be no fragmentation of the coastal vegetated shingle habitat. The magnitude of impact is therefore, considered to be no change .		Sensitivity of the receptor
	Sensitivity of the receptor	18.8.4.22	The sensitivity of waterbodies is considered to be high .
18.8.4.15	The sensitivity of waterbodies is considered to be high .		Significance of effect
	Significance of effect	18.8.4.23	Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be no change which is not significant in EIA terms.
18.8.4.16	Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be no change which is not significant in EIA terms.		Hedgerows
			Construction and decommissioning
			Magnitude of impact
		18.8.4.24	There will be fragmentation to hedgerows where gaps in hedgerows are required to install the infrastructure, which, in turn, has the potential to cause fragmentation and

isolation impacts to species which could potentially rely on them, such as dormice and bats (should they be identified as being present).

18.8.4.25 The fragmentation and isolation impacts are predicted to be short term (less than one year) and hedgerows will be re-instated and will not be impacted in the long term. The magnitude of impact is therefore, considered to be **low**

Sensitivity of the receptor

18.8.4.26 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to recover from short term fragmentation impacts following a re-instatement planting and management regime. Therefore, the sensitivity of the receptor is considered to be **medium**

Significance of effect

18.8.4.27 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Magnitude of impact

18.8.4.28 During operations and maintenance, there would be no fragmentation of the hedgerow habitat. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.4.29 The sensitivity of hedgerow habitat is considered to be **medium**.

Significance of effect

18.8.4.30 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Mature broadleaved standards

Construction and decommissioning

Magnitude of impact

18.8.4.31 There may be some fragmentation impacts to broadleaved trees within the Mona Proposed Onshore Development Area, which, in turn has the potential to cause fragmentation and isolation impacts to species which could potentially rely on them, such as breeding bats and dormice (should they be identified as being present).

18.8.4.32 The fragmentation and isolation impacts are predicted to be short term (less than one year) and mature broadleaved trees will not be impacted in the long term. The magnitude of impact is therefore, considered to be **low**

Sensitivity of the receptor

18.8.4.33 Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats. Therefore, the sensitivity of the receptor is considered to be **medium**.

Significance of effect

18.8.4.34 Overall, the magnitude of impact is deemed to be low, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Magnitude of impact

18.8.4.35 There may be some minor fragmentation and isolation impacts to mature broadleaved trees, and species which could reply on them for breeding (e.g. bats and dormice), as a consequence of the operation and maintenance of the Mona Offshore Wind Project, which is predicted to limited in extent and restricted to areas around the Mona Onshore Substation and associated infrastructure. There are no predicted long-term fragmentation and isolation impacts predicted during operation and maintenance as connectivity of habitat will be managed through the design process. Any temporary loss will be managed via the HELMP .

18.8.4.36 The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.4.37 The sensitivity of the receptor as is considered to be **medium**.

Significance of effect

18.8.4.38 Overall, the magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Great crested newt

Construction and decommissioning

Magnitude of impact

18.8.4.39 There will be fragmentation of terrestrial habitat and aquatic habitats during the construction and decommissioning within the Mona Proposed Onshore Development Area which, in turn, has the potential to cause fragmentation and isolation to GCN populations.

18.8.4.40 The fragmentation and isolation impacts are predicted to be short term (less than one year) and the terrestrial and aquatic habitats will not be impacted by fragmentation and isolation in the long term. Retained habitats of value to GCN will be re-instated

and enhanced and these mitigation plans will be agreed via a EPSML licence. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

18.8.4.41 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conversation importance and has medium ability to recover

Significance of effect

18.8.4.42 Overall, the magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Operations and maintenance

Magnitude of impact

18.8.4.43 During operations and maintenance, there would be no fragmentation of the GCN populations. The magnitude of impact is therefore, considered to be **no change**.

Sensitivity of the receptor

18.8.4.44 It is considered that the sensitivity of the receptor is **medium**, as GCN is medium conversation importance and has medium ability to recover.

Significance of effect

18.8.4.45 Overall, the magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

18.8.5 The impact of pollution caused by accidental spills/contaminant release during construction and decommissioning of the Mona Offshore Wind Project

18.8.5.1 Activities required for the construction and decommissioning of the Mona Proposed Onshore Development Area may result in accidental spills/contaminant release (for example from storage of fuels/chemicals in the temporary construction compounds, bentonite breakouts from HDD crossings and surface water runoff) which could adversely affect protected or notable habitats and species. The MDS is represented by the maximum number of temporary construction compounds and HDD locations along the Onshore Cable Corridor and 400kV Grid Connection Corridor that would cause the greatest risk of a pollution incident and is summarised in Table 18.18.

All receptors

Construction

Magnitude of impact

18.8.5.2 Although the likelihood of a pollution event occurring is low, should an event occur, the impact is predicted to be of local spatial extent, short-duration, intermittent and reversible. It is predicted that the impact will affect the receptor indirectly, given the measures adopted as detailed in Table 18.20. The magnitude is therefore, considered to be **negligible**.

Sensitivity of receptors

18.8.5.3 The receptors have a medium to high conservation importance, high vulnerability to impact and a medium to low/non recoverability. The sensitivity of the receptor is therefore, considered to be **medium to very high**.

Significance of the effect

18.8.5.4 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium to very high. The effect will, therefore, be of **negligible to minor adverse** significance, which is not significant in EIA terms.

Decommissioning

Magnitude of impact

18.8.5.5 Decommissioning activities within Mona Proposed Onshore Development Area are equal to or less than those carried out during the construction phase. Therefore, for the purpose of this assessment it is assumed that the risk of pollution caused by accidental spills/contaminant release is likely to be similar and the potential impact is deemed to be reversible in the short-term habitats will re-establish and fauna is likely to return to re-established habitats after the pollution incident.

Sensitivity of receptors

18.8.5.6 The receptors have a medium to high conservation importance, high vulnerability to impact and a medium to low/non recoverability. The sensitivity of the receptor is therefore, considered to be **medium to very high**.

Significance of the effect

18.8.5.1 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of the receptor is considered to be medium to very high. The effect will, therefore, be of **negligible to minor adverse** significance, which is not significant in EIA terms.

18.8.6 The impact of spreading Invasive and Non-native Species (INNS) during construction and decommissioning of the Mona Offshore Wind Project

- 18.8.6.1 Construction and decommissioning of the Mona Proposed Onshore Development Area may cause the spread of INNS, which could adversely affect the status protected or notable habitats and species. The MDS is represented by the greatest amount of land that will be disturbed and is summarised in Table 18.18.
- 18.8.6.2 Construction and decommissioning activities potentially involve the introduction and/or spread of INNS through the movement of earth during works, including the digging of trenches and the use of machinery and presence of operating personnel. Both machinery and operating personnel have the potential to carry INNS on their equipment (e.g. heavy machinery tracks or vehicle tyres) or working clothing (e.g. boots) seeds or spores of INNS from either within or outside the Mona Onshore Proposed Development Area.
- 18.8.6.3 The introduction, or unintentional spread of seeds, spores or other parts of plant material may result in the spread of plant species (e.g. Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum* and water primrose *Ludwigia peploides*). These species have the potential to displace native species and to potentially replace or become dominant in those areas of habitat and change the community composition and structure.
- 18.8.6.4 If wide scale habitat changes results from the spread of invasive and/or non-native species there is the potential to replace existing valuable habitat and supporting ecosystems that are used by protected or notable species.

All receptors

Construction

Magnitude of impact

- 18.8.6.5 The Mona Onshore Proposed Development Area is dominated by Grassland/pasture, arable, woodland and built environment 6.6%, as described in volume 7, annex 18.2: Phase 1 habitat survey. These habitats are not likely to be vulnerable to large scale habitat change resulting from changes in plant species composition as a consequence of the spread of native or non-native plant species.
- 18.8.6.6 Water courses or bodies are more susceptible to the spread of invasive or non-native species, including curly waterweed *Lagarosiphon major* and floating pennywort *Hydrocotyle ranunculoides*, however these habitats are far less abundant in the Mona Onshore Proposed Development Area with ponds only comprising 0.1% of the habitat present.
- 18.8.6.7 The impact is predicted to be of local spatial extent, short/medium term duration, and high reversibility. It is predicted that the impact will affect the receptor indirectly. The magnitude is therefore, considered to be **negligible**.

Sensitivity of receptor

- 18.8.6.8 The receptors have a medium to high conservation importance, high vulnerability to impact and a medium to low/non recoverability. The sensitivity of the receptor is therefore, considered to be **medium to very high**.

Significance of the effect

- 18.8.6.9 Overall, the magnitude of the impact during construction is deemed to be negligible and the sensitivity of the receptors are considered to be medium to very high, depending on the species. The effect will, therefore, be **negligible or minor adverse** or negligible significance, which is not significant in EIA terms.

Decommissioning

- 18.8.6.10 Decommissioning activities within the Mona Onshore Proposed Development Area are equal to or less than those carried out during the construction phase. Therefore, for the purpose of this assessment it is assumed that the level of disturbance is likely to be similar and the potential impact on each species is deemed to be reversible in the short-term.

Significance of the effect

- 18.8.6.11 Overall, the magnitude of the impact during decommissioning is deemed to be negligible and the sensitivity of the receptor is considered to be medium to very high, depending on the species. The effect will, therefore, be **negligible or minor adverse** or negligible significance, which is not significant in EIA terms.

18.8.7 Future monitoring

- 18.8.7.1 A Monitoring Plan will be developed in conjunction with the Onshore Ecology EWG and will also consider recommendations outlined in the HELMP.
- 18.8.7.2 Table 18.22 outlines the proposed monitoring commitments for onshore ecology to test the predictions of the impact assessment. However, these are likely to be expanded upon as the surveys evolve the baseline and to ensure compliance with any EPSM licence monitoring requirements.
- 18.8.7.3 Annual or bi-annual monitoring will be undertaken to test the predictions of the impact assessment to and to ensure that mitigation and compensation areas are provide appropriate functionality to support protected and/or notable species and replacement habitats.

Table 18.22: Monitoring commitments.

Environmental effect	Monitoring commitment	Means of implementation
GCN – Habitat loss, disturbance fragmentation and isolation.	Re-instated terrestrial and riparian habitats, monitoring of GCN populations in habitat creation and enhancement areas.	These measures would be set out in the HELMP which will be secured as a requirement of the DCO.
Vegetated Coastal Shingle	Ensure no long-term impacts to SSSI and undertake an NVC survey	These measures would be set out in the HELMP which will be secured as a requirement of the DCO
Protected Species	Monitoring of populations and habitats, as identified and required through the Environmental Statement in habitat creation and enhancement areas identified.	These measures would be set out in the HELMP which will be secured as a requirement of the DCO

Environmental effect	Monitoring commitment	Means of implementation
Watercourses	Watercourses will be monitored post construction to ensure re-establishment of any important vegetation and invertebrate assemblages and/or species which could rely on them, such as otter and water vole.	These measures would be set out in the HELMP which will be secured as a requirement of the DCO
Hedgerows	Re-instatement of hedgerows will be monitored post construction to ensure re-establishment success	These measures would be set out in the HELMP which will be secured as a requirement of the DCO

18.9.1.4 This tiered approach is adopted to provide a clear assessment of the Mona Offshore Wind Project alongside other projects, plans and activities.

18.9.1.5 The specific projects, plans and activities scoped into the CEA, are outlined in Table 18.23. For the purposes of the PEIR, all developments scoped in were considered only if they are within 1km of the site boundary. This is because impacts to habitat identified within the Phase 1 Habitat survey and GCN survey would be expected to occur at a more local scale.

18.9.1.6 National Grid Electricity Transmission (NGET) are proposing to undertake upgrades to their Bodelwyddan substation; to facilitate the connection of multiple projects (e.g. Awel y Môr Offshore Wind Farm). The upgrades will comprise works to the existing substation, an extension to the substation and associated works and infrastructure (e.g. new overhead gantries).

18.9.1.7 It is understood that works to the existing substation will be undertaken via NGET's permitted development rights. The proposed extension to Bodelwyddan substation will require planning consent. At the time of writing, an application had not been submitted to Denbighshire County Council, but the anticipated timeframe is early 2024. Given that an application has not been submitted, the potential cumulative impacts of the Bodelwyddan upgrade have not been assessed within the PEIR. This will be re-visited in the application for consent for the Mona Offshore Wind Project should further information become available.

18.9 Cumulative effect assessment methodology

18.9.1 Methodology

18.9.1.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Mona Offshore Wind Project together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see volume 5, annex 5.3: CEA screening matrix). Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

18.9.1.2 The Onshore Ecology CEA methodology has followed the methodology set out in volume 1, chapter 5: EIA methodology of the PEIR. As part of the assessment, all projects and plans considered alongside the Mona Offshore Wind Project have been allocated into 'tiers' reflecting their current stage within the planning and development process, these are listed below.

18.9.1.3 A tiered approach to the assessment has been adopted, as follows:

Tier 1:

- Under construction
- Permitted application
- Submitted application
- Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact

Tier 2:

- Scoping report has been submitted and is in the public domain
- Tier 3: the Mona Offshore Wind Project considered alongside Tier 1 and Tier 2 projects, as well as projects where the:
 - Scoping report has not been submitted
 - Identified in a relevant development plan
 - Identified in other plans and programmes.

Table 18.23: List of other projects, plans and activities considered within the CEA.

Project/Plan	Status	Distance from the Mona Proposed Onshore Development Area (km)	Distance from the Mona Onshore Substation (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Mona Offshore Wind Project
Tier 1-							
40/2021/0309	Approved within last 5 years	0.8	1.6 (option 2) 1.8 (option 7)	Erection of a 198 bed Registered Care Home (Use Class C2), landscaping, parking facilities and associated works (Resubmission)	2024 to 2027	2027 onwards	Construction of this project would coincide with construction of the Mona Offshore Wind Project for two years.
Awel Y Môr Offshore Windfarm	Application submitted	0.0	0.1 (option 2) 0.7 (option 7)	Awel y Môr Offshore Wind Farm is a project being developed by RWE Renewables to the west of the existing Gwynt y Môr Offshore Wind Farm.	2026 to 2029	2030 to 2055	Construction of Awel y Mor may overlap with the construction of the Mona Offshore Wind Project.

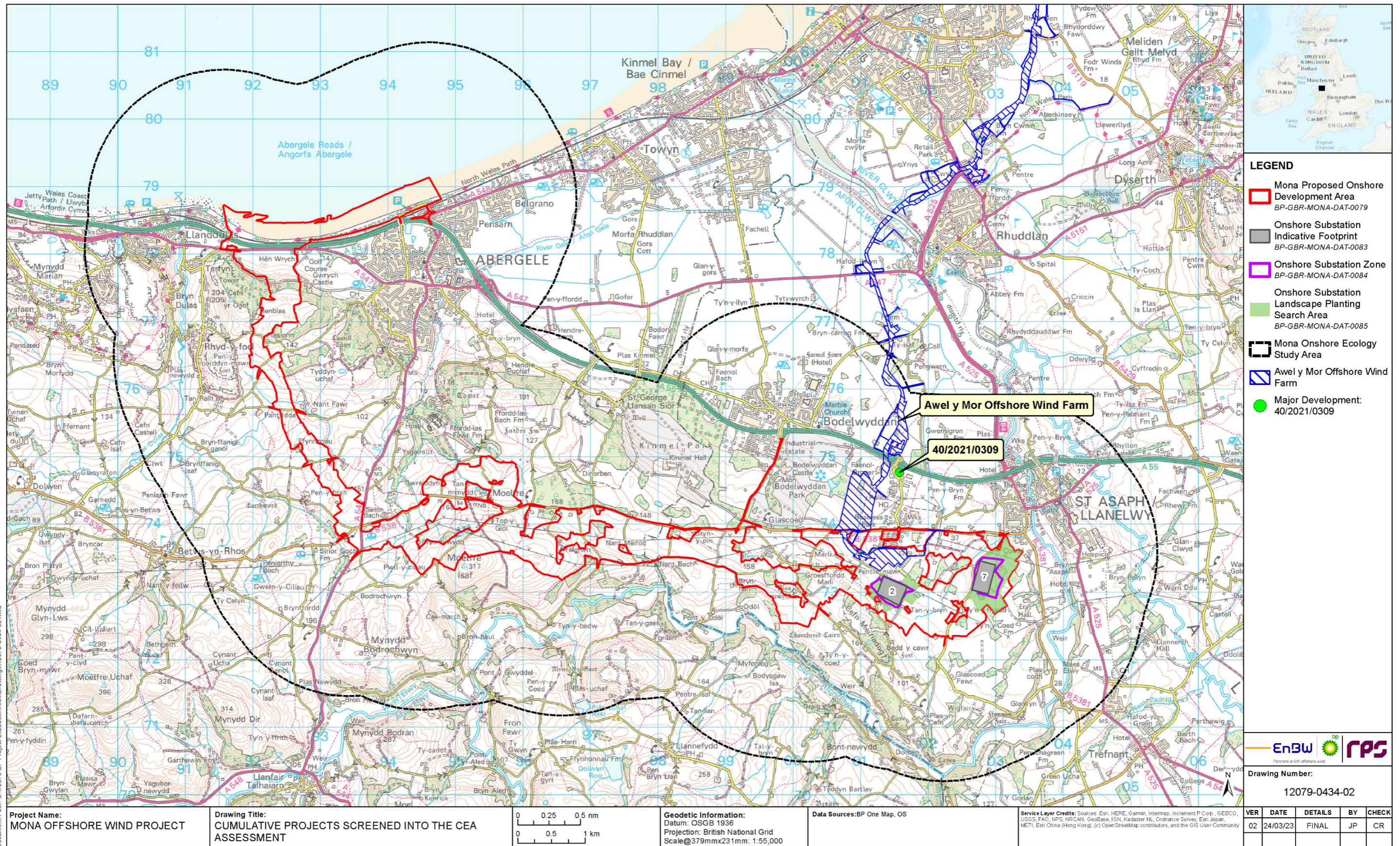


Figure 18.3: Other projects, plans and activities screened into the cumulative effects assessment.

18.9.2 Maximum design scenario

18.9.2.1 The MDSs, detailed in Table 18.24, have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been selected from the Design of the Mona Offshore Wind Project Envelope provided in volume 1, chapter 3: Project Description, of the PEIR as well as the information available on other projects and plans, in order to inform a 'MDS'. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Design of the Mona Offshore Wind Project Envelope (e.g. different turbine layout), to that assessed here, be taken forward in the final design scheme.

Table 18.24: Maximum design scenario considered for the assessment of potential cumulative effects on onshore ecology.

^a C=construction, O=operational and maintenance, D=decommissioning

Potential cumulative effect	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
The impact of temporary and permanent habitat loss during construction and decommissioning of the Mona Proposed Onshore Development Area.	✓	×	✓	Maximum design scenario as described for the Mona Offshore Wind Project (Table 18.18) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> 40/2021/0309 Awel Y Môr Offshore Windfarm 	Outcome of the CEA will be greatest when the greatest number of other plans are considered. Only Tier 1 schemes within 1km of the Mona Proposed Onshore Development Area that involve building upon undisturbed land (greenfield) been included, as justified in section 18.9.1.5 those plans which involve demolition of existing buildings (brownfield) to create the footprint for new development are not considered to impact upon cumulative habitat loss. All Tier 1 plans have been considered as the CEA will be greatest if all this land is lost to development. Therefore, this CEA should be considered for the onshore ecology study area.
The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Mona Proposed Onshore Development Area.	✓	✓	✓	Maximum design scenario as described for the Mona Offshore Wind Project (Table 18.18) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> 40/2021/0309 Awel Y Môr Offshore Windfarm 	Outcome of the CEA will be greatest when the greatest number of other plans are considered. All Tier 1 and Tier 2 plans within 1km of the Mona Proposed Onshore Development Area are considered, as justified in section 18.9.1.5, as disturbance travels beyond the source point and is dependent upon the ZOI of the IEF's involved within the PEIR assessment. Therefore, this CEA should be considered for the onshore ecology study area.
The impact of habitat fragmentation and species isolation during construction, operations and maintenance and decommissioning of the Mona onshore transmission assets	✓	✓	✓	Maximum design scenario as described for the Mona Offshore Wind Project (Table 18.18) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> 40/2021/0309 Awel Y Môr Offshore Windfarm 	Outcome of the CEA will be greatest when the greatest number of other plans are considered. Only greenfield Tier 1 schemes within 1km of the Mona Proposed Onshore Development have been included, brownfield plans are not considered to impact upon cumulative habitat fragmentation and species isolation. All Tier 1 plans have been considered as the CEA will be greatest if all of this land is lost to development. Therefore, this CEA should only be considered for the Mona onshore ornithology study area
The impact of pollution caused by accidental spills/contaminant release during constructions and decommissioning of the Mona onshore transmission assets.	✓	×	✓	Maximum design scenario as described for the Mona Offshore Wind Project (Table 18.18) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> 40/2021/0309 Awel Y Môr Offshore Windfarm 	Outcome of the CEA will be greatest when the greatest number of other plans are considered. All Tier 1 plans within 1km of the Mona Proposed Onshore Development Area are considered as spills and/or contaminant release is possible on all projects. Therefore, this CEA should be considered for the onshore ecology study area.

18.10 Cumulative effects assessment

18.10.1.1 A description of the significance of cumulative effects upon onshore ecological receptors from each identified impact is given below.

18.10.1.2 Two Tier 1 projects or plans have been identified as having potential cumulative impact pathways with the Mona Offshore Wind Project, these are the construction of the Awel Y Môr Offshore Windfarm, anticipated to commence construction in 2026 and the planned construction of project 40/2021/0309. which is for the erection of 198 bed Registered Care Home (Use Class C2), landscaping, parking facilities and associated works. Construction of project 40/2021/0309 will have commenced by 2026 (see Table 18.23).

18.10.1.3 The impacts of temporary or permanent habitat loss and habitat disturbance are assessed for protected species, in both the Awel Y Môr Offshore Windfarm Environmental Statement, volume 5, chapter 3.5: Onshore Biodiversity and Nature Conservation and project 40/2021/0309 Preliminary Ecological Appraisal: Etive Ecology Ltd. A review of these assessments has enabled the significance of cumulative impacts to be assessed for both temporary and permanent habitat loss, habitat disturbance.

18.10.1.4 However, the above projects have not assessed the significance of impacts on IEFs for impacts considered in this assessment other the permanent habitat loss and disturbance The impacts scoped into this assessment as follows:

- Habitat fragmentation and species isolation
- Pollution caused by accidental spills/ contaminant release
- INNS.

18.10.1.5 Therefore, in accordance with Volume 1, chapter 5: Environmental Impact Assessment methodology, a CEA has not been carried out on these impacts due to a lack of data availability.

18.10.1.6 No Tier 2 projects and plans have been identified in the screening process for this chapter's assessment which have effect-receptor pathways. A full list of projects and plans reviewed for the CEA assessment are presented in volume 5, annex 5.1: CEA screening matrix.

18.10.2 The cumulative impact of temporary and permanent habitat loss

18.10.2.1 Construction, operations, maintenance and decommissioning of the Mona Proposed Onshore Development Area may result in the temporary (e.g. Onshore Cable Corridor) or permanent (e.g. Mona Onshore Substation) loss of habitat, which may support protected or notable species. The MDS is represented by the maximum surface area of habitat loss and disturbed and is summarised in Table 18.18. Cumulatively these impacts have the potential to be greater when combined with impacts from projects and plans identified with impact pathways (Awel Y Môr Offshore Windfarm and Project 40/2021/0309) (Table 18.26).

18.10.2.2 Construction in Mona Proposed Onshore Development Area and the construction of other identified projects listed within the CEA have the potential to impact IEFs through the temporary or permanent loss of habitats.

18.10.2.3 The construction of project 40/2021/0309: Erection of 198 bed Registered Care Home, is planned to be located on a site just north of St Asaph Business Park and covers an area of approximately 1.5ha. This development area comprises habitat that is described as short growing colonising habitat on largely bare ground and generally considered to be of low ecological value. (Ref: Preliminary Ecological Appraisal: Etive Ecology Ltd 2021). Given the low ecological value of the project 40/2021/0309: Erection of 198 bed Registered Care Home, is planned to be located on a site just north of St Asaph Business Park and covering an area of approximately 1.5ha with an absence of any direct or indirect impacts to IEF's (Ref: Preliminary Ecological Appraisal: Etive Ecology Ltd 2021), no further in combination assessment of the cumulative impacts of this project will be considered

18.10.2.4 The construction of Awel Y Môr Offshore Windfarm includes the construction of an onshore Electronic Cable Corridor (ECC), with planned landfall on the intertidal area east of Rhyl and routing south to Pentre-mawr and incorporating permanent sub-stations (Awel Y Môr Offshore Windfarm Environmental Statement, volume 3, chapter 3.5: Onshore Biodiversity and Nature Conservation).

18.10.2.5 Where overlap between the construction phase for the Mona Onshore Development and the construction of nearby developments is likely, the MDS assumes that they will overlap. It is assumed that the other developments identified will be built out to their maximum permissible extent but that any proposed mitigation and compensation measures will be implemented

18.10.2.6 For the assessment of impacts for the Mona Proposed Onshore Development Area, temporary and habitat loss, as the result of Proposed Mona Onshore Development was identified.

18.10.2.7 The assessment of habitat loss, either temporary or permanent, for the Awel Y Môr Offshore Windfarm includes an assessment of the magnitude of impacts for permanent and temporary habitat loss.

18.10.2.8 An initial assessment of habitat loss, either temporary or permanent, for the Awel Y Môr Offshore Windfarm for protected species is that there would be the following impacts to IEFs, which correlate with IEFs identified within the current PEIR:

- Ancient Woodland – No change as the project avoids impacts to ancient woodland through HDD drilling)
- Coastal Vegetated Habitats – No change as the project does not result in temporary or permanent loss of coastal vegetated habitats associated with the Traeth Pensarn SSSI.
- Waterbodies – Loss of 0.12ha of rivers and streams. The project does not report the temporary or permanent loss of ponds. This would result in a minor impact.
- Hedgerows – Permanent loss of 1.69 ha of important priority hedgerow and 540 metres temporary loss of hedgerow. This would result in a minor impact.
- Mature broadleaved trees – 8 mature trees – This would result in a minor impact.
- GCN – Permanent loss of 5ha of terrestrial habitat and temporary loss of 10.56ha of terrestrial habitat directly adjacent to GCN breeding ponds – This would result in a minor impact.

Waterbodies, include ponds, ditches, and streams

Construction

Magnitude of impact

- 18.10.2.9 During construction there will be a temporary loss of riparian habitat within the Mona Proposed Onshore Development Area where open cut techniques are used to cross ditches and streams. Temporary habitat loss will also occur as a result of the realignment of the ordinary watercourse at the Mona Onshore Substation option 7 (section 8 of the Mona Proposed Onshore Development Area).
- 18.10.2.10 The construction of the Awel y Môr Offshore Wind Farm onshore cable corridor and onshore substation will also lead to a temporary loss of waterbodies habitat. Its assessment predicted the temporary loss of 0.12ha of rivers and stream habitat and concluded this to be a minor impact.
- 18.10.2.11 The cumulative impact of temporary habitat loss is predicted to be of local spatial extent, medium term duration, and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **medium**.

Sensitivity of the receptor

- 18.10.2.12 Waterbodies have a medium conservation importance, high vulnerability to pollution incidents, a potential to support protected species and has low recoverability. The sensitivity of the receptor is therefore, considered to be **high**.

Significance of effect

- 18.10.2.13 Overall, the magnitude of the cumulative impact is deemed to be medium, and the sensitivity of the receptor is considered to be high. The cumulative effect will, therefore, be of **moderate adverse** significance, which is significant in EIA terms.

Further mitigation

- 18.10.2.14 Following the completion of protected species surveys of the ordinary watercourse at Mona Onshore Substation option 7, a Habitat Restoration and Creation Plan will be prepared in discussion with the Onshore Ecology EWG which will consider any in combination mitigation measures associated with watercourses proposed or consented by the Awel Y Môr Offshore Windfarm that are connected to the Elwy-Clwyd to Melai river water body. The cumulative effect will reduce to **minor adverse** which is not significant in EIA terms.

Hedgerows

Construction

Magnitude of impact

- 18.10.2.15 There will be a temporary loss of habitat within the Mona Proposed Onshore Development Area where the Onshore Cable Corridor and 400kV Grid Connection Corridor traverses' hedgerows throughout each section. Hedgerows may also have to be removed at the Mona Onshore Substation site and to allow for construction access

and to meet visibility requirements at access points. Hedgerow removal will occur as the part of the pre-construction process and will be re-planted at the end of the construction process.

- 18.10.2.16 There is a permanent loss of hedgerows of 1.69ha of priority hedgerow and 540m of temporary loss associated with the Awel Y Môr Offshore Windfarm. Hedgerows be reinstated using a species rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost.
- 18.10.2.17 The width of hedge to be removed will be limited where practicable. During construction, temporary hedgerows will be used in the gaps where important hedgerows have been removed to reduce the impact on fragmentation for species such as bats and dormice. On completion of construction, hedgerows will be replanted using locally sourced native species, where practicable.
- 18.10.2.18 The cumulative impacts of both permanent and temporary hedgerow loss is predicted to be medium term duration and of high recoverability the hedgerows will not be impacted in the long term. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.10.2.19 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to establish following a planting and management regime. Therefore, the sensitivity of the receptor is considered to be **medium**.

Significance of effect

- 18.10.2.20 Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning

Magnitude of impact

- 18.10.2.21 No temporary hedgerows will be removed during the decommissioning of the Onshore Cable Corridor or 400kV Grid Connection Corridor. Very localised sections of hedgerow may have to be removed during the decommissioning of the Mona Onshore Substation but will be kept to a minimum where practicable. No detail on hedgerow removal have been detailed within the Awel Y Môr Offshore Windfarm Environmental Statement, volume 3, chapter 5.
- 18.10.2.22 The magnitude of impact is therefore considered to be **negligible** .

Sensitivity of the receptor

- 18.10.2.23 The sensitivity of the receptor is considered to be **medium**.

Significance of effect

- 18.10.2.24 Overall, the magnitude of the cumulative impact is deemed to be negligible change and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Mature broadleaved standards

Construction

Magnitude of impact

- 18.10.2.25 There will be a loss of trees within the Mona Proposed Onshore Development Area where trees are affected by the Onshore Cable Corridor, 400kV Grid Connection Corridor and construction accesses except where HDD is proposed (e.g. beneath substantial areas of woodland). Trees will also be removed where required to facilitate the construction of the Mona Onshore Substation and its infrastructure. At Mona Onshore Substation site 7 there are several mature trees along the watercourse; some of these trees will be removed during the re-alignment of the ordinary watercourse. The removal of mature broadleaved standards (and other trees) will be limited where practicable.
- 18.10.2.26 The Awel y Môr Offshore Wind Farm reports a permanent loss of eight heavy standard broadleaved trees that may be crossed by the cable route or affected by temporary construction compounds or visibility splays. These will be compensated at a ratio of 3:1 for any trees lost.
- 18.10.2.27 The cumulative impact is predicted to be limited in extent as the Mona Offshore Wind Project will aim to minimise the loss of trees through the design process. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.10.2.28 Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats. Therefore, the sensitivity of the receptor as is considered to be **medium**.

Significance of effect

- 18.10.2.29 Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Great crested newt

Construction

Magnitude of impact

- 18.10.2.30 There will be a temporary loss of terrestrial habitat and potentially waterbodies within the Mona Proposed Onshore Development Area where the waterbodies are affected by the Onshore Cable Corridor and Grid Connection Cable Corridor.
- 18.10.2.31 There is a permanent loss of 5ha of terrestrial habitat and temporary loss of 10.56ha of terrestrial habitat directly adjacent to GCN breeding ponds in the Proposed Awel Y Môr Offshore Windfarm Environmental which was concluded as a minor impact in the assessment

- 18.10.2.32 The cumulative impact of temporary and permanent habitat loss is predicted to be limited in extent as the Mona Offshore Wind Project will aim to minimise the loss of important habitats, such as ponds used for breeding GCN, where possible. Cumulatively the magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.10.2.33 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conversation importance and has medium ability to recover.

Significance of effect

- 18.10.2.34 Overall, the magnitude of the cumulative impact is deemed to be low, and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

18.10.3 The cumulative impact of habitat disturbance

- 18.10.3.1 Construction, operations, maintenance and decommissioning of the Mona Proposed Onshore Development Area may result in the disturbance of habitat (e.g. movement, noise, light spill, vibration), which may support protected or notable species. The MDS is represented by the maximum number of vehicle (including heavy machinery) and personnel that could cause the greatest impact and is summarised in Table 18.18.

Waterbodies, including ponds, ditches, and streams

Construction

Magnitude of impact

- 18.10.3.2 During construction there will be some indirect disturbance of riparian habitat area within the Mona Proposed Onshore Development Area, which has the potential to impact watercourses as the cable traverses' ditches and waterbodies, specifically in Sections 8 and 9.
- 18.10.3.3 There will also be temporary disturbance at Mona Onshore Substation option 7 as a result of the realignment of the ordinary watercourse (section 8) where the substation and associated infrastructure will be constructed.
- 18.10.3.4 There is potential to cause indirect disturbance to the River Clywd crossing as part of the Awel Y Môr Offshore Windfarm as a consequence of the launch and receptor sites for the HDD drilling.
- 18.10.3.5 The cumulative impacts are predicted to be short term (less than one year) and riparian habitats will not be impacted in the long term. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.10.3.6 Habitat loss, a reduction in water quality, potential to support protected species protected species such as otter, water vole, and notable invertebrate and aquatic species would consider the sensitivity of the receptor as **high**.

Significance of effect

- 18.10.3.7 Overall, the magnitude of the cumulative impact is deemed to be low, and the sensitivity of the receptor is considered to be high. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning

Magnitude of impact

- 18.10.3.8 During decommissioning the onshore export cable for the Mona Proposed Onshore Development Area therefore, disturbance of habitats is unlikely to occur. There is the potential for temporary disturbance of riparian habitats at Mona Onshore Substation option 7 where the substation and associated infrastructure will be decommissioned.
- 18.10.3.9 The Awel y Mor project has assumed that all infrastructure will be removed, but also clarifies that where this may lead to a greater environmental impact, it may be proposed that export cable will remain in situ. Awel y Mor also commits to preparing a decommissioning plan setting out control measures.
- 18.10.3.10 The cumulative impact is predicted to be short term (less than one year) and riparian habitats will not be impacted in the long term. The magnitude of impact is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.10.3.11 Habitat loss, a reduction in water quality, potential to support protected species protected species such as otter, water vole, and notable invertebrate and aquatic species would consider the sensitivity of the receptor as **high**.

Significance of effect

- 18.10.3.12 Overall, the magnitude of the cumulative impact is deemed to be low, and the sensitivity of the receptor is considered to be high. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Mature broadleaved standards

Construction

Magnitude of impact

- 18.10.3.13 There will be indirect disturbance of mature broadleaved trees, which will be minimised through the installation of tree protection fencing around the RPAs during the construction and decommissioning phases for both the Mona Proposed Onshore Development Area and the Proposed Awel Y Môr Offshore Windfarm.
- 18.10.3.14 The disturbance impact is predicted to be short term (less than one year) and there will be no long-term disturbance. The magnitude of impact cumulatively is therefore, considered to be **low**.

Sensitivity of the receptor

- 18.10.3.15 Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats. Therefore, the sensitivity of the receptor as is considered to be **medium**.

Significance of effect

- 18.10.3.16 Overall, the magnitude of the cumulative impact is deemed to be low, and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning

Magnitude of impact

- 18.10.3.17 There will be indirect disturbance of mature broadleaved standards during the decommissioning of the Mona Onshore Substation and its infrastructure. Along the Onshore Cable Corridor and 400kV Grid Connection Corridor disturbance would be localised to where link boxes are removed. Impacts will be minimised through the installation of tree protection fencing around the RPAs during the decommissioning phase.
- 18.10.3.18 The Awel y Mor project has assumed that all infrastructure will be removed, but also clarifies that where this may lead to a greater environmental impact, it may be proposed that export cable etc. will remain in situ. Awel y Mor also commits to preparing a decommissioning plan setting out control measures.
- 18.10.3.19 The disturbance impact is predicted to be short term (less than one year) and there will be no long-term disturbance. The magnitude of impact is therefore, considered to be **negligible**.

Sensitivity of the receptor

- 18.10.3.20 The sensitivity of the receptor as is considered to be **medium**.

Significance of effect

- 18.10.3.21 Overall, the magnitude of impact is deemed to be negligible, and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

18.11 Inter-related effects

- 18.11.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the proposal on the same receptor. These are considered to be:
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Mona Offshore Wind Project (construction, Operations and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases.

- Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on IEF's such as habitat loss and disturbance may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.

18.11.1.2 A description of the likely interactive effects arising from the Mona Offshore Wind Project on Onshore Ecology is provided in volume 3, chapter 25: Inter-related effects – onshore of the PEIR.

18.11.2 Summary of impacts, mitigation measures and monitoring

18.11.2.1 Information on onshore ecology within the onshore ecology study area was collected through review of available literature, other assessments, UK statutory guidance, detailed analysis of the data collected during site-specific surveys, and consultation with relevant stakeholders.

- Table 18.25 presents a summary of the potential impacts, measures adopted as part of the project and residual effects in respect onshore ecology. The impacts assessed include:
 - The impact of temporary and permanent habitat loss
 - The impact of habitat disturbance
 - The impact of habitat fragmentation
 - The impact of pollution caused by accidental spills/contaminant
 - The impact of INNS.
- Overall, this PEIR assessment concluded that there will be the following significant effect arising from the Mona Offshore Wind Project during the construction phase:
 - The impact of temporary waterbodies.
- Table 18.26 presents a summary of the potential cumulative impacts, mitigation measures and residual effects. The cumulative impacts assessed include:
 - The impact of temporary and permanent habitat loss
 - The impact of habitat disturbance.
- Overall, this PEIR assessment concluded that there will be the following significant cumulative effect arising from the Mona Offshore Wind Project during the construction phase:
 - The impact of temporary waterbodies.

Table 18.25: Summary of potential environmental effects, mitigation, and monitoring.

^a C=construction, O=operational and maintenance, D=decommissioning

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
The impact of temporary and permanent habitat loss during construction, and decommissioning of the Mona Proposed Onshore Development Area.	✓	×	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	<u>Ancient Woodland</u> C: No change D: No change <u>Coastal Vegetated Shingle</u> C: No change D: No change <u>Waterbodies</u> C: Negligible to medium D: No change <u>Hedgerows</u> C: Low D: Negligible <u>Mature broadleaved standards</u> C: Low D: No change <u>GCN</u> C: Low D: No change	<u>Ancient Woodland</u> C: Very High D: Very High <u>Coastal Vegetated Shingle</u> C: High D: High <u>Waterbodies</u> C: High D: High <u>Hedgerows</u> C: Medium D: Medium <u>Mature broadleaved standards</u> C: Medium D: Medium <u>GCN</u> C: Medium D: Medium	<u>Ancient Woodland</u> C: No change D: No change <u>Coastal Vegetated Shingle</u> C: No change D: No change <u>Waterbodies</u> C: Minor to moderate adverse D: No change <u>Hedgerows</u> C: Minor adverse D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse D: No change <u>GCN</u> C: Minor adverse D: No change	Habitat creation/restoration plan for realigned ordinary watercourse	<u>Ancient Woodland</u> C: No change D: No change <u>Coastal Vegetated Shingle</u> C: No change D: No change <u>Waterbodies</u> C: Minor adverse D: No change <u>Hedgerows</u> C: Minor adverse D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse D: No change <u>GCN</u> C: Minor adverse D: No change	GCN monitoring
The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Mona Proposed Onshore Development Area	✓	✓	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	<u>Ancient Woodland</u> C: Negligible O: Negligible D: Negligible <u>Coastal Vegetated Shingle</u> C: Negligible O: No change D: Negligible <u>Waterbodies</u> C: Low O: No change D: Low <u>Hedgerows</u>	<u>Ancient Woodland</u> C: Very High O: Very High D: Very High <u>Coastal Vegetated Shingle</u> C: High O: High D: High <u>Waterbodies</u> C: High O: High D: High Hedgerows	<u>Ancient Woodland</u> C: Minor adverse O: Minor adverse D: Minor adverse <u>Coastal Vegetated Shingle</u> C: Minor adverse O: No change D: Minor adverse <u>Waterbodies</u> C: Minor adverse O: No change D: Minor adverse Hedgerows	None	<u>Ancient Woodland</u> C: Minor adverse O: Minor adverse D: Minor adverse <u>Coastal Vegetated Shingle</u> C: Minor adverse O: No change D: Minor adverse <u>Waterbodies</u> C: Minor adverse O: No change D: Minor adverse <u>Hedgerows</u>	GCN monitoring

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
					C: Low O: No change D: Negligible <u>Mature broadleaved standards</u> C: Low O: No change D: Negligible <u>GCN</u> C: Low O: No change D: Negligible	C: Medium O: Medium D: Medium Mature broadleaved standards C: Medium O:Medium D: Medium <u>GCN</u> C: Medium O: Medium D: Medium	C: Minor adverse O: No change D: Negligible <u>Mature broadleaved standards</u> C: Minor adverse O: No change D: Negligible <u>GCN</u> C: Minor adverse O: No change D: Negligible		C: Minor adverse O: No change D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse O: No change D: Negligible <u>GCN</u> C: Minor adverse O: Minor adverse D: Negligible	
The impact of habitat fragmentation and species isolation during construction, operation and maintenance and decommissioning of the Mona Proposed Onshore Development Area.	✓	✓	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	<u>Ancient Woodland</u> C: No change O: No change D: No change <u>Coastal Vegetated Shingle</u> C: Low O: No change D: Low <u>Waterbodies</u> C: Low O: No change D: Low <u>Hedgerows</u> C: Low O: No change D: Low <u>Mature broadleaved standards</u> C: Low O: Low D: Low <u>GCN</u> C: Low O: Low D: Low	<u>Ancient Woodland</u> C: Very High O: Very High D: Very High <u>Coastal Vegetated Shingle</u> C: High O: High D: High <u>Waterbodies</u> C: High O: High D: High <u>Hedgerows</u> C: Medium O: Medium D: Medium <u>Mature broadleaved standards</u> C: Medium O: Medium D: Medium <u>GCN</u> C: Medium O: Medium D: Medium	<u>Ancient Woodland</u> C: No change O: No change D: No change <u>Coastal Vegetated Shingle</u> C: Minor adverse O: No change D: Minor adverse <u>Waterbodies</u> C: Minor adverse O: No change D: Minor adverse <u>Hedgerows</u> C: Minor adverse O: No change D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse O: Minor adverse D: Minor adverse <u>GCN</u> C: Minor adverse O: Minor adverse D: Minor adverse	Further surveys will be undertaken to evolve and develop the baseline and associated measures would set out in the Hydrology, Ecology and Landscape Management Plan which will be secured as a requirement of the DCO	<u>Ancient Woodland</u> C: No change O: No change D: No change <u>Coastal Vegetated Shingle</u> C: Minor adverse O: No change D: Minor adverse <u>Waterbodies</u> C: Minor adverse O: No change D: Minor adverse <u>Hedgerows</u> C: Minor adverse O: No change D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse O: Minor adverse D: Minor adverse <u>GCN</u> C: Minor adverse O: Minor adverse D: Minor adverse	GCN monitoring

MONA OFFSHORE WIND PROJECT

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
The impact of pollution caused by accidental spills/contaminant release during construction and decommissioning of the Mona Proposed Onshore Development Area	✓	✗	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	All receptors C: Negligible D: Negligible	All receptors C: Very high to medium D: Very high to medium	All receptors C: Negligible to minor adverse D: Negligible to minor adverse	None	All receptors C: Negligible to minor adverse D: Negligible to minor adverse	None
The impact of spreading Invasive and Non-native Species (INNS) during construction and decommissioning of the Mona Proposed Onshore Development Area.	✓	✗	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	All receptors C: Negligible D: Negligible	All receptors C: Very high to medium D: Very high to medium	All receptors C: Negligible to minor adverse D: Negligible to minor adverse	None	All receptors C: Negligible to minor adverse D: Negligible to minor adverse	None

Table 18.26: Summary of potential cumulative environmental effects, mitigation, and monitoring.

^a C=construction, O=operational and maintenance, D=decommissioning

Description of effect	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Tier 1										
The impact of temporary and permanent habitat loss during construction and decommissioning.	✓	✗	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	<u>Waterbodies</u> C: Medium <u>Hedgerows</u> C: Low D: Negligible <u>Mature broadleaved standards</u> C: Low <u>GCN</u> C: Low	<u>Waterbodies</u> C: High <u>Hedgerows</u> C: Medium D: Medium <u>Mature broadleaved standards</u> C: Medium <u>GCN</u> C: Medium	<u>Waterbodies</u> C: Moderate adverse <u>Hedgerows</u> C: Minor adverse D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse <u>GCN</u> C: Minor adverse	Habitat creation/restoration plan for realigned ordinary watercourse	<u>Waterbodies</u> C: Minor adverse <u>Hedgerows</u> C: Minor adverse D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse <u>GCN</u> C: Minor adverse	None
The impact of habitat disturbance during construction and decommissioning of the Mona Proposed Onshore Development Area.	✓	✗	✓	Outline CoCP ECoW HELMP Great crested newt EPSML	<u>Waterbodies</u> C: Low D: Low <u>Mature broadleaved standards</u> O: Low D: Negligible	<u>Waterbodies</u> C: High D: High <u>Mature broadleaved standards</u> C: Medium D: Medium	<u>Waterbodies</u> C: Minor adverse D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse D: Negligible	None	<u>Waterbodies</u> C: Minor adverse D: Minor adverse <u>Mature broadleaved standards</u> C: Minor adverse D: Negligible	None

18.12 Next steps

- 18.12.1.1 Site-specific surveys are ongoing within the Mona Proposed Onshore Development Area.
- 18.12.1.2 The methodology followed has multiple stages, enabling the scope of the assessment to be progressively refined and agreed with NRW.
- 18.12.1.3 The GCN surveys will continue in 2023 and will include population assessment of ponds that are positive for eDNA but not subject to existing monitoring by other schemes to avoid double handling.
- 18.12.1.4 Trees that may be affected by the Mona Proposed Onshore Development Area will be identified, and bat roost surveys undertaken to determine whether bat roosts are present, the species of bat using them and to categorise the type of roosts. The scope of surveys for lesser horseshoe bats, which are known to be present in the area, will be agreed with stakeholders.
- 18.12.1.5 Further surveys are also proposed for badger, invertebrates (both terrestrial and aquatic), reptiles and amphibians, dormice, water vole, otter, habitats (e.g. NVC) and hedgerows.
- 18.12.1.6 The baseline description and impact assessments in this chapter will be updated with results from latest site-specific surveys and responses to consultation for the final Environmental Statement. This, in turn, will inform the development of the measures to be included in the HELMP, which will be secured as a requirement of the DCO application.
- 18.12.1.7 In accordance with policy VOE 5 of the Adopted Local Development Plan 2006-2021 (Denbighshire County Council, 2013), a Biodiversity Statement will be prepared and submitted in support of the Environmental Statement. The Biodiversity Statement will set out how the Mona Offshore Wind Project would preserve Denbighshire County Council's objectives for conserving, enhancing, and restoring biodiversity.

18.13 References

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