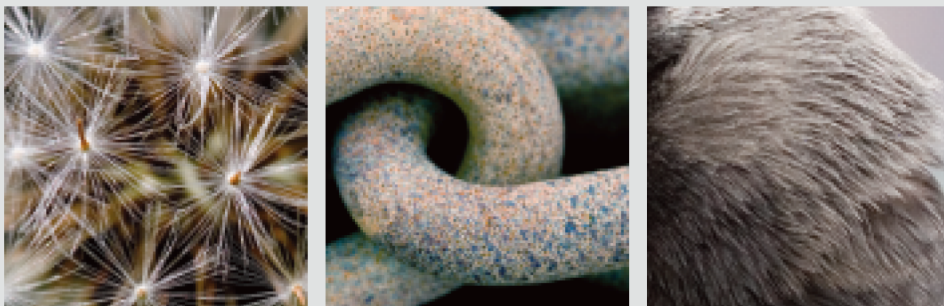


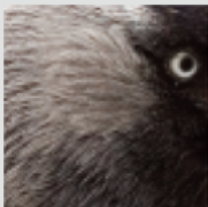
Ynys y Big, Anglesey

Ecological Appraisal

November 2018



baker*consultants*



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Where field investigations have been carried out, these have been restricted to the agreed scope of works and carried out to a level of detail required to achieve the stated objectives of the services. Natural habitats and species distributions may change over time and further data should be sought following any significant delay from the publication of this document.

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1 Summary

1.1 The Proposed Development

- 1.1.1 This document provides an ecological appraisal of the site at Ynys y Big, Anglesey, related to proposals to replace a wooden footbridge between the island of Ynys y Big and Anglesey.
- 1.1.2 This report describes and assesses features of ecological value found to be present at the site. It also provides advice to help minimise any adverse ecological impacts, thereby enabling the development to comply with current nature conservation policy and legislation, with a view to application for a Marine Licence to carry out the works.

1.2 Ecological Receptors

- 1.2.1 The ecological assessment, set out in detail below, has found a high level of nature conservation interest on the site, primarily relating to the presence of statutory designated sites, including a Special Area of Conservation, Site of Special Scientific Interest, and Water Framework Directive habitats (lower sensitivity). These all relate to marine and coastal habitats and their associated animal and plant communities.

1.3 Recommended Actions

- 1.3.1 Ecological impacts on features of interest will need to be avoided, or appropriate mitigation put in place to reduce the effects of development.

1.4 Conclusions

- 1.4.1 Overall, the conclusion of this report is that there will be no permanent or adverse impact on biodiversity resulting from the development, as long as appropriate mitigation is put in place as per the terms of any Marine Licence granted.

2 Introduction

2.1 Site Description

- 2.1.1 Ynys y Big is a small island located within the Menai Strait, just off the main island of Anglesey, Wales. It is situated just off the A545 (Beaumaris Road), between the towns of Glynarth to the north, and Menai Bridge to the south. It is just north of the small island of Ynys Castell.
- 2.1.2 The island is separated from the mainland by a stretch of intertidal soft sediment, flooded at high tide, with rocky shore habitat on either flank. The habitat on the Anglesey side is a private garden with amenity grassland being the primary feature, leading down to the rocky outcrop where the current footbridge begins. The footbridge itself (see red line polygon on Figure 1 below) is in a state of disrepair and not currently functional. The 'landing' on Ynys y Big is also rocky shore habitat, with the rest of the island dominated by young woodland.

Figure 1. Site Location



2.2 Study Scope

- 2.2.1 Baker Consultants was commissioned by the client to undertake the following works in relation to the Site:
- Desk-based study with online databases to identify designated sites of nature conservation importance, and areas of priority habitats.

- Phase 1 Habitat survey to record the nature and extent of vegetation and habitats within and adjacent to the Site; and
- Appraisals for protected and/or notable flora and fauna.

2.2.2 This report takes into account standard guidance from a variety of sources including the Chartered Institute of Ecology and Environmental Management ^{1 2 3}, British Standards Institution ⁴, and www.gov.uk ⁵.

2.2.3 The report considers, in particular, potential effects on the following biodiversity features:

- Designated Sites (international, national and local)
- European Protected Species
- National Protected Species
- Habitats and Species of Principal Importance for Conservation
- Habitats and species of local interest

¹ CIEEM (2018). Guidelines for Ecological Impact Assessment In The UK And Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

² CIEEM (2015). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

³ CIEEM (2017). Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester.

⁴ BSI (2013). BS42020:2013 Biodiversity – Code of Practice for Planning and Development

⁵ <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications>

3 Methods

3.1 Surveyor Qualifications and Experience

- 3.1.1 Rich Hall MCIEEM carried out the field survey and led the study. Rich has over a decade of experience in ecological survey and assessment, and is also experienced in marine and coastal habitats.
- 3.1.2 Best practice guidance on survey methods was taken into account during the site visit, and is referenced in the text below. However, the professional judgement of the surveyors was also applied in relation to the site conditions and target species/habitats being considered. This may have required changes to the published guidance.

3.2 Desk Study

- 3.2.1 A data search was undertaken for designated sites of nature conservation interest, and priority habitats. Data for these was gained through from the Multi-Agency Geographic Information for the Countryside (MAGIC) website.
- 3.2.2 In addition, use was made of the Intertidal Phase 1 Habitat Survey of Natural Resources Wales (Figure 2), under Open Government Licence⁶. This is a dataset compiled of spatially-referenced survey data obtained from different intertidal communities (biotopes) in Wales. Sites have been mapped once and are therefore a single 'snapshot' in time, and hence no guarantees are given for the currency of the mapped data.

3.3 Ecological Appraisal

- 3.3.1 An ecological appraisal was carried out by Rich Hall on October 30 2018. The habitats within the site and surrounding land were appraised for their suitability to support protected or notable species, or assemblages that could be sensitive to the development proposals, in accordance with 'Guidelines for Preliminary Ecological Appraisal' ⁷.
- 3.3.2 During the survey, consideration was given to features such as potential breeding bird habitat, or other features associated with the coastal habitats present.
- 3.3.3 Weather conditions during the survey were fine and dry, with no compromise to visibility. The site was visited at high tide.
- 3.3.4 The survey approach taken is designed to identify broad habitat types at a site and the potential of these habitats to support notable/protected species, and to assist in providing an overview of the ecological interest at a site. It is the most widely used and professionally recognised method for initial ecological site appraisal.

⁶ Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights reserved. Contains Ordnance Survey Data. Ordnance Survey Licence number 100019741. Crown Copyright and Database Right.

⁷ CIEEM (2017). Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester.

4 Results

4.1 Study Limitations

- 4.1.1 It is important to note that, even where data is returned for a desk study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest since the area may simply be under-recorded. Equally, due to the level of recording, some species should be considered more frequent than indicated by the records provided within a desk study.
- 4.1.2 Whilst every effort was made in the field survey to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment. Also, natural and semi-natural habitats are subject to change, species may colonise the site after surveys have taken place and results included in this report may become less reliable over time.
- 4.1.3 Survey data is generally only considered valid if it is from the current or previous active season. In some cases, surveys up to 3 years old may be considered acceptable by consultees if the habitats have not significantly changed in the intervening period.
- 4.1.4 The site was visited at high tide, meaning that submerged habitats could not be seen. This was as a result of the requirement to conduct the survey as soon as possible after commissioning, and the low tide periods during that time not coinciding with daylight or at least acceptable civil twilight. However, the habitats in the area are known based on the designations and desk study sources, and the lack of direct observation of these habitats is not considered to be a significant constraint on this study.

4.2 Designated Sites

- 4.2.1 The desk study provided information on the designated sites listed below in Table 2. Further details of the designated sites can be found at Appendix 1. The island of Ynys y Big lies just outside the Menai Strait and Conwy Bay SAC, which extends up to mean low water only. The proposed works to the footbridge will therefore also be outside the SAC boundary. However, the island and footbridge are both within the Glannau Porthaethwy SSSI.

Table 1. Designated Sites

Name	Status	Location/distance	Interest
Menai Strait and Conwy Bay	SAC	Within 5m (at minimum low tide level)	Mudflats and sandflats not covered by seawater at low tide (primary).
Glannau Porthaethwy	SSSI	Within site	Rocky shore and intertidal habitats, and associated communities of flora and fauna, including tide-swept communities.

- 4.2.2 The area is also within a zone identified as playing host to the following Water Framework Directive Habitats of Lower Sensitivity:

- Intertidal Soft Sediment (Sand, Mud & Mixed A2.2, A2.3, A2.4)
- Rocky Shore (Intertidal Rock A1)

4.3 Habitats

Woodland and Scrub

- 4.3.1 Young woodland is present on the island of Ynys y Big. Scattered individual trees are present within the private garden of the property across from the island. No mature trees are present. Species include ash *Fraxinus excelsior*, and pedunculate oak *Quercus robur*.

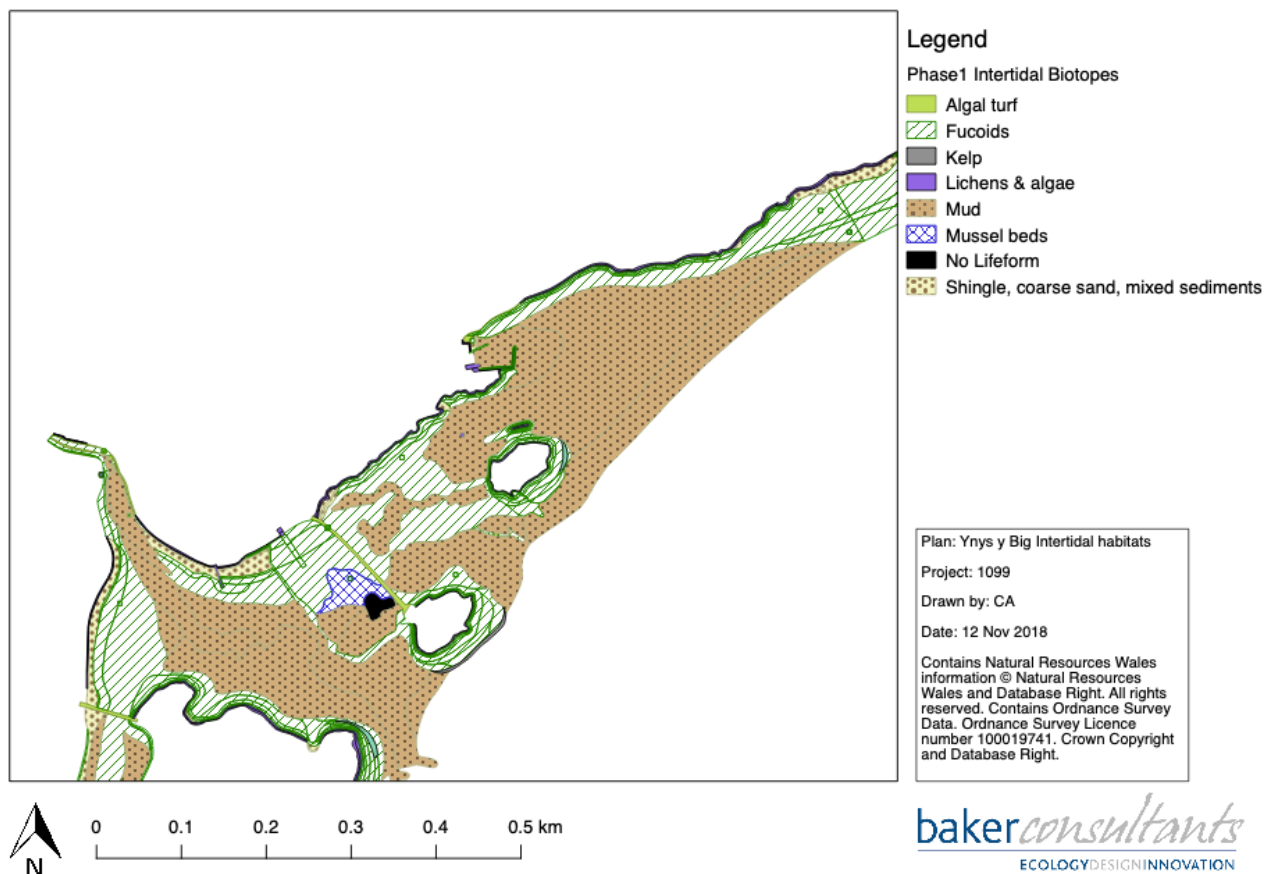
Grassland

- 4.3.2 The only grassland on site is an area of amenity grassland forming the garden of the private property across from Ynys y Big – it is dominated by perennial ryegrass *Lolium perenne*.

Coastland

- 4.3.3 The primary habitat affecting the proposed development is rocky shore on both sides of the bridge, and intertidal soft sediment separating the ‘mainland’ from Ynys y Big. This is detailed in the site designations as discussed above. The substrate is known to be a mix of mud and sand in this location, with large areas of fucoids (brown seaweeds) nearby (Figure 2).

Figure 2. Natural Resources Wales Intertidal Survey



4.4 Species Overview

- 4.4.1 The notable species recorded on or near the site by desk study or field survey are summarised in the following sections.

Tide Swept Communities

- 4.4.2 The intertidal habitat is likely to play host to the species identified in the SSSI and SAC citations included at Appendix 1. The plant and animal communities within the sediment are the primary ecological receptors for this project.

Mammals

- 4.4.3 No mammals were observed during the field survey, although otters are known to be present in the area and are likely to use the coastline for foraging and commuting. No potential refuge areas or 'holts' were observed on either Ynys y Big or the 'mainland' side of the Strait, within proximity to the proposed works.
- 4.4.4 Bats are likely to use the gardens, woodland and other landscape features as foraging and commuting routes. None of the trees within or close to the work site had any features with the potential to host roosting bats.
- 4.4.5 Marine mammals such as dolphins and seals are likely to be present within the wider Menai Straits area. However, based on the specific habitat type in this location, there is considered to be no suitable habitat, and no works within the proposed (highly limited) scope likely to cause an adverse impact on marine mammals. Therefore, marine mammals are not considered further within this report.

Birds

- 4.4.6 Ynys y Big island is known to play host to significant numbers of oystercatcher *Haematopus ostralegus*, as stated in the SSSI citation at Appendix 1. Indeed, approximately 470 oystercatchers were observed resting on Ynys y Big island at the time of the survey. The island, and the intertidal sediment in particular, are likely to provide a significant wintering food source for this species. Small numbers of redshank *Tringa totanus* and dunlin *Calidris alpina* were also observed.
- 4.4.7 The island of Ynys y Big is understood to play host to a heronry (pers. comm.). Small numbers of little egret *Egretta garzetta* were observed resting in the trees on the island during the site visit along with a single grey heron *Ardea cinerea*. Although unlikely to be a significant wintering resource for either species, grey herons are known to commence nesting activities in February, and sometimes as early as January.

5 Assessment

5.1 Marine Policy & Legislation

5.1.1 Under the Marine and Coastal Access Act (MCAA) 2009 it is a licensable marine activity to:

- Deposit any substance or object, in the sea or on or under the sea bed, from:
Any vehicle, vessel, aircraft or marine structure
Any container floating in the sea
Any structure on land constructed or adapted wholly or mainly for the purpose of depositing solids in the sea
- Construct, alter or improve any works either in or over the sea or on or under the sea bed
- Use a vehicle, vessel, aircraft, marine structure or floating container to remove any substance or object from the sea bed
- Carry out any form of dredging, whether or not involving the removal of any material from the sea or sea bed.

5.1.2 In order for the Welsh Government to determine whether a Marine Licence can be granted, a full appraisal of impacts, including ecological impacts, during both construction and operation is required.

5.1.3 The Water Framework Directive, pertinent to ecology, conveys a general requirement for ecological protection, to cover all surface waters. Good ecological status is defined in Annex V of the Water Framework Proposal, in terms of the quality of the biological community, the hydrological characteristics and the chemical characteristics. As no absolute standards for biological quality can be set which apply across the Community, because of ecological variability, the controls are specified as allowing only a slight departure from the biological community which would be expected in conditions of minimal anthropogenic impact.

5.1.4 In this area, the legislation has been applied to map indicative habitats and their sensitivity to anthropogenic impacts, such as marine development of any kind.

5.2 Planning Policy Wales

5.2.1 Planning Policy Wales ('PPW') (9th Edn., November 2016) is the national planning document setting out the devolved planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes('TANs') and Circulars. Of particular importance is TAN 5, which provides national policy guidance in respect of nature conservation and planning.

5.2.2 PPW, the TANs and Circulars should all be taken into account by local planning authorities in Wales when preparing development plans and assessing planning applications. Those of most relevance are discussed further below.

5.2.3 The Welsh Government's objectives for the conservation and improvement of the natural

heritage as stated within PPW (paragraph 5.1.2) include the following:

- Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- Ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
- Ensure that statutorily designated sites are properly protected and managed;
- Safeguard protected species; and to
- Promote the functions and benefits of soils, and in particular their function as a carbon store.

5.2.4 PPW also addresses development management in relation to biodiversity within Section 5.5 and outlines requirements of local planning authorities in relation to assessing impact of any development proposals on nature conservation.

5.2.5 TAN 5 Nature Conservation and Planning sets out the manner in which planning authorities should comply with their duty to “...have a regard, so far as is consistent with the proper exercise of [their] functions, to the purpose of conserving biodiversity”, as required by the NERC Act.

5.2.6 The key principles of positive planning for nature conservation in TAN 5 are:

- Work to achieve nature conservation objectives through a partnership between local planning authorities, Countryside Council for Wales ('CCW'), the Environment Agency ('EA') Wales (CCW and EA Wales now Natural Resources Wales ('NRW')), voluntary organisations, developers, landowners and other key stakeholders;
- Integrate nature conservation into all planning decisions looking for development to deliver social, economic and environmental objectives together over time;
- Ensure that the United Kingdom's ('UK') international and national obligations for site, species and habitat protection are fully met in all planning decisions;
- Look for development to provide net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally;
- Help to ensure that development does not damage, or restrict access to, or the study of, geological sites and features or impede the evolution of natural processes and systems especially on rivers and the coast;
- Forge and strengthen links between the town and country planning system and biodiversity action planning particularly through policies in local development plans and the preparation of supplementary planning guidance that adds value to Local Biodiversity Action Plans ('LBAP') by highlighting the ways in which the planning system can help to deliver the objectives of LBAPs in practical ways;

5.2.7 Section 6 of the Environment (Wales) Act 2016 places a legal obligation on public bodies in Wales to 'maintain and enhance biodiversity' whilst carrying out their functions. Section 7 of that Act requires Welsh Ministers to publish and maintain lists of species and types of habitats in Wales that are regarded as of 'principal importance' for the purpose of maintaining and enhancing that biodiversity. This section of the Act replaces the

biodiversity duty originally outlined in Section 42 of the NERC Act 2006 for both England and Wales.

- 5.2.8 The list of species and habitats of principal importance currently includes 1,150 species and 53 habitats.

5.3 Impacts on Designated Sites

- 5.3.1 The section below provides an evaluation, description of potential impacts and assessment of ecological effects for designated sites relevant to the study area. This information is summarised in Table 2.

Table 2. Designated Sites Potential Impacts Summary

Is the development within 10km of a Special Area of Conservation (SAC), Special Protection Area (SPA) or Ramsar Site?	Yes
Is the development within the Impact Risk Zone of a Site of Special Scientific Interest (SSSI)?	Yes
Is the development within 250m of a Local Wildlife Site and/or Ancient Woodland?	No

- 5.3.2 The proposed works lie within the Glannau Porthaethwy SSSI. For each SSSI, Natural Resources Wales has prepared a list of Potentially Damaging Operations (PDO), which can only be undertaken after consultation and consent. For this site, the PDO list includes the following: "Erection of permanent or temporary structures or the undertaking of engineering works, including drilling or the laying, maintenance or removal of pipelines and cables, above or below ground". As a result, it is highly likely that the proposed works will require consent from Natural Resources Wales, and consultation must take place with them prior to works commencing. In addition, the presence of the SAC in close proximity to the works will be of interest to Natural Resources Wales, and they should be consulted in this matter, to gain their views on the potential for impacts on the international designation. Depending on their view on the potential for a significant effect on the SAC, a Habitat Regulations Assessment to formally assess impacts on the SAC may be required.

5.4 Impacts on Habitats

- 5.4.1 It is considered that, based on the scope of the works and the terrestrial habitats identified, no adverse impact towards woodland, scrub or grassland is considered likely.
- 5.4.2 Without appropriate mitigation, a minor adverse impact at site level is predicted towards the rocky shore and intertidal sediment habitats identified.

5.5 Impacts on Species

Tide Swept Community

- 5.5.1 The flora and fauna forming the tide-swept communities in this area can be highly sensitive to disturbance in the sediment. Without mitigation, some of this community may be at risk of significant adverse impact at a local level.

Bats

- 5.5.2 During development, bats can be disturbed in the short term by increased human presence at the site, increased noise or changes to the area's layout, temperature or humidity (these can affect commuting routes). In addition, changes to bat roosts can have long-term effects such as reduced roosting space or loss of roosts altogether, changed ventilation, increased human activity and / or external lighting near flight paths and commuting routes.
- 5.5.3 Without mitigation, particularly during construction, bats may be discouraged from the area or disrupted in their foraging or commuting behaviour, leading to minor adverse impacts at site level.

Otters

- 5.5.4 Otters and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended by the CROW Act 2000), and under the Conservation of Habitats and Species Regulations 2017.
- 5.5.5 Otters are highly territorial animals with large home ranges. Depending on the quality of the habitat and availability of food, males can range up to 35km. Otters will continue to try and use routes if alternatives are not included in a mitigation strategy.
- 5.5.6 Potential impacts on otters could potentially include: habitat loss, fragmentation or degradation in or near water bodies; holts and resting places being removed; disturbance to resting and feeding places; disturbance to their commuting routes (e.g. by road bridge or culvert works), increasing the likelihood of otters being killed or injured on roads; and changes to water quality which could also affect food sources. Hence, without mitigation, a legal offence may be committed.

Birds

- 5.5.7 All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to intentionally or recklessly disturb them while they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.
- 5.5.8 The Birds of Conservation Concern initiative ⁸ publishes lists of Red and Amber species. Birds on the Red list are of high conservation concern within the UK, while those on the Amber list are of medium conservation concern. In addition, a number of bird species are also included as Species of Principal Importance under the provisions of the NERC Act 2006.
- 5.5.9 Site clearance or construction works, if undertaken during the bird breeding season, could potentially damage active nests and result in an offence under the legislation. Impacts to consider include damaging or removing breeding sites, disturbing birds and their young,

⁸ Eaton, M.A. et al (2015). Birds of Conservation Concern 4: The population status of birds in the UK, Channel Islands and the Isle of Man. British Birds 108, pp708-746.

removing vegetation or changing habitats, demolishing or changing buildings or natural features like rock faces, and removing ground nest habitats with activities like soil stripping.

- 5.5.10 On this site in particular, the island and its habitats are clearly important as a resource for wintering waders. Without mitigation, there may be an adverse impact at a local level towards this group.

6 Recommendations

6.1 Introduction

- 6.1.1 The recommendations below for further survey and mitigation are based on the results and assessment set out above, taking into account standard published guidance from a number of sources (as referenced through the report), including the GOV.UK information on Planning and Development ^{9 10}.
- 6.1.2 Individual Local Planning Authorities have their own requirements for ecological information to support the validation and assessment of planning applications. These requirements often vary widely between Authorities and sometimes do not accord with national guidance- including that issued by the statutory nature conservation organisations. As a result we have applied the more consistent national guidance to our survey and mitigation recommendations set out below.
- 6.1.3 In this instance, guidance from the JNCC contained within their publication 'General advice on assessing potential impacts of and mitigation for human activities on MCZ features using existing regulation and legislation' (June 2011) has been followed.

6.2 Consultation

- 6.2.1 Due to the development taking place within a SSSI, and adjacent to an SAC, consultation with Natural Resources Wales is vital prior to works taking place. It is likely that formal consent for a Potentially Damaging Operation will be required for the construction on the new footbridge. In addition, a Habitats Regulations Assessment may also be needed to fully assess the potential for impacts on the SAC.

6.3 Mitigation Measures

Tide Swept Communities

- 6.3.1 The scope of works involved requires replacement of the existing footbridge in the same location. As such, this very limited scope should require no removal of sediment, and no major movement of sediment, thereby allowing quick recovery of the substrate and minimal predicted impact on the flora and fauna present.
- 6.3.2 The scope of works will need to contain measures that avoid or minimise direct habitat loss through the addition of new permanent structures within the sediment. As this project involves a direct replacement of an existing structure, this is considered to be appropriate and no distinct mitigation is required.
- 6.3.3 Materials used to embed the structure must avoid compromising the chemical or hydrological integrity of the water column, or pollution of the sediment. A full method statement as to how this can be achieved must be provided in order to comply with the

⁹ <https://www.gov.uk/topic/planning-development/protected-sites-species>

¹⁰ <https://www.gov.uk/guidance/natural-environment#biodiversity-and-ecosystems>

terms of any Marine Licence issued.

- 6.3.4 There is no impact predicted as a result of operational use of the footbridge on the marine environment, and therefore no mitigation is proposed in this regard.

Bats

- 6.3.5 During construction, illumination during hours of darkness must be avoided. This will ensure that bats are protected from unnecessary light pollution and any adverse impact as a result of the proposals will be avoided.

Otters

- 6.3.6 To reduce the potential for impacts on otters, noise and lighting disturbance near the shorelines should be minimised. No holts or refuges have been identified within the area, and therefore no specific mitigation is recommended for holt protection. However, work on or near the rocky shore habitats should proceed with caution. If any otters are observed, works should cease and the advice of a suitably qualified ecologist sought before work recommences.

Birds

- 6.3.7 The site is clearly of significant importance to wintering waders, in particular oystercatchers. Some disturbance is expected, as the species uses the site both for resting and feeding. However, the limited scope and timescale of the project is not predicted to have a significant impact on the species as long as the following mitigation is followed:
- If low tide, or acceptable working conditions for the project team, occurs within the first hour following sunrise, or the final hour prior to sunset, no work must be carried out and no machinery or sources of potential disturbance present. This will ensure that the birds have an appropriate window in which to feed during the times of day when they are most active and in need of energy to survive.
 - No work must occur within the hour immediately before or after a severe weather event, such as heavy rain, snow or high winds, if that event coincides with mid-low tide, when the sediment is exposed. This will ensure that the birds have enough time to recover from such an event and do not lose feeding time as a result of disturbance.
- 6.3.8 Works should be completed prior to the start of February, when it is considered that the heronry will once again be likely to be active on Ynys y Big. Herons during their nesting phase are vulnerable to disturbance, and works of this nature are likely to cause such a disturbance. If work continues into January and herons are observed returning to nests, or beginning to build nests, all work must cease and a qualified ecologist contacted for advice before work recommences.
- 6.3.9 No vegetation clearance is expected as a result of this project, and so no specific mitigation is provided in this regard.

Appendix 1: Desk Study

SSSI Citation: GLANNAU PORTHAETHWY

National Grid Reference: SH 581740 to SH 541712

Site Area: 67.6 ha (approx)

Description:

The site extends along 4 km of the shore of Menai Bridge/Porthaethwy in the Menai Strait from Britannia Bridge to Craig y Don, and has been selected for its marine biological features. This south-east facing shore is sheltered from wave-action and consists of a mixture of mud, bedrock, pebbles, cobbles and boulders. The shores of the islands of Ynys Gorad Goch, Ynys Welltog, Ynys Benlas, Ynys Tysilio, Half Tide Rock, Ynys Faelog, Ynys Tobig, Ynys Gaint, Ynys Castell and Ynys y Big are also included in the site.

The shore is of special interest as it is the most extensive sheltered rock shore in the area between Bardsey Island and Great Orme's Head and because it supports the greatest diversity of marine plant and animal communities on this type of shore within this area. The shore is also important for the presence of five marine communities of restricted national distribution, five diverse rockpool and overhang communities, and for exhibiting the most comprehensive community zonation characteristic of sheltered rocky shores.

In areas such as Ynys Welltog and beneath the Menai Bridge, rocky shore communities form visible 'zones' down the shore. Such patterns of zonation are the result of different species' tolerance's to desiccation, temperature extremes and sunlight and their differing abilities to compete with other species for space. Above mean high water, rock surfaces subject to sea-spray support a zone of yellow and grey lichens. Beneath this zone the black-tar lichen *Verrucaria maura* grows on bedrock, cobbles and pebbles, forming a wide band. A band of channel wrack *Pelvetia canaliculata* and spiral wrack *Fucus spiralis* occurs just below this level, followed by successive zones lower down the shore of knotted wrack *Ascophyllum nodosum*, bladder wrack *Fucus vesiculosus*, and serrated wrack *Fucus serratus*. Mixed kelps such as oarweed *Laminaria digitata*, sugar kelp *Laminaria saccharina* and cuvie *Laminaria hyperborea* dominate the lower reaches of the shore in a narrow band, with a diverse range of associated seaweeds including sea-oak *Halidrys siliquosa*, bootlace weed *Chorda filum*, and the red seaweeds *Cystoclonium purpureum*, *Cryptopleura ramosa*, *Phycodrys rubens* and species of *Ceramium*.

The area of the Menai Strait known as the Swellies experiences strong tidal currents of up to 8 knots during spring tides and, as a result, supports a wide range of filter-feeding animals, including four tide-swept communities of restricted national distribution. After the Menai Strait, the second largest concentration of these communities in Wales is within Milford Haven, with a few small patches of certain of these communities on the Gower Peninsula, Ramsey Island and St. Tudwal's East. These tide-swept communities are individually characterised by knotted wrack, serrated wrack on bedrock, serrated wrack on mixed substrata, or by oarweed, as well as a diverse array of filter-feeding animals. Such species, occurring on seaweeds and rock surfaces, include the sponges *Hymeniacidon perleve* and *Esperiopsis fucorum*, the bryozoans *Dynamena pumila*, *Flustrellidra hispida*, *Membranipora membranacea* and *Bugula plumosa*, the ascidian *Botryllus leachi* and star ascidian *Botryllus schlosseri*, and hydroids. Near Church Island an abundant population of the daisy anemone *Cereus pedunculatus* is associated with the tide-swept oarweed community. Another unusual community –

species of small marine worms and molluscs in sheltered muddy gravel – is found at three locations along this shore. In Wales, this community is restricted to the Menai Strait and Milford Haven.

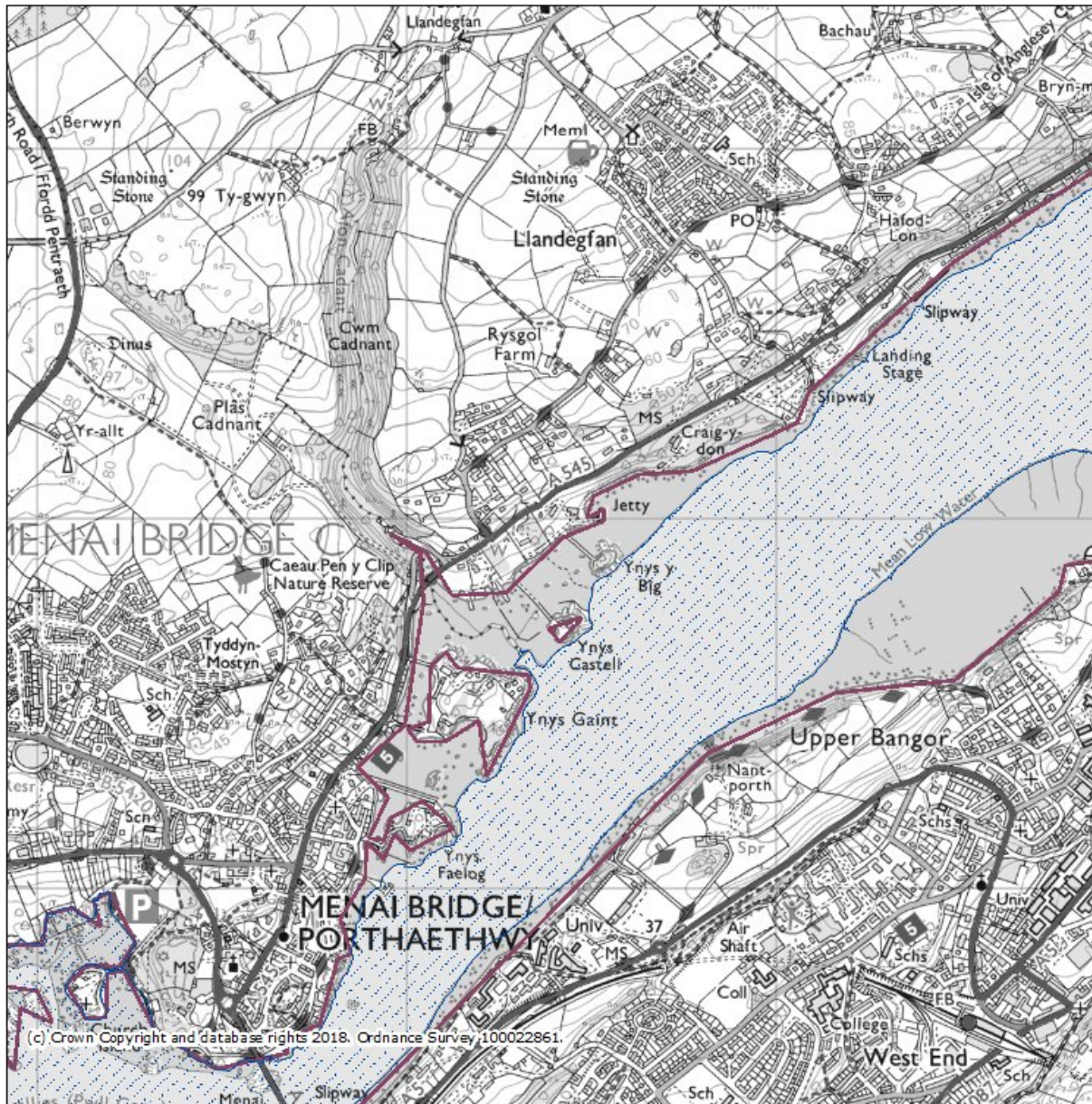
Distinct communities of plants and animals inhabiting rockpools and the surfaces under rock overhangs are particularly diverse on this shore. Sediment-floored rockpools with fucoids and kelps and hydroid-dominated pools on mixed substrata are present throughout the site. Deeper rockpools dominated by serrated wrack and oarweed are found on the shore between the two bridges, and on Ynys Gorad Goch. Overhanging surfaces on the Menai Suspension Bridge support a diverse community that includes purse sponge *Grantia compressa*, breadcrumb sponge *Halichondria panicea*, the sponge *Ophilitaspongia seriata* and the red seaweeds *Lomentaria articulata*, *Membranoptera alata*, and dulse *Palmaria palmata*. Other lower shore rock overhangs on the site support a diverse community of filter-feeding animals, such as sponges, ascidians and bryozoans. Species commonly found here include the sponges *Hymeniacidon perleve*, *Haliclona rosea* and breadcrumb sponge, the bryozoan *Dynamena pumila*, dahlia anemone *Urticina felina*, plumose anemone *Metridium senile* and the star ascidian.

Owing to its close proximity to Traeth Lafan, an internationally important site for wading birds and wildfowl, relatively undisturbed parts of this shore provide important high tide roost areas for waders that feed at Traeth Lafan and elsewhere in the Menai Strait. For example Ynys y Big provides an important roost site for oystercatchers. Additionally, otters have been recorded in and around the Afon Cadnant.

Menai Strait & Conwy Bay SAC

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Magic Map



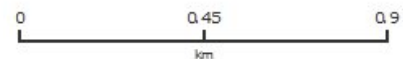
Legend

Special Areas of Conservation (Marine Components GB)

- Candidate
- Designated
- Possible

Special Protection Areas (Marine Components GB)

- Classified
- Potential



Projection = OSGB36

xmin = 253900

ymin = 371500

xmax = 258900

ymax = 374300

Map produced by MAGIC on 13 November 2018.
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Annex I habitats that are a primary reason for selection of this site

1110 [Sandbanks which are slightly covered by sea water all the time](#)

Menai Strait and Conwy Bay between mainland Wales and Anglesey includes the Four Fathom Banks complex, which is a relatively rare type of subtidal sandbank in Wales, in that it is comparatively large, and is fairly sheltered from wave action but situated in an area of open coast. The sandbanks vary from stable muddy sands in areas that experience weak tidal streams to relatively clean well-sorted and rippled sand in the outer area of the bank where tidal streams are stronger. In very shallow waters, particularly in the inner shore areas, relatively species-rich sandy communities are dominated by polychaetes such as *Spio filicornis*. In some years when numbers of bivalves are high, internationally important flocks of common scoter *Melanitta nigra* have been observed to congregate in the area of the Four Fathom Banks complex to feed.

1140 [Mudflats and sandflats not covered by seawater at low tide](#)

The intertidal **mudflats and sandflats** of the Menai Strait and Conwy Bay on the north Wales coast include Traeth Lafan, the shores of the Menai Strait, and the Foryd estuary. Traeth Lafan is an example of an almost fully marine extensive mud and sandflat that experiences a broad range of wave exposure, providing a range of sediment types with typical associated communities. For example, the shrimps *Haustorius arenarius* and *Bathyporeia sarsi* are found in mobile clean sand, whilst bivalves such as the cockle *Cerastoderma edule*, the gaper *Mya arenaria* and Baltic tellin *Macoma balthica* are common in more sheltered fine and muddy sand. The sand-mason worm *Janice conchilega* is found in more tide-swept areas. The mixed sediment shores between Beaumaris and Lleiniog are highly productive shores that are rich in animal and plant species. These shores include a nationally important biotope that is rare in the UK. The nationally scarce dwarf eelgrass *Zostera noltei* is also found at this site.

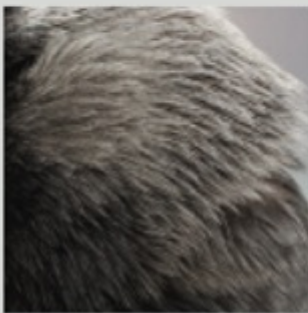
1170 [Reefs](#)

The reefs of the Menai Strait and Conwy Bay between mainland Wales and Anglesey include the tidal rapids of the Menai Strait, and limestone reefs along the south-east Anglesey coast and around Puffin Island and the Great and Little Ormes. The environmental conditions of the Menai Strait are unusual. The water is relatively turbid, containing a relatively high level of suspended material, and although the area is largely sheltered from wave action tidal streams are strong, reaching up to 8 knots (4 m s⁻¹) in places during spring tides. As a result, the rocky reefs of the Strait are dominated by a diverse and unusual mixture of animals that feed mainly by filtering their food from the seawater. For example, colonies of sponges, such as the breadcrumb sponge *Halichondria panicea*, grow to unusually large sizes, with single colonies covering areas of over 1 m². The limestone reefs are home to several species that bore into rock, and some limestone specialists are restricted to this relatively rare habitat. Species include the rock-boring sponge *Cliona celata*, piddocks *Hiattella arctica*, polychaete worms *Polydora* sp., and acorn worms *Phoronis hippocrepia*.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

1160 [Large shallow inlets and bays](#)

8330 [Submerged or partially submerged sea caves](#)



baker*consultants*