



HARBOUR AT YNYS Y BIG, MENAI BRIDGE: ECOLOGICAL ASSESSEMENT

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Executive Summary

Site	Harbour at Ynys Y Big, Glyngarth, Menai Bridge, Anglesey LL59 5NP (SH 5650 7300).
Surveyors	Tim Yardley and Landry Green.
Proposed work	Installation of a yacht mooring with pontoon and boat cradle below the high tide line, in a private harbour .
Habitats affected	Intertidal mudflats, stone wall.
Type of survey	Ecological walk over survey (4 th June 2019).
Results of survey	<ul style="list-style-type: none">• Harbour site is entirely intertidal mudflats with vegetation limited to marine algae.• Site is typical of an area of exposed mudflats on the Menai Strait shore.• No specific protected or notable species recorded.• Surrounding areas have good habitat for nesting birds, but not within site itself.• Works take place within a SSSI and close to a SAC designated for marine conservation.
Survey conclusions	<ul style="list-style-type: none">• Works likely to be low impact as they will be carried out by hand.• Main impact possible minor reprofiling of the substrate, may be better than a boat dragging over it, as would otherwise be the case.• Runoff of silt or chemicals must be avoided.• No further survey required.• Some simple RAMs are recommended.
RAMs and Mitigation	<ul style="list-style-type: none">• No sensitive areas around the site should be accessed• No excavation or digging to be permitted.• The utmost care must be taken to prevent runoff into the marine environment.• No chemicals or fuel must be brought into the work area.• Site workers will have access to spill kits and any spillages must be cleaned up immediately via approved methods before the tide comes in.

1.0 Introduction

- 1.1 Enfys Ecology Limited were commissioned by Donbass Ltd to carry out an ecological survey of an area of the harbour at Ynys y Big, Menai Bridge, Anglesey. Ynys Y Big is a residential property with grounds on the Anglesey mainland, opposite the island of the same name in the Menai Strait.
- 1.2 Donbass Ltd, on behalf of the property owners propose to install a mooring for a yacht within the harbour, comprising a mooring and floating pontoon attached to the harbour wall, and a platform on the seabed to support the boat at low tide. All works will be below the high tide mark or on the harbour wall, there are no proposed terrestrial works.
- 1.3 The area surveyed comprised the harbour of Ynys y Big below the high tide mark, and the surrounding sea wall. The immediate terrestrial surroundings were also walked over. The survey area was small, at approx. 1,000m² and is centred on approximate OS grid reference SH 5650 7300.
- 1.4 Enfys Ecology carried out an ecological walk over survey of the site including a protected species survey and an examination of the habitats and plant species present. The assessment is equivalent to a Preliminary Ecological Appraisal however a phase 1 habitat survey was not included due to the as inappropriate to a marine environment and small size of the site, which is essentially a single habitat.
- 1.5 The purpose of the survey was to gain baseline ecological data on the species and habitats present on the site, identify any potential ecological constraints to potential development arising from the site or surrounding area, and recommend suitable general mitigation and/or compensation strategies for these issues, as appropriate.
- 1.6 The survey work to inform this report was carried out on 4th June 2019. Habitats and species found within a discrete area of land are obviously subject to change; this report should therefore be considered valid for a period of two years from this date in accordance with best practice.
- 1.7 We understand that the proposed works are the construction of moorings for a yacht. This will comprise a floating pontoon attached to steel beams attached in turn to the inner face of the breakwater wall. The pontoon will rise and fall with the tide and will be used to access the yacht which will be moored to the harbour wall. To prevent damage to the hull caused by repeated contact with the sea bed as the harbour dries a steel frame will be placed on (but not attached to) the sea bed. Plastic plates attached to the upper side of this frame will support the craft off the sea bed during low tide.
- 1.8 We further understand that all installation works will be carried out by hand, with the pontoon and frame constructed of parts prefabricated off site. There will be no need to access the harbour with any vehicles or machinery. Works will be carried out at low tide.

2.0 Methodology

- 2.1 A survey was conducted by an experienced ecologist walking over the site and (where access permitted) immediately adjacent areas. All habitat types on site were visited. Notes were taken on the habitat types present, and their suitability for protected species. A list of floral species was recorded where appropriate. A search for evidence of protected species was carried out, though in practice this was limited to what is possible in a tidal environment. An inspection of the underlying substrate was also undertaken, but limited to a surface inspection without breaking ground to avoid disturbing the communities within.
- 2.2 Magic Map (Magic Map 2019) was accessed to determine the presence of statutory and non-statutory sites for nature conservation within and around the proposed development. A Cofnod Data search was not carried out for this report.
- 2.3 The survey of the site was conducted on the 6th June 2019 by Enfys ecologist Tim Yardley accompanied by Landry Green. Conditions were overcast with light rain.
- 2.4 The results of this survey consist only of those species encountered during a short space of time on one day; during the survey. Species that use the site infrequently or at different times of the year may not be recorded, and the absence of species from the results of a single survey should not be taken as indicating the species definite absence from the area in question.

3.0 Site Description

3.1 Overview

- 3.1.1 The survey area comprised the harbour of Ynys y Big, Menai Bridge, a roughly square area of intertidal flats on the north side of the Menai Strait. The harbour is partially enclosed to the south and east by a stone breakwater and wall, between 1.5m (at the landward end) and 3m (seaward end) in height. The area enclosed by the wall is entirely covered in tidal mud and shingle flats, with no terrestrial vegetation save a strip at the western end above the tide line. Seaweed was scattered across the area. An aerial view of the survey area is shown in figure 2.1, below. (in addition, a low tide image is provided in image 2.3, overleaf).



FIGURE 2.1. SURVEY AREA - THE APPROXIMATE SURVEY BOUNDARY IS OUTLINED IN RED. THE AREA IS SHOWN AT HIGH TIDE SHOWING THE APPROXIMATE HIGH TIDE LINE; THE ENTIRE OUTLINED AREA IS DENUDED OF WATER AT LOW TIDE.
IMAGE © GOOGLE 2019

- 3.1.2 The harbour is on the northern side of the Menai Strait, which lies to the east and south, save a narrow peninsula of land along the southern side of the harbour, which is mostly wooded. The land along the coast to the north and south is also heavily wooded, part of a broad strip of mature broadleaved woodland which runs (with interruptions) along the coast for several kilometres. To the west within the grounds of Ynys Y Big house the survey area is bordered by an expanse of short mown amenity grassland lawns, with some longer grassland and wildflowers under the woodland margins.

3.1.3 The wider surroundings are built up, with residential properties along the coast and inland on the edge of Menai bridge. Development is low density however, with many large mature trees and hedgerows, and open grassland (though largely short). The tide retreats some distance (approx. 150m at mean low water) at low tide, exposing a large area of tidal mudflats stretching for kilometres along the Menai Strait shores. The area is an important area of highly productive shores with a diverse range of sediment types and structure providing habitat for an important assemblage of marine communities. An aerial view of the wider survey area is shown in figure 2.2 below.



FIGURE 2.2. THE WIDER AREA AROUND THE SITE - THE APPROXIMATE SURVEY BOUNDARY IS SHOWN IN RED. IMAGE © GOOGLE 2019.



FIGURE 2.3. THE SURVEY AREA AND SURROUNDINGS AT LOW TIDE.
IMAGE © MICROSOFT 2019.

3.2 Protected sites

- 3.2.1 The surveyed area lies within the Glannau Porthaethwy Site of Special Scientific Interest (SSSI) designated for its marine biological features resulting from the south east facing shore sheltered from wave action and mixed substrate. The area is characterised by diverse marine communities, some of restricted national distribution, and comprehensive zonation of rock shore communities (CCW 2003).
- 3.2.2 The marine environment of the adjacent strait is designated as part of the Menai Strait and Conwy Bay Special Area of Conservation (SAC), beginning at the low tide line 15m southeast of the site (the site itself is not part of the SAC). The sea here was designated as a SAC due to the presence of a large area of tidal habitats including intertidal mudflats, sandbanks and reefs, supporting important marine communities. The SAC lies below the survey area at the low tide line and runoff from the site will therefore naturally flow towards the SAC areas, or be washed this way by the tides.
- 3.2.3 The site lies within the Anglesey Area of Outstanding Natural Beauty (AONB). The AONB was designated in order to protect the aesthetic appeal and variety of the island's coastal landscape and habitats from inappropriate development.
- 3.2.4 No other statutory or non-statutory protected sites of marine or ecological relevance intersect with the survey area, or lie within 100m.

3.3 Habitats.

- 3.3.1 The harbour comprises an open area of intertidal mudflats, containing a mixture of shingle (approx. 80% of the area) and mudflats, sloping gently to the west. At the time of survey (at low tide) the substrate was firm towards the upper (western) end, towards the high tide mark, but very wet towards the lower end of the site. The shingle was almost all coarse gravel, averaging between 5-20mm, with occasional larger pebbles and sand. The lower end of the site was wet mud and shingle. The substrate was generally exposed, but the area was dotted with scattered seaweed, including: *Pelvetia canaliculata*, *Fucus spiralis*, and what are believed to be *Fucus vesiculosus*, and *Porphyra* and *Ulva sp.* Not all were attached to the substrate and may have been deposited by tidal action. The egg cases of Common whelk (*Buccinum undatum*) were also common. The lower parts of the breakwater and wall lining the south and east sides of the harbour were thickly colonised by marine algae, including *Pelvetica*.
- 3.3.2 The substrate contained evidence of marine invertebrates including isopods, amphipods, periwinkles (*Littorina littorea*), and the shells of Common whelk, blue mussels (*Mytilus edulis*), cockle (*Cerastoderma edule*) and barnacles. No evidence of marine worms, such as lugworms or polychaete worms were observed, though these should be assumed to be present in the substrate. The remains of crabs were also observed.



PHOTO 3.1 THE HARBOUR SURVEY AREA



PHOTO 3.2. THE WESTERN, LANDWARD END.



PHOTO 3.3 THE WALL AND BREAKWATER



PHOTO 3.4. TIDAL FLATS OUTSIDE HARBOUR TO THE EAST.

- 3.3.3 There were no terrestrial plants in the surveyed area except a narrow strip at the western end, just above the mean high tide mark, these included scurvygrass (*Cochlearia officinalis*), spear leaved orache (*Atriplex prostrata*), sea kale (*Crambe maritima*) and wild cabbage (probably *Brassica oleracea*). Red valerian (*Centranthus ruber*) was also found on the very margins of the shale.
- 3.3.4 There was no other vegetation in the survey area. The immediate surroundings were short mown amenity grassland, cut very short (under 5cm), dominated by grasses including perennial rye (*Lolium perenne*), and cock's foot (*Dactylis glomerata*). There are almost certainly more grass species which could not be identified in the very short sward with no flowers or seed heads. There were few forbs including common daisy (*Bellis perennis*), dandelion (*Taraxacum officinale* agg.), and ribwort plantain (*Plantago lanceolata*), but this was generally species poor.



PHOTO 3.5 THE TOP OF THE BREAKWATER



PHOTO 3.6. CLIFFS IMMEDIATELY TO THE WEST



PHOTO 3.7 THE BREAKWATER



PHOTO 3.8 DETAIL OF WALL



PHOTO 3.9. DETAIL OF SUBSTRATE.

3.3.5 The breakwater and top of the wall forming the southern boundary of the site was dominated by mosses and salt tolerant species including thrift (*Armeria maritima*), scurvygrass, herb Robert (*Geranium robertianum*), sea mayweed (*Tripleurospermum maritimum*), sea plantain (*Plantago maritima*), ivy leaved toadflax (*Cymbalaria muralis*), *Polypodium* ferns and red valerian. The nearby woodland and especially the margins are significantly more diverse but outside the scope of this report.

4.0 Survey Results

- 4.1 The survey area appears to be a typical example of Menai Strait intertidal foreshore. Plant and animal species recorded were not unusual for the region, and no notably rare flora or fauna was recorded. Although no sifting of the substrate was carried out, nothing was seen to suggest the area is atypical for the wider area. Faunal diversity was low, but not unexpectedly so given the habitat and methods used.
- 4.2 The area was almost devoid of vascular plants, (not unexpected for an intertidal area) and those present were species common to coastal areas throughout Wales.
- 4.3 The area had very low potential for protected species, being intertidal. Otter are known to be present on the Menai strait and so may pass through the area, but the area contained no suitable locations for holts or resting places. There were numerous bird droppings along the top of the breakwater and southern wall, but this area is very open and exposed (short grassland or hardstanding); there were no nests or evidence of nesting; while the immediate surrounding areas most certainly contain important nesting and roosting habitat for nesting birds, the survey area itself does not.
- 4.4 The cliffs and woodland immediately to the south of the site have potential to be used by nesting birds, possibly including rare or protected species, as does Ynys Y Big Island to the southeast. The cliffs to the south of the harbour wall are very close to the site (under 10m) but face away from the harbour and so are screened from any activity in the harbour.
- 4.5 No invasive non-native species were recorded.

5.0 Discussion and Evaluation

- 5.1 Overall the works are expected to be low impact, not principally because of the nature of the site, but because the works will be carried out by hand and do not require excavation, dredging, or digging into the substrate. The pontoon will be fixed to the wall, but will only be attached in a few places and will not affect the structure of the wall or cause significant damage. The metal frame will rest on the seabed, but will not be attached. It may settle into the substrate, but the main impact is likely to be any change to the substrate profile of the harbour caused by the interaction of the structure with the tide, which may cause minor reprofiling, but this is not thought to be high impact. The effects will probably be less than a boat repeatedly dragging over the seabed with the tide, which would be the present condition when the harbour is in use.
- 5.2 The works are therefore very small scale and unlikely to significantly negatively affect the species communities within the substrate, or the wall, the only areas directly impacted.

- 5.3 The works as carried out by hand are unlikely to affect nesting birds or other communities on the nearby cliffs. There may be some noise from tools for a limited time, however the harbour and garden area already see human activity, and as only handheld power tools will be used and the cliffs are screened from the harbour this is unlikely to be significant. Nevertheless, to minimise any potential disturbance site workers should be restricted to the harbour area and not access the top or base of the cliffs adjacent to the site. There should be no disturbance to any sensitive areas further afield, including Ynys Y Big Island.
- 5.4 The works will take place on the edge of the Glannau Porthaethwy SSSI. Therefore SSSI consent will be required from Natural Resources Wales (NRA) prior to any works commencing. Also, while the area is not within the Menai Strait and Conwy Bay SAC, the SAC lies close by and below (“downstream”) of the works site, and so any runoff created will drain towards the SAC area, and/runoff or pollutants will be carried there by the tide.
- 5.5 Intertidal mudflats are considered to be Habitats of Principal Biological Importance on Section 7 of the Environment (Wales) Act, 2016, important habitats based on the guidelines from the Institute of Ecology and Environmental Management (IEEM 2006) and Priority Habitats on the former national biodiversity Action Plan (UK BAP 2007) or local Biodiversity Action Plan (BAP).
- 5.6 The main potential ecological impacts of the works are therefore considered to be minor changes to the substrate profile of the harbour, and the possibility of runoff of either silt or pollutants or chemical leachate from the works or installed items. The works themselves will otherwise have limited impact on local ecosystems, and disturbance during the works will be minor and limited in duration as works will be carried out by hand.
- 5.7 No further survey work is required, however a few measures (Reasonable Avoidance Measures or RAMS) are set out in section 6 below which should be followed prior to, during and after the installation work in order to minimise any possible impacts, however minor.
- 5.8 There may be minor impacts from the ongoing use of the site as a mooring, where previously it was unoccupied. Care must be taken to prevent spillage of fuel, refuse or other materials from the boat, as in any marine environment.

6.0 Reasonable Avoidance Measures and Mitigation

6.1 We understand that all works will be carried out by hand, in daylight and at low tide.

6.2 A few suitable Reasonable Avoidance Measures (RAMS) will be implemented to reduce the potential to impacts. All measures in this section should be implemented as appropriate.

6.3 *Reasonable Avoidance Measures*

6.3.1 Prior to the works

- Project designers must ensure that all materials, paints, glues or other materials as needed which will enter the area are suitably approved for marine use, will not leach chemicals into seawater in a potentially sensitive site.
- All site workers will be briefed on the potentially sensitive nature of the site and the presence of the SAC and SSSI, and must be familiar with the measures set out in this document.
- A marine licence and SSSI consent form NRW will be required for the works, if not already obtained.
- An appropriate Biosecurity Risk Assessment for marine environments should be carried out prior to any works, and the resulting actions implemented, as appropriate.

6.3.2 During works

The following measures should be implemented at all times during the works:

- Working areas should be kept to the minimum required.
- No excavation or digging to be permitted.
- The utmost care must be taken to prevent runoff into the marine environment.
- No chemicals or fuel must be brought into the work area unless strictly required for the works. Refuelling and storage of potential pollutants should be restricted to offsite compounds and hardstanding areas, well away from the sea. No chemicals, sealants etc will be used in any location where they may drain into the sea except when being applied directly to the installation.
- Any chemicals required (if any, for example glues or sealants) must be certified for marine use.
- Site workers will have access to spill kits and any spillages must be cleaned up immediately via approved methods before the tide comes in.
- At the end of works each day, the site should be inspected by a responsible individual to ensure that the above protocols are being complied with.

6.3.3 Post works

- The same strictures apply for any repair or follow up works to the structures.
- Care must be taken to prevent any runoff or pollution from refuse, chemicals etc during routine use by yachts.

7.0 References and Information Sources

CCW (2003) Site of Special Scientific Interest Citation: Glannau Porthaethwy. Countryside Council for Wales. Available via Cofnod Website: www.cofnod.org.uk/resources. Accessed 11/06/2019.

Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment*. IEEM.

MAGIC Map 2019: Magic Map Application: <https://magic.defra.gov.uk/magicmap.aspx>. Accessed 11/06/2019.