Deganwy Marina

Deganwy Quay, Deganwy, Conwy LL31 9DJ

Environmental information to inform any required Habitats Regulations Assessment by the Competent Authority (Shadow HRA)

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1. Background to proposed works

Deganwy is a tidal gate (sill) controlled marina located on the north side of the Conwy Estuary.

The image below shows the marina outlined in blue.

Operating depths in Deganwy Marina were previously maintained using a small cutter suction dredger discharging into a beneficial disposal site in the Conwy Estuary (IS035). This disposal site was last used in 2017 and is therefore currently classed as 'disused'. The licence was DML1533, this covered both Deganwy and Conwy Marinas, using the same plant. This licence restricted dredging to between 1st October and 14th April and to between 1 hour either side of high water.

More recently, Deganwy Marina altered the dredging method to Water Injection Dredging (WID) under licence DML1942. WID has no specific disposal location (it generates a large mud plume that travels with the tides). This licence restricted dredging to between 1st October and 14th April, and no dredging when tidal range was less than 3.5m. These conditions also apply to the current Conwy licence, but only for an ebb tide. This is obviously intended to ensure optimum ebb tide conditions for the dispersal of dredged material (i.e. material leaves the estuary).

In order to reduce conflict between these two separate dredging licences NRW introduced a condition requiring each site to gain prior written approval before any dredging commences.

For WID the disposal site is indeterminate as the material just enters the estuary via the marina entrance. Such disposal is currently consented at both flood and ebb tidal states.

For background information, the Conwy dredging uses a cutter suction disposing the material at a single point in the estuary. The time and tidal range conditions are the same, but disposal is only permitted on the ebb tide. This is to ensure the suspended material moves out of the estuary.

The disposal from the cutter suction is typically 20% solids, WID generates a much higher density layer. From the cutter suction dredger, the discharge is at a relatively high rate and, combined with the ebb tide, disperses quickly. With WID the process is much slower, with a high-density layer flowing with gravity and tidal currents (which are much reduced at bed level). Dispersion of this material within the water column is much less certain, such material can remain on the bed for some time. WID works best when discharging into high energy flows and appropriate tidal directions.

Deganwy Marina has not found the use of WID to be a satisfactory method for maintaining the marina depths. This has meant that they need to alter the dredging method.

It is therefore proposed that Deganwy reverts to the use of a cutter suction dredger with beneficial disposal into the estuary (from where the material originates).

2. Method statement

A small cutter suction dredger (Little Orme) will be used, with discharge into the estuary on ebb tides. This is all in accordance with the existing Conwy Marina licence on the opposite side of the estuary.

The maximum depth of removal is 2.5m, again all in accordance with the current licence.

The dredger will work into the area by removing the upper 300-500mm. The dredger will then relocate and work back into the area, removing a similar layer depth each time. This has proven to be the most efficient method for this plant and prevents holes being dug.

A floating pipeline will run from the rear of the dredger to the disposal site. The pipeline will be laid through the existing marina and restrained by moorings outside the marina. The discharge will be below MLW to ensure good redistribution within the tidal flow.

3. Habitats Regulations Assessment – procedure (from GOV.Uk Defra, published Feb 2021)

An HRA is required for any proposals that could affect the following protected sites:

- Special Areas of Conservation (including proposed areas) – applicable in this case.
- Special Protection Areas (including potential areas) – not applicable in this case.
- Ramsar Sites (including proposed sites) – not applicable in this case.

In this case the works are defined as a Project and an HRA is therefore necessary.

The HRA should be undertaken by the Competent Authority with relevant details being provided by the Applicant.

For clarification, the following is the recommended procedure:

1. **Screening** – check if proposal is likely to have a significant effect on a site's conservation objectives.

2. **Appropriate Assessment** – assess any likely significant effects in more detail and identify ways to avoid or mitigate any potential for an 'adverse effect on the integrity of the site'. This should include (GOV.Uk) "any mitigation measures that have been included as part of the proposal to remove or reduce potential adverse effects". At this stage it is necessary to conduct an 'integrity test'. The integrity of the site would be adversely affected under the following relevant examples:

   - destroy, damage or significantly change all or part of a designated habitat
   - significantly disturb the population of a designated species
   - change the site's physical environment, for example, by changing the chemical makeup of its soil, increasing the risk of pollution, or changing the site's hydrology.

   The GOV.Uk document states that the integrity test should consider the following:

   - the ecological requirements, conservation objectives and the current conservation status (if known) of the site's designated features that might be affected by the proposal
   - each potential effect on the European site, including the risk of combined effects with other proposals, and how they might impact on the site's conservation objectives
   - the scale, extent, timing, duration, reversibility, and likelihood of the potential effects
   - how certain you are of the effects occurring.
   - mitigation measures that have been proposed or conditions you can attach to avoid or limit the effects
   - how confident you can be that mitigation measures will be effective over the whole lifetime of the proposal - for example, the effects of construction, operation and decommissioning.

The GOV.Uk advice allows mitigation measures to be considered at the Appropriate Assessment stage and that these must be secured under conditions. Such conditions might include timing, pollution control etc. However, this only applies if the proposed mitigation is appropriate in demonstrating that there is no reasonable scientific doubt that the proposal will not have an adverse effect on the integrity of the site.

If a proposal fails the integrity test then the next stage must be considered.

3. **Derogations** – This applies if the proposal fails the 'integrity test'. For the integrity test the 3 legal tests are listed below:

   A. There are no feasible alternative solutions that would be less damaging or avoid damage to the site.

   B. The proposal needs to be carried out for imperative reasons of overriding public interest.

   C. The necessary compensatory measures can be secured.

4. Screening

The only protected site in the area is:

Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC (UK0030202).

The information below is a summary of the NRW Evidence Report 2018, the NRW Regulation 37 advice, and the JNCC (UK0030202) for this site.

Annex 1 habitats (primary reason) –

1110 Sandbanks which are slightly covered by sea water all the time. Indicative condition Favourable (medium confidence).

1140 Mudflats and sandflats not covered by seawater at low tide. Indicative condition Favourable (low confidence).

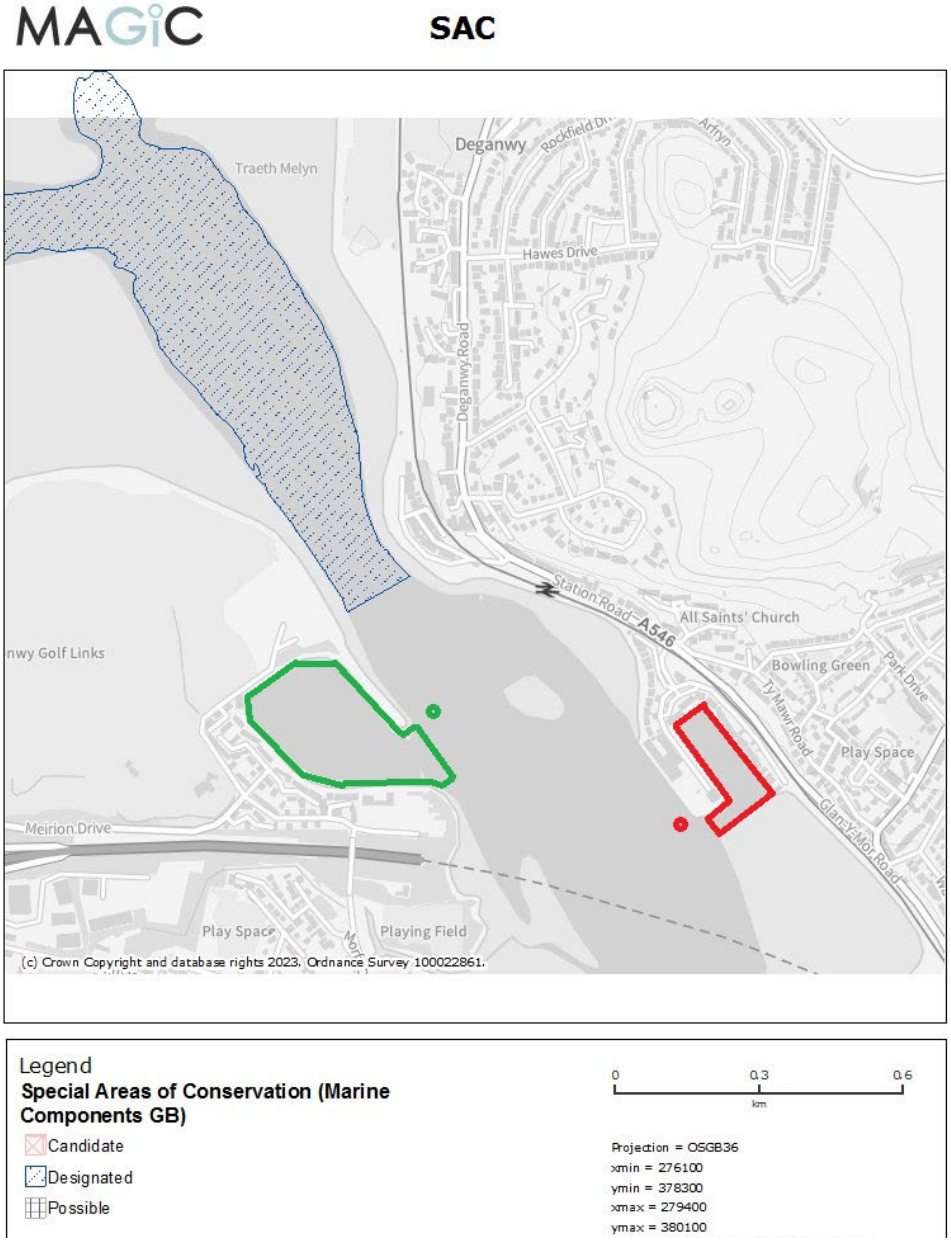
1170 Reefs. Indicative condition Favourable (medium confidence)

Annex 1 habitats (qualifying feature) -

1160 Large shallow inlets and bays. Indicative condition Unfavourable (medium confidence).

8330 Submerged or partially submerged sea caves. Indicative condition Unknown.

The following image shows the Deganwy works area in red, the red circle being the disposal site. For reference, the Conwy site is shown in green. The proposed works are approximately 800m upstream of the SAC boundary (Conwy being approximately 250m upstream of the SAC boundary).



Conservation objectives –

These are fully detailed in the NRW Regulation 37 report.

Based on the information available at this point in the HRA process, it is not possible to completely exclude the potential for a Likely Significant Effect (LSE). The next stage being an Appropriate Assessment.

5. Appropriate assessment

Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC (UK0030202)	
Proximity of works	Approximately 800m upstream of SAC
Conservation advice package used	Natural Resources Wales Regulation 37 Report
Qualifying features and relevance	Sandbanks which are slightly covered by sea water all the time - applies. Mudflats and sandflats not covered by seawater at low tide – applies the area. Reefs – applies Large shallow inlets and bays – applies Submerged or partially submerged sea caves – no known caves within several kilometres.

Assessment categories –

Dredging: Maintenance

Dredge spoil disposal

Advice on operations from NRW Regulation 37. Dredging: Maintenance

Relevant factor	**Assessment of LSE**
Modification of hydrodynamic regime & sediment transport processes	This is a maintenance dredge of an existing site and there is no change to the current processes
Alteration/loss of substrate	The dredging only removes recent fine deposit, there is no alteration to the substrate
Changes to available oxygen; turbidity; suspended sediments	Whilst dredging can raise suspended solids concentrations these are confined to the actual machine. The current method of WID will, by definition, raise the suspended sediment concentrations over a wide area. The use of a cutter suction dredger does not raise these levels as the material is directly removed, rather than resuspended. This is considered a positive benefit.

Increased suspended nutrients; toxic and non-toxic contaminants	As above
Displacement; abrasion; smothering; visual; noise	With a cutter suction dredger there is no displacement of material, and no smothering. All marine plant generates noise, but the plant is fully silenced and often operates in residential areas with no impact. Visually the plant is similar to that employed with WID
Removal of biota	There is no removal of biota

Advice on operations from NRW Regulation 37. Dredge spoil disposal

Relevant factor	Assessment of LSE
Modification of sediment transport processes; alteration to substrate	This application relates to a small change in disposal operations, from WID disposal to a pumped discharge from a cutter suction dredger. This is the same process used prior to WID and the same process used for Conway marina's dredging. Both methods result in resuspended sediment being discharged in the water column. For WID this is described as a high-density layer driven by gravity currents. For the cutter suction this is an underwater discharge of material with an 80% water content (so less dense that WID). For the accepted WID HRA it was stated: *'The cutter suction dredging operation deposited material at a dispersive beneficial use site just outside the marina entrance. Monitoring of intertidal silt levels was undertaken between 2010-14 to ascertain whether silt content had increased in the intertidal areas of the estuary as a result of maintenance dredging and deposition in the river. The study notes that the estuarine system is highly dynamic with evidence of rapid sediment transportation processes. The study found no evidence of increased silt content in intertidal areas, and concluded that the activity had no adverse effects on these habitats'.* *'The change from cutter suction to WID does not significantly affect the suspended sediment generated by the activity: the beneficial use deposition site is dispersive, so there are no significant differences predicted in the dispersal*

	of dredged material using the WID technique, i.e. the same volume of material enters the river/estuary at a very similar location'. The converse is also true.
Changes to suspended sediments; turbidity; dissolved oxygen	There is localised, short term, changes to the suspended solids. However, these will only be on the ebb tide and disperse quickly. Note that the current WID licence does not specify ebb tide discharge. No significant impact.
Increased nutrients; remobilisation of toxic and non-toxic contaminants	The recently analysed sediment samples indicate that the samples for metals are all below or close to Action Level 1 and suitable for sea disposal. Assessment of the PAH results, using the current Gorman-Test method, shows that all samples were below the minimum limits and suitable for sea disposal.
Smothering	As the material is only discharged during higher velocity ebb tides (hence the restriction of a minimum tidal range), there is no likelihood of any smothering.

Summary for SAC Potential Impacts

Based on the previous operations and the available information it is concluded that the return to cutter suction dredging and disposal does not result in any Likely Significant Effect.

As in all such works, there is a need for some control conditions (effectively mitigation for minor effects).

It is suggested that these match those for the Conwy Marina dredging, being tidal range and direction; time of year; no dredging at same time as Conwy.