

**Invitation to Tender (ITT):** **Northeast Intertidal Rocky Shore Condition and Impacts Assessment Year Three**

**SPECIFICATION OF REQUIREMENTS**

This section sets out the project requirements.

**1. Introduction**

## This Special Area of Conservation (SAC) Common Standards Monitoring (CSM) project will provide important data on intertidal reef community assemblages (rock platform and underboulder communities) within the Berwickshire and North Northumberland Coast Special Area of Conservation (SAC). Within this protected site there are a number of overlapping European sites, Marine Conservation Zones (MCZ) and underpinning Sites of Special Scientific Interest (SSSIs), all of which have reef habitat as either a listed feature or a supporting habitat.

## This project is a continuation of a condition monitoring project that was completed in 2021 and 2022 and is comprised of two different parts:

 **Part 1 (Primary)**

* **An expert led, detailed monitoring survey (Survey A) of rock platform and underboulder community composition, using transects and quadrats. This includes an assessment of collected data against the condition monitoring baseline and, production of a condition monitoring report to inform condition assessments.**
* **Analysis of available data and forthcoming data provided by Survey B (detailed below in part 2), and an assessment of how effective this data is in informing condition monitoring and condition assessments.**
* **Liaising with the coordinator of Part 2, and citizen scientists to align both parts of the project.**

**Part 2 (For info only)**

* Coordination of citizen scientists/volunteers to undertake Survey B, a targeted indicator species search, carried out by volunteer citizen scientists, focusing on species that are subject to recreational and commercial harvesting (e.g. periwinkles and crabs) and indicators of condition (e.g. opportunistic macroalgae), initiated in 2022.
* Collation of Survey B data to produce a dataset that can be made available to Natural England and Part 1 coordinator(s)
* In 2023, this part of the project will also include the development of an App to facilitate data collection, based on previous work.
* Liaising with the coordinator of Part 1, to align both parts of the project.

 **THIS IS AN INVITATION FOR TENDER FOR PART 1 ONLY.**

## Natural England is seeking to procure a Contractor to deliver **part 1 of the project (Survey A)** to include:

## Pre-planning of Survey A, in collaboration with the overall Natural England project manager to ensure that collated data can robustly inform the condition assessment(s) of specific attributes along the Berwick and North Northumberland Coast SAC.

## Collaborate with expert Natural England in-house staff to carry out condition monitoring surveys (Survey A) on existing transects within the Berwickshire and North Northumberland Coast SAC

## Attendance at two meetings with contractor from Part 2 of the project, to discuss condition monitoring surveys in the Berwickshire and North Northumberland Coast SAC (Survey A) and align both parts of the project (1 and 2). This will include discussion of the requirements and data to be collected by the App, to be developed in Part 2 to facilitate data collection.

## Carry out one training session with Natural England in-house staff, citizen scientists and contractor of Part 2 of the project and explain how to carry out focused target indicator species searches (Survey B), which will be led by Part 2 contractor.

## Undertake analysis of data provided by Survey B and assess the effectiveness of this data in informing condition monitoring and condition assessment.

## Produce a condition monitoring report for the intertidal reef attributes for the Berwickshire and North Northumberland SAC, this should include:

## Analysis of data from Survey A.

1. Analysis of data from Survey B.
2. Analysis and consideration of historic data from CSM condition monitoring/condition assessments reports where available in the resultant analyses.
3. Analysis and consideration of anthropogenic and non-anthropogenic factors.
4. Inclusion of Survey B citizen Science collected data from previous surveys and current survey.
5. Provision of associated data products.
	1. The Contractor is expected to begin work as soon as possible after the contract start date.

## Potential Contractors are requested to provide costings (including VAT) for:

## Pre-planning of Survey A within the Berwickshire and North Northumberland Coast SAC,

## Completion of the field surveys (Survey A),

## Processing and analyses of field survey data (Survey A and B),

## Provision of all Survey A datasets, and B datasets that are used in the report (not a link to data on an App),

## Assessment of Survey B data to determine the effectiveness of this data in informing condition monitoring and condition assessment.

## Attendance at two meetings (described in section 1.3) with the Part 2 contractor (Survey B)

## Planning and delivery of one training session (described in section 1.3).

## Write up of final condition monitoring report and provision of data and deliverables (see section 5).

## The contractor will be expected to undertake quality assurance on work delivered and ensure it is compliant with the requirements of the Joint Code of Practice for Research (see: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413154/pb13725-research-code-practice.pdf>) and section 5.2 of this document.

**2. Background**

**2.1 Site details**

The project aims to undertake condition monitoring surveys on intertidal habitats within the Berwickshire and North Northumberland Coast SAC. Table 1 provides details of the site and outlines the feature or supporting habitat of the site that Natural England is interested in surveying. Attributes and targets of the features, supporting habitats and the conservation objectives of the site are provided for additional context. Links to the designated site system, which has more in-depth information about the chosen site, are included for further information.

[Site Search (naturalengland.org.uk)](https://designatedsites.naturalengland.org.uk/SiteSearch.aspx)

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Table 1. Berwickshire and North Northumberland Coast Special Area of Conservation reef attributes and targets

|  |  |
| --- | --- |
| **Designated site** | **Feature, attributes, and targets Natural England is interested in**  |
| Berwickshire and North Northumberland Coast Special Area of Conservation  | **Reefs**: **infralittoral, intertidal and underboulder communities*** **Distribution**: Maintain the presence and spatial distribution of reef communities.
* **Extent and Distribution**: Maintain the total extent, spatial distribution and types of reef (and each of its sub-features)
* **Structure and Function**: Maintain, Recover or Restore the abundance of listed species, to enable each of them to be a viable component of the habitat.
* **Structure**: Restrict the introduction and spread of non-native species and pathogens, and their impacts.
* **Structure**: Maintain the surface and structural complexity, and the stability of the reef structure.
* **Structure**: Maintain the species composition of component communities.
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**2.2 The issue**

Monitoring within the protected sites along the Northumbria Coast varies. Historically, intertidal rocky reef condition monitoring has been carried out in the Berwickshire and North Northumberland SAC (see references).

Periodic monitoring of protected sites is required to understand their condition and allow Natural England to produce accurate and detailed condition assessments and conservation advice packages on these sites. This combined method of data collection will provide robust monitoring of areas and will produce valuable data that can be used in condition assessments and future management.

**3. Objectives**

**3.1 Project objectives**

The objectivesfor this contract are:

* Use the collected Common Standard Monitoring CSM compliant data to understand the intertidal community assemblages in protected sites for the appropriate attributes (table 1) on rock platforms and underboulder communities where appropriate (Survey A and historical data).
* Assess the Survey B provided data (to date) to determine how the citizen science collected data informs CSM compliant Condition Monitoring and Assessment.
	+ Input: two meetings with Part 2 B contractor, one field training session with citizen scientists.
	+ Note at this time the quality and quantity of the citizen science collected data cannot be determined since this data collection is underway.
* If successful, the project will help modify Natural England’s current in-house condition monitoring methodology for intertidal rocky reefs by identifying how less detailed surveys could support more intensive work in a smaller number of areas.
* Produce a condition monitoring report of the Berwickshire and North Northumberland Coast SAC reef attributes, presenting and analysing the results of the Survey A against baseline data. Including Survey B data, where appropriate. Analysis and consideration of anthropogenic and non-anthropogenic factors, where feasible.
* Provide recommendations on how to improve intertidal reef condition monitoring and use of citizen science collected data. Fundamentally, does the data collected reliably inform on condition, and potential drivers affecting condition.

**4. Methods**

**4.1 Survey methodology**

Note that quantified, CSM compliant, intertidal reef condition monitoring has been carried out within the Berwickshire and North Northumberland Coast SAC, historically. This should be used to help inform the 2023 reef-attribute condition monitoring(s), and allow statistically robust analyses between these data. Please see the **References** for more information on the previous surveys.

**4.2 Survey Area**

Ideally, surveys will be carried out on multiple transects within the Berwickshire and North Northumberland Coast SAC.

Due to the presences of Avian Flu on our coast, there is some restricted access to different transects (e.g., on the Farne Islands). Natural England and other bodies are monitoring the risks and status of the virus, however, currently the situation is variable and as such, some survey locations cannot be confirmed yet.

*Data Analyses*

Natural England does not wish to prescribe a particular form of data analyses. However, Natural England requires that robust and appropriate analyses are employed, with consideration of the previously collected data and methods. Potential contractors are required to describe, as part of their tender, the nature of the analytical approach which they will apply to these data to address the objectives of this contract.

# **5. Requirements and Timescales.**

**5.1 Health and Safety.**

**H&S risk assessments will be required and submitted to the Natural England project officer by the contractor prior to work commencing**

It will be necessary that landowners/occupiers of sites concerned are made aware of the survey and agree to surveyors being on each site involved – surveys will not proceed without landowner/occupier agreement.

**5.2 Products and deliverables**

To enable successful delivery, the Contractor is expected to:

* Plan with Natural England a field survey programme to collect necessary quantified data for the A surveys
* Undertake the surveys with Natural England’s assistance, if required, at the agreed locations.
* Process all new field data and acquire any additional datasets required to inform statistical analyses.
* Conduct statistical analyses of the data.
* Have two meetings with part B contractors, including discussion of the requirements of and data to be collected by the App, to be developed in Part 2 to facilitate data collection.
* Submit a draft final report of the findings.
* Submit a revised final report (in light of comments received from Natural England). In addition to reporting on the project’s objectives (3.1)
	+ This report should also include the raw data, processed databases and associated analytical code and any associated GI products to Natural England e.g. Phase I maps.
	+ All Survey A data should be supplied to MEDIN standard (see guidance at [www.oceannet.org](http://www.oceannet.org)). GIS datasets need to be provided in ESRI ArcGIS format compatible with ArcGIS 10.2, have attached metadata and be clean of any topology errors. If relevant, any point and polygon data should be supplied to us with the final analysis.
	+ **Please see Data Standards information in Annex 1 and Annex 2, for further information**

**5.3 Timeline for project delivery:**

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| --- | --- |
| **Timeline** | **Date** |
| Project inception meeting between contractor and Natural England staff via video conferencing | asap |
| Finalise analytical approach(es) and advise Natural England of these. | asap |
| Contractor to plan data survey, collate all necessary data and finalise analytical approach(es) and advise Natural England of these. | asap |
| Teleconference between contractor and Natural England to discuss datasets and planned analyses. | asap |
| Field work to collect the data sets | October 2023 at the earliest |
| Telecall to discuss interim report and provide A survey data to part 2 contractor | mid December |
| Draft interim report to be provided by contractor to Natural England with a tele call with Natural England  | End of January 2024 |
| Draft final report to be provided by the contractor to Natural England  | February 2024 |
| Comments on draft final report to be provided to contractor by Natural England. | Beginning March 2024 |
| Final report and associated products to be delivered by contractor to Natural England incorporating additions/ amendments in light of comments received from Natural England.  | End March 2024 |

Any delays to this timetable should be immediately discussed with NE project lead.

# **6. Other considerations**

In support of this contract, Natural England will provide the contractor with:

* Project support from dedicated project lead.
* Relevant available data held by Natural England.
* Opportunity to feedback and discuss progress with the project leads.

# **7. INNS**

Invasive non-native species (INNS) are considered to be one of the top five pressures directly driving biodiversity loss globally. Prevention is the key focus, particularly in marine environments. The contractor shall be aware of and work in accordance with standard good practice biosecurity measures to avoid spread of INNS:

Equipment, clothes and boots should be clean before carrying out any work on site. When on or near water it is important that equipment is drained after use and as far as possible dried. Boats to be used in survey work should have their hulls cleaned on a regular basis. Best practice guidelines should be followed as outlined by [The Green Blue](http://www.thegreenblue.org.uk/boat_users/antifoul_and_invasive_species/boaters_best_practice_invasive.aspx).

A list of INNS species considered as a priority under the UK marine strategy can be found on the Great Britain Non-native species secretariat [website](https://www.nonnativespecies.org/home/index.cfm). This list includes species that might be considered as high risk and horizon species which are also relevant from an impact on designated sites perspective as well.

INNS species previously recorded in this region and/or to particularly look out for during this survey include:

* *Crepidula fornicata*
* *Undaria pinnatifida*
* *Magallana) gigas* (outside of the aquaculture operation at Lindisfarne NNR, SSSI, SPA)

Known INNS include

* *Austrominius modestus*
* *Corella eumyota*

The contractor must report any records of INNS observed on site against the [UK Marine Non-Indigenous Species Priority List](https://www.nonnativespecies.org/assets/UK_Marine_NIS_priority_list_2020-1.pdf)1 on Marine Recorder and to the Natural England project officer as part of the survey report. Any species currently listed as ‘alert’ species should be flagged immediately to the GB Non-Native Species Secretariat ([Species alerts » NNSS (nonnativespecies.org)](https://www.nonnativespecies.org/non-native-species/species-alerts/)). More information and guidance including ID guides can be found at [www.nonnativespecies.org](http://www.nonnativespecies.org/) and <https://core.ac.uk/download/pdf/341301316.pdf>.

**Annex 1.**

**Data Standards**

All data acquired as part of Natural England commissioned survey work needs to comply with certain standards to ensure it is compatible with the Natural England Marine Evidence Base and is suitable for publication.

As a minimum, where data are acquired through survey work, these should adhere to the MEDIN data standard, any spatial data should be compatible with ArcGIS and any point source biological data should be suitable for entry into Marine Recorder.

1. MEDIN Standards

All supplied data should be provided with a MEDIN metadata record, which meets the MEDIN metadata discovery standard. The contractor is required to export the resultant .xml file and provide this with the final deliverables. They are not required to save the record to the MEDIN portal. Guidance for contractors on MEDIN data can be found in Annex 1.

1. Geospatial data Standards

All GIS datasets need to be provided in ESRI ArcGIS format compatible with ArcGIS 10.2 and have attached metadata.

All GIS files containing habitat data for each individual survey need to be produced to the [MESH translated habitat Data Exchange Format (DEF)](https://emodnet.ec.europa.eu/sites/emodnet.ec.europa.eu/files/public/step3_guidance_dataexchangeformats_v4_1.pdf) to the most detailed EUNIS habitat level possible. MNCR ([v15.03](http://jncc.defra.gov.uk/MarineHabitatClassification)) data should be added to the ORIG\_HAB column. The GUI provided by Natural England for each survey will be used, and as much information as possible (e.g., survey name, originally assigned feature/habitat name etc.) from the original dataset, as well as any documentation provided (where available) should be included in the resulting datasets to maintain a useful audit trail. As specified in the [MESH DEF](https://emodnet.ec.europa.eu/sites/emodnet.ec.europa.eu/files/public/step3_guidance_dataexchangeformats_v4_1.pdf), data files must be provided as ESRI Shapefiles or as a feature class data within a geodatabase using the WGS1984 geographic coordinate system and (lat/long coordinates. If not included in the GIS data layers listed above all sampling locations, vessels track, and links to data obtained should also be included as a single GI layer.

1. Marine Recorder

Projects acquiring sample data should clearly state within the specification the requirement for sample data to be uploaded to Marine recorder. All sample data (e.g. grab sample analyses, video/still photography analysis, diver survey species, PSA analysis and biotope lists, biological taxon data) need to be entered into [Marine Recorder](https://www.esdm.co.uk/marine-recorder) NBNdata and an exported snapshot file of the data should be provided for QA.

1. Other Deliverables

Draft reports should be provided in electronic MS Office Word \*.DOCX format for comment. A template and guidance exists for writing Natural England commissioned reports and will be sent to the contractor upon award of the tender. All reports should retain a clear suggested citation stating that it is a ‘Report to Natural England’

Data must be interpreted, analysed and presented in light of the overarching hypotheses stated in the survey objectives. Raw formats of sample data information should comply to MEDIN data standards and be interrogatable. The submission of raw data as a PDF is not acceptable and may lead to acquired evidence being more difficult or impossible to use in the future.

Standard survey imagery (stills & video) is to be provided in their raw format electronically or on USB compliant external hard drives. Video and still camera filenames must include the recording start date and time. Position data must be included within the overlay information of both the stills and video footage.

All data products and electronic files must be appropriately named so they sufficiently describe the contents and are not purely a numerical value. All products should be named appropriately so that they can be clearly linked to the report/project.

Any species lists submitted will be compliant with current taxonomic names and synonyms (e.g., [Marine Species of the British Isles and Adjacent Seas (MSBIAS)](http://www.marinespecies.org/msbias/), World Register of Marine Species (WoRMS)).

**Annex 2.**

**MEDIN – GUIDANCE TO CONTRACTORS**

Natural England endorses the MEDIN (Marine Environmental Data and Information Network) initiative. For all surveys it is expected that contractors create a MEDIN metadata record, meeting the [MEDIN metadata discovery standard](https://www.medin.org.uk/medin-discovery-metadata-standard). The metadata record should be completed as fully as possible and saved as an xml file from the MEDIN Discovery Metadata Editor or Metadata Maestro Tool. The contractor is only required to create and export an xml file, the record should not be saved on to the MEDIN portal.

**Requirements**

1.  The contractor should be aware of and follow the MEDIN metadata guidance notes <https://www.medin.org.uk/medin/sites/medin/files/documents/MEDIN_Schema_Documentation3_1_brief.pdf>

2.  One metadata record should be created for each survey.

3.  NE will provide the contractor with a **Unique Resource Identifier** code. There are two parts to this, a code and a codespace. The code is a unique reference following the format NE\_XXXX (where xxxx is a sequential 4 digit number). The code will be generated internally and will be passed to the contractor by the project lead or NE data manager. The codespace is just the NE website <https://www.gov.uk/government/organisations/natural-england>

4.  The **resource title** should follow the naming convention below;

‘Date’ ‘Natural England (NE)’ ‘Location’ ‘Type of survey’

· 2014 Natural England (NE) Land’s End - Intertidal sediment Phase I, Phase II rMCZ Verification Survey

· 2014 Natural England (NE) Flamborough Head SAC – Subtidal reef drop down video survey

5.  The **resource abstract** should list all deliverables for the project (raw GIS, background info, camera stills) as well as sufficient information on the aims of the project and any important caveats to the data.

**6.  Resource locator** – If the data from the survey is going to be passed to DASSH to archive then the following should be added (with the correct survey code at the end);

<http://www.dassh.ac.uk/datadownload/NaturalEngland/NE_XXXX>

**7.  Search Words** – Please ensure the keywords are completed, if the project involves mapping marine habitats please use ‘Habitat Extent’ and/or ‘Habitat Characterisation’.

**8.  Limitations on public access**– Unless the project officer specifically informs you that the data is restricted then please complete as ‘otherRestrictions’ and in additional information ‘No restrictions to public access’

**9.  Conditions applying for access and use**- Unless the project officer specifically informs you that the data is restricted then please complete as ‘Data is freely available for research or commercial use providing that the originators are acknowledged in any publications produced.

10.  Once completed the metadata record should be exported as an xml file. It is important that if you are given the option you **DO NOT** export it to the MEDIN portal. Natural England will compile multiple xml files and archive through Data Archive Centres (DACs) in batches. Please submit your xml file along with the other project deliverables.

11.  Natural England will QA the metadata record. Please verify the file in the MEDIN metadata editor before sending to the project officer. If errors are found during the QA process it will be returned for amendment.

**References**

Previous surveys include, but are not limited to:

**BNNC SAC**

Brazier, D.P., Davies, J., Holt, R.H.F., Murray, E., 1996. Marine nature conservation review sector 5. South-east Scotland and north-east England: Biotope classification. Peterborough.

Foster-Smith, R.L., 1998. Broadscale mapping of the reefs of the Berwickshire and Northumberland. University of Newcastle.

Foster-Smith, J.L., Foster-Smith, R.L., Hills, J.M., 2010. Condition Monitoring of the Intertidal Reefs Feature: Berwickshire and North Northumberland Coast Special Area for Conservation (European Marine Site). Envison.

Foster-Smith, R.L., Sotheran, I., Foster-Smith, J.L., Bunker, F., 1996. Mapping survey of the sublittoral and littoral biotopes of the Berwickshire coast: Appendix. BioMar Programme.

Moore, J., 2003. Berwickshire and North Northumberland Coast cSAC, Rocky shore monitoring sites Coastal Assessment , Liaison & Monitoring

Mieszkowska, N., Sugden, H. (2014). Berwickshire Intertidal Rocky Reefs. Report to Natural England.

Sugden, H., and Mieszkowska, N (2022) North East Intertidal Rocky Shore Condition and Impacts Assessment (2022). Report to Natural England. Ecotecknica. *note survey carried out in 2021*

Sugden, H., and Mieszkowska, N (2023) North East Intertidal Rocky Shore Condition and Impacts Assessment Year Two (2022). Report to Natural England. Ecotecknica. *note survey carried out in 2022*