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Request for Quotation

**Request for Quotation**

**Biological Survey of the Intertidal Sediments of the Essex Estuaries Special Area of Conservation**

You are invited to submit a quotation for the requirement described in the specification below.

Please confirm, by email, receipt of these documents and whether you intend to submit a quote.

Your response should be returned to the following email addresses by:

Email: Alex.Baker@naturalengland.org.uk

Date: [03/03/2023]

Time: [16.00pm]

Reference: [ESSEXINT23]

Ensure you state the reference number and ‘Final Submission’ in the subject field to make it clear that it is your response.

**Contact Details and Timeline**

**Alex Baker** will be your contact for any questions linked to the content of the quote pack or the process. Please submit any questions by email and note that, unless commercially sensitive, both the question and the response will be circulated to all tenderers.

|  |  |
| --- | --- |
| Action | Date |
| Date of issue of RFQ | [17/2/2023] |
| Deadline for clarifications questions | [22/2/2023] |
| Deadline for receipt of Quotation | [03/03/2023] |
| Intended date of Contract Award | [10/03/2023] |
| Intended Contract Start Date | [10/3/2023] |
| Intended Delivery Date / Contract Duration | [28/04/2023] |

**Glossary**

Unless the context otherwise requires the following words and expressions used within this Request for Quotation shall have the following meanings (to be interpreted in the singular or plural as the context requires):

|  |  |
| --- | --- |
| “Authority” | Means the Department for Environment, Food and Rural Affairs acting as part of Natural England |
| “RFQ” | Means this Request for Quotation and all related documents published by the Authority and made available to suppliers |
| “Contract” | Means the contract to be entered into by the Authority and the successful supplier. |

**Conditions applying to the RFQ**

You should examine your response to the RFQ and related documents ensuring it is complete prior to submitting your completed quotation.

Your quotation must contain sufficient information to enable the Authority to evaluate it fairly and effectively. You should ensure that you have prepared your quotation fully and accurately and that prices quoted are arithmetically correct for the units stated.

The supplier by submitting a quotation is deemed to accept the terms and conditions in the RFQ. Failure to comply with the instructions set out in the RTQ may result in the supplier’s exclusion from this procurement.

**Acceptance of Quotations**

By issuing this RFQ the Authority does not bind itself to accept any quotation and reserves the right not to award a contract to any supplier who submits a quotation.

**Costs**

The Authority will not reimburse you for any costs and expenses which you incur preparing and submitting your quotation, even if the Authority amends or terminates the procurement process.

**Mandatory Requirements**

The RFQ includes mandatory requirements and, if you do not comply with them, your quotation will not be evaluated.

**Clarifications**

The Authority reserves the right to discuss, confidentially, any aspect of your quotation with you prior to any award of Contract to clarify matters.

**Amendments**

The Authority may amend the RFQ at any time prior to the deadline for receipt. If it amends the RFQ the Authority will notify you in writing and may extend the deadline for receipt in order to give you a reasonable time in which to take the amendment into account.

**Conditions of Contract**

The terms and conditions: [Condensed Terms and Conditions](https://www.gov.uk/government/organisations/natural-england/about/procurement) will be included in any contract awarded as a result of this RFQ process. The Authority will not accept any material changes to these terms and conditions proposed by a supplier.

**Specification**

The Authority is Natural England. The Authority’s priorities are to secure a healthy natural environment; a sustainable, low-carbon economy; a thriving farming sector and a sustainable, healthy and secure food supply. Further information about the Authority can be found at: [Natural England](http://www.naturalengland.org.uk/)

**Specification**

1. **Introduction**

Natural England’s recent condition assessment carried out between 2021 and 2022 concluded that most of the intertidal features, including seagrass, are in unfavourable condition. Although water quality results have arguably changed due to assessment methods, the underlying issues of high nutrient levels, dissolved inorganic nitrogen (DIN), and heavy metal contaminants are still under monitored for management purposes. The Essex Estuaries SAC comprises a vast area of complex estuarine features. Intertidal mudflats and sandflats are one of most important interest features of the site and Natural England have a duty to monitor and assess the condition of the intertidal features to report on the conservation status of mudflats and sandflats habitats once every six years. Natural England is currently involved with several stakeholders and partnerships in the Essex area which paves way to improved understanding of the SAC.

However, our understanding of the communities of the intertidal part of the SAC is currently quite poor and a significant evidence gap has been exposed in this area during the condition assessment. No evidenced conclusion can be drawn owing to this lacuna and details of biological and sediment characteristics of the SAC features since the last baseline survey was conducted in 2013 (PMSL 2013) are unknown. It is therefore a high priority to understand the current make up and condition of the intertidal zones for Natural England to fulfil its monitoring and management obligations.

This survey will improve our understanding of the intertidal ecosystem and its assets functioning in Essex estuaries SAC. The evidence gathered in this survey will improve the coverage, scale and quality of ecological evidence (specifically intertidal benthic habitats). Detailed survey and analyses will enable us to understand the distribution and scale provisioning services of the sediments to designated features, marine avifauna, and shellfish (Cockle/Native oyster).

* 1. **Survey area**

The Essex Estuaries European Marine Site is the second largest estuarine site on the east coast of England. It contributes to the range and variation of estuaries in the UK as the best example of a coastal plain estuary system on the British North Sea Coast. Covering an area of 472 square kilometres, this relatively undeveloped estuary complex contains the major estuaries of the Colne, Blackwater, Crouch and Roach, as well as extensive open coast tidal flats at Foulness, Maplin and Dengie. The intertidal mudflats and sandflats within the European Marine Site support a wide range of typical estuarine and marine communities on sediments ranging from the finer estuarine muds and muddy sands to coarser sands and gravels (English Nature, 2000).

The Essex SAC is part of a low-lying sedimentary coastline and includes the major estuaries of the Blackwater, Colne, and Crouch/Roach complex, with open coast and offshore elements creating an extensive area of continuous marine habitat **(Figure 1).** These estuaries have formed from pre-existing valleys, which were flooded at the end of the last ice age. Their geological structure and physiological features classify them as coastal plain estuaries in that they deepen and widen towards the mouth and in outline and cross section they would naturally form a triangular shape.

The estuary floors have a large width to depth ratio, are shallow (less than 30 metres deep) and have been infilled with post-glacial sediments sourced by deposits trapped in the southern North Sea. These are of varying thickness, with mud in the upper reaches becoming increasingly sandier towards the mouth. Indeed, this estuary system remains of high importance to larger-scale regional sediment circulation of the southern North Sea as a whole, including the East Anglian coastline.

The range in tidal heights (average tidal range of 4.8 metres) allows a vast extent of intertidal sediment flats to become exposed (approximately 169 square kilometres). In sheltered areas these may become stabilised by microscopic algae (diatoms) and saltmarsh plants. At lower levels and exposed locations the sediments are resuspended by tidal currents and wave action making the estuarine waters turbid. Coastal plain estuary systems are chiefly restricted to temperate climates where the sediment input from rivers is relatively small. River flow is also limited compared with the volume of tidal water entering the system. As such, there is a strong saline influence.

Natural England’s marine remit includes biodiversity extending from the intertidal zone out to 12 nautical miles. Essex estuary was designated as a Special Area of Conservation (SAC) and contributes to the UK’s suite of Natura 2000 sites and overall MPA network.

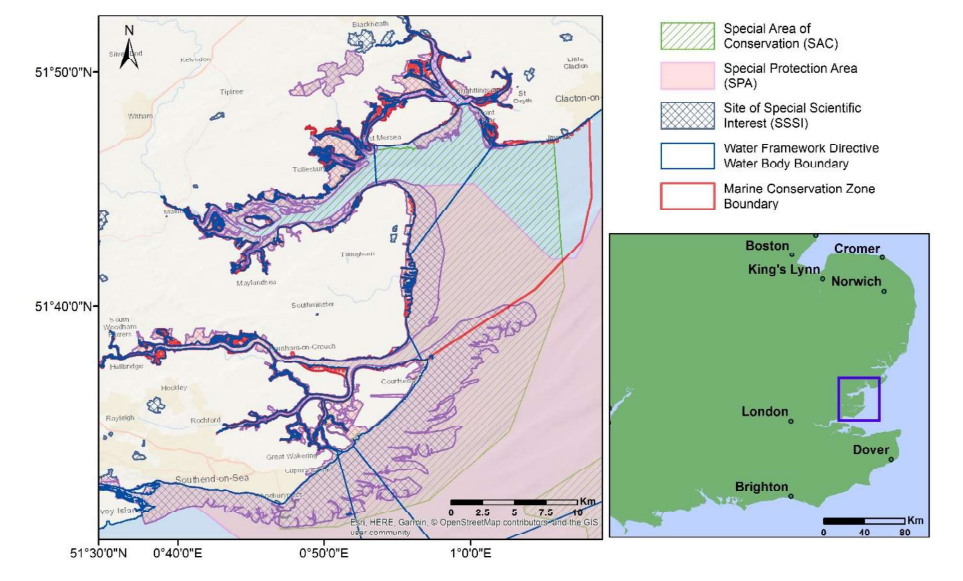
The SAC is designated (under the EC Habitats Directive) for the following Annex I habitats:

* Sandbanks which are slightly covered by sea water all the time
* Estuaries
* Mudflats and sandflats not covered by seawater at low tide
* Salicornia and other annuals colonizing mud and sand
* Spartina swards (Spartinion maritimae)
* Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
* Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi*)*

Full site details are currently being updated on the NE designated sites webpage so please see

[Essex estuaries EMS](http://publications.naturalengland.org.uk/publication/3030183)  (publication.naturalengland.org.uk) for more information.

The survey will cover intertidal benthic habitats in the Essex estuary Special Area of Conservation (SAC). Natural England have been working with key partners including The Environment Agency, KE IFCA, CEFAS, on initial scoping and evidence mapping in the area. It is expected that the successful contractor will collaborate with NE and local stakeholders in designing the survey if needed.



**Figure 1. Map of Essex estuary SAC** **© Natural England Copyright 2022**

**1.2** **Previous surveys**

There have been few previous studies conducted in the SAC area commissioned by Natural England. A biological survey of the intertidal sediments of the Essex estuary SAC was undertaken in 2013 **(Figure 2)** followed by a NE verification survey in 2013 A subtidal survey was taken by Environment Agency in 2017.

[PMSL 2013. Biological Survey of the Intertidal Sediments of the Essex Estuaries SAC and Swale SSSI:  Survey Report](file:///C:\Users\X958088\OneDrive%20-%20Defra\Migrated%20Data\Condition%20assessments\data_collections\essex%20estuary%20biota%20data\Biological%20Survey%20of%20the%20Intertidal%20Sediments%20of%20the%20Essex%20Estuaries%20SAC%20and%20Swale%20SSSI%20-%20Report%20DRAFT.pdf)

[APEM. 2013. Verification survey of intertidal rock habitats within the Stour & Orwell Estuaries rMCZ and Blackwater, Crouch, Roach & Colne Estuaries rMCZ: Project Plan February 2013. Submitted to Natural England. APEM reference 412595.](file:///C:\Users\X958088\OneDrive%20-%20Defra\Migrated%20Data\Condition%20assessments\data_collections\essex%20estuary%20biota%20data\Natural%20England%202013%20Stour%20and%20Orwell%20Estuaries%20rMCZ%20and%20Blackwater;%20Crouch;%20Roach%20and%20Colne%20Estuary%20MCZ%20Intertidal%20Verification%20~%20Final%20Report.pdf)

[Environment Agency (2017) Essex estuary SAC Benthic survey report](file:///C:\Users\X958088\OneDrive%20-%20Defra\Migrated%20Data\Condition%20assessments\data_collections\essex%20estuary%20biota%20data\EA%20Essex%20Estuaries%20subtidal%20monitoring%20report%202017%20compared%20to%202012%20info.pdf).

(The above reports can be shared upon request. A GI package from the Marine Evidence database can also be provided upon request.)

Map

Description automatically generated

**Figure 2. Map of Essex estuary SAC with 11 intertidal transects during 2013 survey. © Natural England Copyright 2022**

Please note that, where possible, these datasets should be incorporated into the current report, however the methodology should not necessarily be followed, and the contractor is invited to suggest an integrated survey plan.

Please note that, where possible, these datasets should be used to plan your proposed survey design. The outputs of this survey may be used by NE for a number of different purposes, including Condition Assessment and the formulation of Conservation Advice. Therefore, ideally datasets must be comparable with historic data and methodologies to enable analyses, however different and novel approaches will be considered where a rationale is provided.

1. **Aims & Objectives**

**2.1 Aims**

This main aim of the study is to provide standardised faunal and infauna information for the littoral sediment habitats and communities of the Essex Estuaries SAC, across a series of sampling areas. The main sediment types and their associated communities (biotopes[[1]](#footnote-2)) will be mapped within these areas. This information will act as post baseline for management and condition monitoring of the Essex Estuaries SAC (according to JNCC common standards guidance).

The survey should provide suitable information on the following key attributes of the intertidal mudflats and sandflats of the Essex Estuaries SAC.

* Geographical extent of the littoral sediment feature and its sub-features and notable biotopes present and any notable changes comparing to baseline study
* Biotope composition and the spatial distribution of biotopes across the feature
* Species composition of both representative and notable biotopes of the mid and lower shore
* Sediment characteristics: Particle size analysis (PSA) and the depth of the redox layer

The survey will be divided into a series of components to fulfil these objectives namely:

1. Pre‐survey deskwork: Consultation with Natural England and assessment of any available historical survey data of the area in order to derive a sampling methodology and transect layout within budgetary constraints;

2. Phase 1 mapping: a Phase 1 biotope mapping exercise along each transect recoding notable biotopes up to 200‐400m either side of each transect; and

3. Phase 2 sampling: sampling of infaunal communities and sediments at representative or key biotopes across the survey area

Natural England wishes to commission Phase I and Phase II intertidal survey work during the Spring of 2023 (March-April) to gather robust evidence on the distribution and extent of intertidal habitats and features of intertidal habitats (sediments, seagrass etc.). This project will deliver a detailed map of features at a range of EUNIS levels (broader than just broad scale habitats). Natural England will interrogate and analyse the detailed evidence collected to inform Condition Assessment, the formulation of Conservation Advice.

The information gathered must be of sufficient quality to provide a comparison with previous surveys (PMSL 2013 where possible) relating to intertidal habitats according to methodologies outlined in JNCC common standards guidance (JNCC, 2004).

The survey design for this tender should acquire high quality biological data of suitable resolution to allow key attributes of condition to be assessed according to Common Standards Monitoring guidance and to assess the quality of ecosystem assets. Delivered through a combined approach of Phase I and Phase II.

We would expect the contractor to liaise closely with key partners such as the KEIFCA (in terms of shellfish monitoring) and with the infaunal analysis labs on the EA’s framework to achieve this aim.

In brief, Natural England are seeking potential contractors to pay particular attention to survey design so that quantitatively robust data is acquired which will permit rigorous statistical analysis and support robust condition assessment judgements of the relevant SAC components of the EMS.

**2.2 Objectives**

The specific objectives of this contract are to:

In collaboration with Natural England, plan, undertake and report on Phase I and Phase II intertidal surveys covering the entire suite of features (where Phase II is informed and guided by Phase I). This will inform our understanding of various biotopes and community structure and feature condition of the Essex estuary SAC.

Overall outputs of the combined approach:

* Identify and map the extent and distribution of intertidal sedimentary habitats within the agreed sample area.
* Identify and map the extent and distribution of biotopes and biotope communities according to the JNCC Marine Habitat Classification for Britain and Ireland.
* Where feasible provide quantitative information on species composition across the range of sedimentary habitat biotopes and biotope complexes identified.

Under this specification contractors must:

1. Develop, agree and implement, in collaboration with Natural England a survey plan (previous baseline survey details available E.g., PMSL 2013) to collect data suitable for undertaking assessment of the direction of ecological change within the communities / habitats identified under this specification, wherever possible integrating and interrogating previously obtained relevant data in the analysis.
2. In agreement with Natural England, implement a statistically robust survey design to enable future collection of compatible data, permitting quantitative long-term analysis. This should seek to build on any previous work listed (please refer to section 1.2) and, where possible, enable temporal comparisons to be made with previous datasets. The overall objective is to provide an ecosystem asset map comprising the location and quality of intertidal habitats.
3. Where possible, ensure that newly collected data is analytically compatible with historical survey data.
4. Ensure anthropogenic influences, potentially impacting the feature, are identified, and where possible quantified, allowing analysis to focus on investigation of the potential impacts of these pressures (e.g., bait digging, fishing activities, coastal defence works, and damaging activities). These should be mapped where possible in accordance with the methods outlined in the CCW Phase I and should include damaging or potentially damaging activities.
5. **Please note**: **Sample infauna and PSA analysis is normally undertaken by a third-party contractor under a separate NE/EA framework, but we invite a separate quote for sample processing and analysis for infauna per core, PSA and biomass to be provided in any tender so that NE have the option to pursue this route should it be required**. In the event of third-party analysis, the contractor will be expected to prepare samples for transport to the laboratory (e.g., complete Optical Charter Recognition (OCR) forms, sieve and fix samples in formaldehyde, package ready for transport in similar pots used by the EA’s National Laboratory Service and arrange courier). The contractor is expected to liaise with the sample analysis contractor and ensure samples are couriered to them for analysis. Samples may need to be stored by the contractor in a safe refrigerated facility prior to postage. **Costs for preparation, storage, transport of samples should all be included in the quote**. -----------------------------------------------------------------------------------------------------------------------------
6. Provide a preliminary assessment of the condition of the features from the field data and observations you have collected, clearly stating out how the assessment is supported by the analysis/interpretation of data collected. Note: this is not the formal condition assessment that will be undertaken by Natural England using all relevant data. This preliminary assessment should pay particular attention to noting any differentiation in observed condition between similar communities which are subject to varying degrees of anthropogenic pressures to focus analysis on investigating impacts.
7. Provide fully detailed “standard operating protocols” for the work undertaken to ensure that methods can be repeated in the future.
8. Produce a concise, evidence-based technical report detailing the work undertaken, reporting the survey and analytical findings, discussing these in the light of any previous data.
9. In discussions around the findings of this work, observations made regarding condition, drawing upon “expert judgement” in addition to the collected and analysed data, must be clearly identified and presented separately from the core results of this survey work.
10. To report the detailed findings of the project in succinct and clear final reports, including appropriate GIS, Marine Recorder and MEDIN outputs. For the majority of the report, biotope codes and maps need to be provided in MNCR (04/05) classification, however underlying GI layers should also hold EUNIS classification results to the highest possible level. The final report should include mapping outputs at the SAC sub-feature or MCZ BSH level (broadly speaking EUNIS Level 4)
11. Provide all data to the relevant standards set out in section 4.1.
12. A MESH data confidence assessment for each habitat map should be calculated and provided in a ‘MESH confidence scoresheet’ \*.XLS file. The confidence assessment process is described, and a template provided in the following MESH resources [The MESH Confidence Assessment Scheme](https://emodnet.ec.europa.eu/en/seabed-habitats).
13. To note the presence and location of any of habitats or species that would qualify as MCZ FOCI (as defined by the [Ecological Network Guidance](https://data.jncc.gov.uk/data/94f961af-0bfc-4787-92d7-0c3bcf0fd083/MCZ-Ecological-Network-Guidance-2010.pdf)), and/ or species/habitats of interest that are listed in OSPAR List Threatened/Declining, UK BAP Priority species etc. where they are not covered within SAC BSH definitions. This should also be highlighted in the reporting stage.
14. Liaise closely with key partners such as the IFCAs (in terms of shellfish monitoring) and with EA infaunal analysis labs to achieve the aims of the project.
15. **Methods**

**3.1 Development of a suitable sampling design**

A sampling design needs to be developed for this work. This should seek to build on any previous work listed in section 1.2 and, where possible, enable temporal comparisons to be made with previous datasets.

In developing an appropriate sampling strategy contractors should not be bound to simply repeat the previous methodology undertaken; rather they should seek to implement an improved approach which enables a comparison with existing data but at the same time delivers Natural England’s requirements for a more statistically robust approach outlined above.

**3.2 Pre-survey deskwork**

Before the survey is carried out the contractor will discuss any pre-survey work with the Nominated Officer, including:

1. Clarification of roles, responsibilities, and expectations
2. Acquisition and checking of sources of relevant information and gathering of local advice in preparation of a project plan
3. Review existing information provided by Natural England or any datasets known to the contractor.
4. Ways of working and close collaboration with NE in developing project plan, particularly selection of survey sites, taking account of NE/EA pre-survey scoping work, and finalising survey design and methodologies. For example, intertidal surveys may need to consider the use of hovercrafts and/or quad bikes to conduct surveys, which will require a Habitats Regulations Assessment (HRA).
5. Ensure that up to date charts are used to position sample sites away from cables, pipelines or any other coastal infrastructure. Should any coastal infrastructure exist within an area to be sampled then a buffer should be used to ensure that sampling activity does not cause damage, and this should be clearly displayed within the survey plan. Should coastal infrastructure be found during fieldwork then any sample sites should be relocated, and the Nominated Officer informed

**3.3 Site access**

The Nominated Officer should be contacted prior to commencement of any fieldwork.

Natural England will work with the contractor to obtain permission from seabed owners or leaseholders for survey work on the seabed and will supply a copy of these permissions. Each member of the survey team must carry a letter from Natural England to confirm that they are doing this work on the behalf of Natural England. Survey work will not be able to begin until access permissions have been obtained by Natural England.

Contractors should allow for the inclusion of Natural England staff on surveys wherever feasible. The Nominated Officer will liaise with the contractor regarding the availability of Natural England staff to join the survey, where available.

Where contractors intend to use either a vessel or hovercraft to access sites this requirement should be made clear in the tender submission and any use of these vehicles will be subject to SSSI consent and Habitats Regulations Assessment (HRA). This should be discussed from the outset with the Nominated Officer and site leads.

The removal of sediment samples from the seabed meets the terms of a marine licence exemption set out in [Article 17 of the Marine Licence (Exempted Activities) Order 2011 (as amended)](http://www.legislation.gov.uk/uksi/2011/409/article/17)and a marine licence is therefore not required. The MMO require notification of any exempted activities occurring; Natural England will be responsible for submitting the relevant information to the MMO for this.

Natural England will be responsible for obtaining permissions from the Crown Estate.

**3.4 Field survey**

The sampling strategy will be based on 11 transects around the Essex Estuaries SAC following baseline survey PMSL 2013. Transects will run seawards from the highest extent of the saltmarsh down to the mean lowest tide level. Transects will comprise a 400m wide belt (200m either side of a central line running between the transect start and end points). An estimate of the time taken to complete fieldwork should be based upon a minimum survey team size of two people undertaking 1 – 3 transects per tide, depending upon their length, proximity and ease of access. The selection of transect locations will be based upon a consideration of the following factors:

Sample locations should be:

* Geographically spread throughout the site
* Representative of the range of sediments of interest
* Proportionate in their split to the overall coverage of the sediment of interest
* Randomly located within the broad sediment types identified through Phase I
* Distributed across the site as transects with stations at mid and low shore (where appropriate)

And bear in mind

* Transects should complement other studies which are in progress on the estuary rather than repeat sampling at the same locations. This is to ensure a maximum coverage of monitoring data.
* The largest possible range of biotopes should be encountered including any species or communities which are specifically mentioned in the Regulation 33 Appendix VIII.
* Any areas where known impacts or changes to the feature or its communities are known to be occurring

**3.4.1 Phase 1 Mapping**

Phase 1 biotope mapping of the littoral sediment biotopes will be undertaken across the shore within the 400m wide strips centred on the transect line. In order to provide adequate coverage of the intertidal zone all littoral sediment within the phase 1 survey, which are exposed at mean low water should be mapped. This will provide information to inform the following attributes: **Biotope composition, biotope distribution, extent of sub-features and notable biotopes.**

Surveyors should walk a systematic route within the phase 1 survey area (the 200m wide area either side of the central transect line) and map the distribution of biotopes present using standardised phase 1 mapping methodology (see [Marine Monitoring Handbook](https://www.bing.com/ck/a?!&&p=c84a8263e6b29318JmltdHM9MTY3NjQxOTIwMCZpZ3VpZD0yNmI1MWJhZC1iMDVmLTY5MzctMGM0YS0wOTM5YjE5NDY4ZDkmaW5zaWQ9NTE4Nw&ptn=3&hsh=3&fclid=26b51bad-b05f-6937-0c4a-0939b19468d9&psq=marine+monitoring+handbook&u=a1aHR0cHM6Ly9odWIuam5jYy5nb3YudWsvYXNzZXRzL2VkNTFlN2NjLTNlZjItNGQ0Zi1iZDNjLTNkODJiYTg3YWQ5NQ&ntb=1), procedural guidance No 3-1, 0.5mm mesh sieve). Sediment character is key to the structure of the intertidal feature and therefore should be recorded regularly across the phase 1 survey area. A rapid infield method should be used for assessing sediment grain size, whereby samples of sediment are visually compared to pre-sieved samples prepared in accordance to the Wentworth scale.

Where surveyors encounter notable biotopes (e.g., Oyster beds, cockle beds, eelgrass, standing pools etc…) within the phase 1 survey, the full extent of such notable biotopes should be mapped up to 400m from the transect mid-line, i.e., up to 200m outside the normal width of the survey transect.

MNCR site record forms should be used for each transect. Biotope data for each biotope in each sector should be recorded on MNCR habitat record forms. These are available to download from the JNCC website: <http://www.jncc.gov.uk/page-2683>

Boundaries of biotopes should be recorded using dGPS. Transitional zones should be recorded as such. Guidance in relation to describing biotopes and biotope complexes is contained in the Marine Habitat Classification for Britain and Ireland – Version 04.05 and can be found on the JNCC website (<http://www.jncc.gov.uk/page-1645>). Biotopes should be reported using the Marine Habitat Classification 2004 but should be cross-referenced with the 1997 Marine Nature Conservation Review (MNCR) classification (a cross referenced list should be included in the appendix); this should enable comparisons to be made to any previous data.

Target notes are an essential part of the phase 1 survey. The contractor should record additional information as uniquely numbered target notes cross-referenced with numbers on the site map.

Photographs should be taken of biotopes or habitats specific to each survey area as outlined above. Photographs should be from geo-referenced locations marked on maps with the direction of the photographs indicated.

* + 1. **Phase 2 Sampling**

Phase two sampling of infaunal communities will be carried out at sampling stations on the mid and lower shore along each transect centre line. This will provide information regarding the ***species composition*** of the biotopes encountered. At the same stations sediment sampling will be undertaken to assess ***sediment characteristics.***

Single infauna cores (0.01m2- 15cm core, 0.5mm mesh sieve) should be taken from each station across the site, with a subset of stations where triplicate samples are taken and stored separately (be mindful of previous Water Environment Regulations (WER) samples in the waterbody and number of triplicates needed for WER monitoring requirements). However, unlike WER methodology, these triplicate samples should be treated as individual samples and not combined. A further 15cm core will be collected for PSA analysis at each station and processed according to the NMBAQC recommended methods. Each station should also have a redox and an interstitial salinity measurement.

Faunal sampling should conform to standard methodology [ISO 16665:2014](https://www.iso.org/obp/ui/#iso:std:iso:16665:ed-2:v1:en), and identification should be carried out in accordance to the [NMBAQC quality control guidelines following Standard Operation Procedure ES-04](http://www.nmbaqcs.org/qa-standards/).

Natural England envisages that the required survey work under this specification should include 22 stations (11 upper shore and 11 lower shore) in the Essex estuary SAC. Survey work under the contract should be scheduled to be completed by the end of March 2023, however potential contractors should provide contingency dates should the planned survey be affected e.g., by weather downtime.

Contractors must clearly state their availability and capability to carry both this single contract and any other projects they may consider bidding for in combination within the given timescales.

Surveys will be carried out in accordance with the technical specification provided above. Alternative approaches will be considered if they meet the aims and objectives of the contract, demonstrate efficiencies and are agreed with NE prior to survey commencing. **Representative example** of the phase 2 sampling work is given below for each transect. In a transect contractor will sample two stations i.e. one at mid shore and one at lower shore. From each of this station 1 core sample will be taken for PSA analysis. Three further cores will be taken for infauna i.e., which represent various biotopes recorded in that transect based on the phase 1 survey and not from same area of the transect. (Refer back to section 2.1 and 3.2.)

|  |  |
| --- | --- |
| Transect A  Station: Mid shore | Transect A  Station: Lower shore |
| Four cores each representing phase 1 biotopes (three for fauna and 1 for PSA) | Four cores each representing phase 1 biotopes (three for fauna and 1 for PSA) |
| Total cores per 11 transects  Total infauna cores (11X 6) 66  Total cores for PSA (11X 2) 22 | 88 cores total (66 for fauna and 22 for PSA) |

### 3.5 Data Analysis

Sample analysis will be undertaken by an independent party (please see section 2.2 (vi))

### 3.6 Invasive Non-Native Species

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
* Hovercraft to be used in survey work should have 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)

INNS species previously recorded in this region and/or to particularly look out for during this survey. See [GB non-native species secretariat](http://www.nonnativespecies.org/).

The contractor must report any records of INNS observed on site 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 <http://www.nonnativespecies.org/alerts/index.cfm>. More information and guidance including ID guides can be found at [www.nonnativespecies.org](http://www.nonnativespecies.org) and the [Marine Aliens Project](http://www.marlin.ac.uk/marine_aliens/).

**3.7**  **H & S Requirements**

All risk assessments need to be seen and signed off by the Nominated Officer (ideally when presented with then project plan), as part of the contract management process. Risk assessments need to be provided by the contractor. If **surveys** will be done out of season, risks around reduced daylight and poor weather etc. need to be highlighted.

### 3.8 Weather downtime & contingency

Survey windows should be allocated in accordance with the best tides available. Contractors will be expected to check weather regularly (daily) prior to agreed survey windows.  If contractors have 48 hours' notice of impending poor weather, then they will be expected to make alternative arrangements for the duration of the poor weather and reschedule survey work to be completed at a later date.  If contractors have not yet mobilised, then Natural England does not expect to be charged for any weather downtime.  It is the responsibility of the contractor to contact Natural England in the event that impending poor weather is putting the survey at risk.

Natural England does not envisage paying for downtime or contingency time for intertidal contracts, but in the event of unforeseeable weather events, a maximum of 1 day may be paid.

In the event of uncertainty or other unforeseen events that impact upon the ability of the contractor to undertake the survey, the Natural England Nominated Officer should be contacted immediately.

1. **Outputs – Products and Timescales**

This contract shall be managed on behalf of the Authority by **Sajan Sebastian.**

The project outputs will follow the objectives set out in this tender (Section 3) and refer to available guidance for writing Natural England Technical publications.

Suppliers are to fill in the costing template below in application for the RFQ.

**4.1** **Reporting and analysis**

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 above. Contractors should pay particular consideration to the data and GIS required formats for information compatibility including MEDIN metadata standards and Marine Recorder provision:

* All sample data (grab sample analyses, video/still photography analyses, diver survey species, PSA analysis and biotope lists etc) need to be entered into Marine Recorder and delivered with the final reports. Natural England will provide licence keys for Marine Recorder to the winning contractors for use in this contract. A Snapshot file of the data should also be provided. <https://www.esdm.co.uk/marine-recorder>. Guidance ‘Marine Recorder Evidence for Contractors’ will be provided to the winning contractor.
* 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://www.emodnet-seabedhabitats.eu/contribute-data/data-exchange-format/) 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. Where MESH GUI references are identical, the datasets should be combined and treated as a single survey record. As specified in the MESH data exchange format, data files must be provided as ESRI Shapefiles using geographic coordinates (lat/long) and the WGS84 datum. If the datasets supplied are in other projections, transformation using the appropriate petroleum (EPSG) transformation should be carried out as part of the data formatting procedure.
* 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.
* A MESH data confidence assessment for each habitat map should be calculated and provided in a ‘MESH confidence scoresheet’ excel file. The confidence assessment process is described and a template provided in the MESH resources [here](https://emodnet.ec.europa.eu/en/seabed-habitats).
* Accompanying metadata for the data set must meet the [MEDIN metadata discovery standard](https://medin.org.uk/medin-discovery-metadata-standard#:~:text=The%20MEDIN%20Discovery%20Metadata%20Standard,Metadata%20Standard%20available%20to%20users.). Metadata derived as part of this project must be submitted to Natural England in an XML file which Natural England will archive through Data Archive Centres (DACs). Guidance ‘MEDIN Guidance for Contractors’ will be provided to the winning contractor.
* Copies of the original data spreadsheets or databases are to be provided in the appropriate Microsoft Office format.
* Stills photographs to be provided in their raw format on CD/DVD or USB compliant external hard drives.

The contractor must report any records of Invasive and Non-Native Species observed on site 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](http://www.nonnativespecies.org/alerts/index.cfm). More information and guidance including ID guides can be found at [GB non-native species secretariat](http://www.nonnativespecies.org/).

Copies of the original data spreadsheets or databases are to be provided in the appropriate Microsoft Office format. However please be aware that using MEDIN marine biodiversity data guideline spreadsheets (available online under the marine biodiversity tab at [MEDIN data guidelines](http://www.oceannet.org/marine_data_standards/medin_data_guidelines.html)) will ensure that biological taxon data is prepared correctly for entry into Marine Recorder and will facilitate the efficient entry of data into this system and the data archiving process in general. Natural England welcomes and supports the provision of raw data spreadsheets in the MEDIN format and expects that all raw datasheets will contain the mandatory fields in the MEDIN guidelines, regardless of their format.

High quality imagery which has been selected to form part of the image reference collection for the survey need to be labelled appropriately, including the habitat/species which is represented. These should be provided as a separate folder on the storage device to the standard survey imagery.

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))

Video and still camera filenames must include the recording start date and time. Position data must be included within the overlay information.

We will raise purchase orders to cover the cost of the services and will issue to the awarded supplier following contract award. Upon completion of the Phase I and II Autumn field surveys the first payment will be made, second payment after the Autumn deliverables, third on completion of the Spring fieldwork, and the final payment on completion of Spring deliverables.

**4.2 Timeline for project delivery:**

**Spring survey (Phase I and II) and Infauna analysis projected timing**

|  |  |
| --- | --- |
| **Event** | **Date** |
| Finalise phase I and 2 sampling design | 13 March 2023 |
| Obtain any necessary access permissions (**to be completed by Natural England**) | Early March 2023 |
| Produce final project plan | 15 March 2023 |
| Phase I and phase II ground survey to be completed by | 31 March 2023 |
| Submission of brief field report by | 28 April 2023 |
|  |  |
| Infaunal analysis to be completed (by third party) | TBC/~ Early June 2023 |
| Draft final report and associated products to be provided by | TBC/~End of July 2023 |
| AQC to be completed (by third party) | TBC/End of July 2023 |
| Final report, biotope maps and output to be delivered (updated with AQC data as necessary) | TBC/ 24th August 2023 |

Natural England would expect to discuss and review timelines with the successful contractor in the start-up meeting and throughout the duration of the contract. Any delays to this timetable should be discussed with the Natural England Project Officer and delays not outside the control of the contractor will be penalised.

1. **Other**

In support of this contract NE will provide the winning supplier with:

* Project support from dedicated Nominated Officer
* Opportunity to feedback and discuss progress and the project
* Supporting GIS datasets (if required) under licence for use in this contract:
  1. Base map data from [Ordnance Survey](http://www.ordnancesurvey.co.uk/oswebsite/)
  2. Aerial photography from [Next Perspectives](http://www.nextperspectives.co.uk/)
  3. S-57 vector data from the UK Hydrographic Office (in ArcGIS format)\*
  4. Raster charts from [Oceanwise](http://www.infoterra.co.uk/) (Not to be used for Navigation)
* Additional reports to help with the analysis and report, such as those listed in Section

Please see the following site for information on how to acquire GI information <https://www.gov.uk/how-to-access-natural-englands-maps-and-data>

The intellectual property rights and copyright for all products (including photographs) will lie with Natural England. Natural England aims to make all data available under the [Open Government Licence](http://www.nationalarchives.gov.uk/doc/open-government-licence/) at the end of the project via [www.data.gov.uk](http://www.data.gov.uk) and the MEDIN Data Archiving Centres.

**5.1 Supporting Documents**

PMSL 2013. Biological Survey of the Intertidal Sediments of the Essex Estuaries SAC and Swale SSSI:  Survey Report

APEM. 2013. Verification survey of intertidal rock habitats within the Stour & Orwell Estuaries rMCZ and Blackwater, Crouch, Roach & Colne Estuaries rMCZ: Project Plan February 2013. Submitted to Natural England. APEM reference 412595.

Environment Agency (2017) Essex estuary SAC Benthic survey report.

1. **References**

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C. & Vincent, M., (2001), Marine Monitoring Handbook, 405 pp, ISBN 1 85716 550 0. Available online at: <http://jncc.defra.gov.uk/page-2430>

JNCC (2004), Common Standards Monitoring Guidance for Marine, Version August 2004, ISSN 1743-8160. Available online at: <http://jncc.defra.gov.uk/page-2236>

Wyn, G., Brazier, P., Jones, M., Roberts, S., Cooke, A., Lough, N. & Uttley, C. (2000). CCW Handbook for Marine Intertidal Phase 1 Survey and Mapping, 107 pp. Marine Science Report No. 00/06/01, February 2000, Countryside Council for Wales, UK.

1. **Contract Award Criteria**

We will award this contract in line with the most economically advantageous tender (MEAT) as set out in the following award criteria:

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Weighting** | **Scores** |
| Cost | 30% | Ranked in cost order |
| Availability/ capacity |  | Pass/fail |
| Quality of proposal based on the survey design meeting the requirements of the new proposal, number of samples, statistical rigour and power of the design. | 30% | Using scoring criteria set out below |
| The ability of the sampling strategy to be replicated in future years or for other applications and to provide a survey report | 10% | Using scoring criteria set out below |
| Relevant expertise and skills of team | 30% | Using scoring criteria set out below |

For a score of 100: Excellent - Response is completely relevant and excellent overall. The response is comprehensive, unambiguous and demonstrates a best-in-class thorough understanding of the requirement and provides details of how the requirement will be met in full.

For a score of 70: Good - Response is relevant and good. The response demonstrates a good understanding and provides details on how the requirements will be fulfilled.

For a score of 50: Acceptable - Response is relevant and acceptable. The response provides sufficient evidence to fulfil basic requirements.

For a score of 20: Poor - Response is partially relevant and/or poor. The response addresses some elements of the requirements but contains insufficient / limited detail or explanation to demonstrate how the requirement will be fulfilled.

For a score of 0: Unacceptable - Nil or inadequate response. The response fails to demonstrate an ability to meet the requirement.

**7.1 Disclosure**

All Central Government Departments, their Executive Agencies and Non Departmental Public Bodies are subject to control and reporting within Government. In particular, they report to the Cabinet Office and HM Treasury for all expenditure. Further the Cabinet Office has a cross-Government role delivering overall Government policy on public procurement, including ensuring value for money and related aspects of good procurement practice.

For these purposes, the Authority may disclose within Government any details contained in your quotation. The information will not be disclosed outside Government during the procurement.

In addition, the Authority is subject to the Freedom of Information Act 2000 and the Environmental Information Regulations 2004, which provide a public right of access to information held by public bodies. In accordance with these two statutes, the Authority may be required to disclose information contained in your quotation to any person who submits a request for information pursuant to those statutes.

By submitting a quotation, you consent to these terms as part of the procurement.

**7.2 Disclaimers**

Whilst the information in this RFQ and any supporting information referred to herein or provided to you by the Authority have been prepared in good faith the Authority does not warrant that this information is comprehensive or that it has been independently verified.

The Authority does not:

* make any representation or warranty (express or implied) as to the accuracy, reasonableness or completeness of the RFQ;
* accept any liability for the information contained in the RFQ or for the fairness, accuracy or completeness of that information; or
* accept any liability for any loss or damage (other than in respect of fraudulent misrepresentation or any other liability which cannot lawfully be excluded) arising as a result of reliance on such information or any subsequent communication.

Any supplier considering entering into contractual relationships with the Authority following receipt of the RFQ should make its own investigations and independent assessment of the Authority and its requirements for the goods and/or services and should seek its own professional financial and legal advice.

**Protection of Personal Data**

In order to comply with the General Data Protection Regulations 2018 the contractor must agree to the following:

* You must only process any personal data in strict accordance with instructions from the Authority
* You must ensure that all the personal data that we disclose to you or you collect on our behalf under this agreement are kept confidential.
* You must take reasonable steps to ensure the reliability of employees who have access to personal data.
* Only employees who may be required to assist in meeting the obligations under this agreement may have access to the personal data.
* Any disclosure of personal data must be made in confidence and extend only so far as that which is specifically necessary for the purposes of this agreement.
* You must ensure that there are appropriate security measures in place to safeguard against any unauthorised access or unlawful processing or accidental loss, destruction or damage or disclosure of the personal data.
* On termination of this agreement, for whatever reason, the personal data must be returned to us promptly and safely, together with all copies in your possession or control.

**General Data Protection Regulations 2018**

For the purposes of the Regulations the Authority is the data processor.

The personal information that we have asked you provide on individuals (data subjects) that will be working for you on this contract will be used in compiling the tender list and in assessing your offer. If you are unsuccessful the information will be **held and destroyed within two years** of the award of contracts. If you are awarded a contract, it will be retained for the duration of the contract and destroyed within **seven years** of the contract’s expiry.

We may monitor the performance of the individuals during the execution of the contract, and the results of our monitoring, together with the information that you have provided, will be used in determining what work is allocated under the contract, and in any renewal of the contract or in the award of future contracts of a similar nature. The information will not be disclosed to anyone outside the Authority without the consent of the data subject, unless the Authority is required by law to make such disclosures.

Appendix 1: Technical Questions

Quotes will be evaluated for both technical and commercial merit using the evaluation criteria below to determine which quote is the most economically advantageous.

**Ref:**

**Project:**

**Technical questions – 70%**

|  |
| --- |
| 1. **1. Please supply a proposed schedule of work, stating the timescales you will be able to execute and deliver the products specified above. See Section 4.1 Timeline for project delivery – Pass/Fail** |
| 1. **2. Provide a statement on your availability & capacity to mobilise a survey team - Pass/Fail.** |
| 1. **3. Provide CVs for the survey team. C.V.s should demonstrate appropriate skills for intertidal survey work – 30 %** |
| 1. **4. Provide a summary of your survey design methodology – 30 %** |
| 1. **5. Report proposal including data analysis and survey report – 10 %** |

**SUBMITTED BY:**

|  |  |
| --- | --- |
| **Contractor name** |  |
| **Address** |  |
| **Email** |  |
| **Telephone** |  |
| **Fax** |  |

1. A biotope is defined as the combination of an abiotic (physical) habitat and its associated community of species. It can be defined at a variety of scales (i.e. biotope complex, biotope or sub-biotope) and importantly is an association that occurs regularly i.e. is not ephemeral. The term is described fully in the Marine Habitat Classification 2004 (update of the Marine Nature Conservation Review, MNCR classification, 1997) [↑](#footnote-ref-2)