1. Background to Natural England

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

Benfleet and Southend Marshes SPA Ornithological Surveys and Biotope Survey and Mapping

2. Background to the specific work area relevant to this purchase

Benfleet and Southend Marshes SPA is located in south-east Essex, on the northern bank of the Thames Estuary. It qualifies under Article 4.2 of the Birds Directive by supporting internationally important populations of regularly occurring migratory species, and an internationally important assemblage of waterfowl.

Much of the site is below national sea level and it is made up of several intertidal, subtidal and terrestrial habitat types that birds rely upon for loafing, roosting and foraging. In many locations the presence of a seawall separates the terrestrial parts of the site (such as freshwater and coastal grazing marsh) from the intertidal and marine zones (mixed and coarse sediments, saltmarsh, sand and mud flats, shell banks and seagrass beds).

Due to the high flood risk in the Thames Estuary basin as a result of sea-level rise and erosion, coastal squeeze and intertidal habitat loss are a concern within this site. Most of the intertidal habitat is muddy in character, with extensive areas of saltmarsh and saltmarsh basins, inlets, seagrass beds and lagoons in the low-lying areas. The significant saltmarsh roost areas at Two Tree and Canvey Point in the SPA are considered to be in unfavourable condition when assessed through its component SSSI units; the remaining inner creek saltmarsh has experienced no deterioration or improvement in unfavourable condition, and is generally considered to be recovering.

Extensive condition improvements have taken place on the adjacent grassland SPA and SSSI habitats. The SPA grassland is mostly coastal grazing marsh with ditches, and includes the sea wall with borrowdykes, which collectively provide supporting habitat for overwintering waterfowl. The whole area, including the adjoining SSSI grassland downs, supports notable botanical and invertebrate assemblages characteristic of the Thames terrace and marshes. There is public access to virtually all the sea walls around the site and in several areas there is a lack of a sufficient buffer of mud or sand flats between the feeding/roosting birds and the shoreline, leading to high rates of disturbance. In addition to this, there is also significant watercraft activity in and adjacent to the SPA and the area is exposed to further potential disturbance by development of coastal infrastructure.

Natural England have identified a requirement to assess the abundance and distribution of the SPA designated features within the Benfleet and Southend Marshes SPA and the areas of supporting habitat on which they rely so as to improve the quality of our site condition assessment and local evidence base and ensure that any advice provided relating to the site is robust.

3. Requirement

The aim of this project is to undertake a comprehensive survey in the Benfleet and Southend marshes SPA to assess the extent and condition of intertidal sedimentary assets to enhance our understanding of ecosystem services. This will involve enhanced analysis for bird food resource availability and dependency of SPA features on the sedimentary assets and will be used to map ecosystem asset and flows, develop bird food resource models, and provide evidence to support Natural England's condition assessment and conservation advice for the SPA.

Natural England wishes to commission Phase I and Phase II intertidal survey work during the Autumn of 2025 (September to November) to gather robust evidence on the distribution and extent of intertidal habitats and features of intertidal habitats (Mud flats, sediments, mussel beds or biogenic reefs). This project will deliver a detailed map of SPA features and its food sources at a range of species biotopes; and will interrogate and analyse the detailed evidence collected to inform Condition Assessment, the formulation of Conservation Advice and the construction of an Ecosystem Asset baseline for the area in question.

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

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 judgments.

The survey design for this tender should produce high-quality biological data of suitable resolution to allow key attributes of condition to be assessed according to [Common Standards Monitoring guidance](https://jncc.gov.uk/our-work/common-standards-monitoring-guidance/) and to assess the quality of ecosystem assets. This will be 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 EA infaunal analysis labs to achieve this aim.

In brief, Natural England is 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/SSSI components of the EMS.

Natural England is seeking a contractor to carry out four tasks;

The key aims and objectives of the survey are to:

1. Undertake Phase I and Phase II surveys of the Benfleet and Southend marshes SPA to gather robust evidence on the distribution and extent of sedimentary intertidal habitats and features;
2. Identify and map the extent and distribution of intertidal sedimentary habitats and biotopes of the Benfleet and Southend marshes SPA according to the JNCC Marine Habitat Classification for Britain and Ireland
3. Provide the bird prey biomass assessment and environmental data ( such as Tidal cycle and temperature ) and collection for future modelling), and
4. Low tide counts of non-breeding birds within the intertidal habitats of Benfleet and Southend Marshes SPA

Natural England will use the evidence collected to enhance the understanding of the abundance and distribution of the SPA designated features within the Benfleet and Southend Marshes SPA and the areas of supporting habitat on which they rely to improve the quality of our site condition assessment. This will also enhance the understanding of ecosystem services within the Benfleet and Southend marshes SPA to enable the mapping of ecosystem assets and flows and to inform the development of a Natural Capital Account for Benfleet and Southend marshes SPA.

Ideally, the survey methodology and analysis will be designed to be compatible with previous monitoring (2000) to allow a temporal comparison of the extent and distribution of intertidal habitats.

3.1 Phase I and Phase II surveys

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 ecosystems asset quality and quantity to assess ecosystem service flows and feature condition of the Benfleet and Southend marshes SPA.

Overall outputs of the combined approach:

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. Low tide counts of non-breeding birds of Benfleet and Southend Marshes SPA and dependency of SPA features on the biotopes and habitats. (sector based on previous BTO guidelines)



Figure . Benfleet and Southend Marshes SPA WeBS sectors

Under this specification contractors must:

- Develop, agree and implement, in collaboration with Natural England a survey plan 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.

- 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 where possible enable temporal comparisons to be made with previous datasets but the overall objective is to provide an ecosystem asset map comprising the location and quality of intertidal habitats.

- 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 recreational damaging activities including Fireworks during winter months). These should be mapped where possible in accordance with the methods outlined in the CCW Phase I [Biotope Handbook](http://www.ccgc.gov.uk/landscape--wildlife/managing-land-and-sea/idoc.ashx?docid=a393937a-b057-4fec-9eba-e534ec627599&version=-1) and should include damaging or potentially damaging activities.

Please note: Infaunal core sample and PSA analysis can be undertaken by a third-party contractor under a separate subcontract subject to NE Consulting. This is subject to the contractor's decision. An NE/EA framework is also an option for the winning contractors to seek advice from NE (However in this case, Sample analysis cost would also therefore be required in the total costing).

- Prepare samples for transport to the laboratory (e.g. complete OCR forms, sieve and fix samples in formaldehyde, package ready for transport in similar pots used by the Environment Agency’s National Laboratory Service, and arrange courier). The contractor is expected to liaise with the sample 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. This should all be included in the costing.

- 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 in order to focus analysis on investigating particular impacts.

- Provide fully detailed “standard operating protocols” for the work undertaken to ensure that methods can be repeated in the future.

- 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.

- 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.

3.2 Identify and map the extent and distribution of intertidal sedimentary habitats and biotopes of the Benfleet and Southend marshes SPA according to the JNCC Marine Habitat Classification for Britain and Ireland

- 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)

- Provide all data to the relevant standards set out in section on reporting below

- 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](http://www.emodnet-seabedhabitats.eu/default.aspx?page=1693).

- Note the presence and location of any habitats or species that would qualify 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.

- A sampling design needs to be developed for this work. This should seek to build on any previous work listed 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.

3.3 Bird prey biomass assessments

Field survey and sampling

NE envisages that the Phase I survey will cover 100% of the site wherever possible, following the bird counter sectors (Map). Where the site is large, or access complex then we would expect the contractor to present an appropriate strategy for the Phase I element that will cover as much of the site as possible. This will facilitate interpolation across non surveyed areas, to optimise the design by balancing desk-based, Phase I and Phase II elements. This broad-scale “walkover” style survey is to be supported by a stratified targeted in-situ survey stations distributed across the site. In-situ sampling at these stations is intended to quantify the species assemblages and corroborate biotope assessment made during the Phase I survey, which will also provide in-situ granulometry and faunal descriptions. This survey should be planned in accordance with the methods detailed in the CSM guidance, JNCC Marine Monitoring Handbook (Davies et al., 2001) and the CCW Handbook for Marine Intertidal Phase I Survey and Mapping (Wyn et al., 2000).

A robust sampling strategy for Phase II infaunal sampling of target habitats (e.g. coverage and other elements such as Stoney/cobble reef, Biogenic reef (Oyster/Mytilus and/or Sabellaria, particular shellfish species (i.e. Cerastoderma), Seagrass (Zostera) etc.), should be undertaken. We are not stipulating locations for the Phase II element of the survey but would expect samples from approximately over 100 stations in Benfleet and Southend marshes SPA locations; these should be agreed with Natural England. The Phase II survey plan should be agreed following the results of the Phase I survey to ensure samples are taken from across representative and target habitats in accordance with the aims and objectives.

Sample locations should be:

1. Geographically spread throughout the site

2. Representative of the range of sediments of interest

3. Proportionate in their split to the overall coverage of the sediment of interest

4. Randomly located within the broad sediment types identified through Phase I

5. Distributed across the site as transects with stations at mid and low shore (where appropriate)

If appropriate sampling can be stratified using the sectors described below.

A series of single cores should be taken from each station across the site, with a subset of stations where triplicate samples are taken (0.01m2 core, 0.5mm mesh sieve) for infaunal sampling (abundance) and stored separately (be mindful of previous Water Environment Regulations (WER) samples in the WB 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 0.01m2 core will be collected for PSA analysis at each station. 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 following the [NMBAQC quality control guidelines, following Standard Operating Procedure ES-04](http://www.nmbaqcs.org/qa-standards/).

Natural England envisages that the required survey work under this specification should be scheduled to be completed by the end of October- November 2025 for the autumn survey; however, potential contractors should provide contingency dates should the planned survey be affected e.g. by weather downtime.

|  |
| --- |
| Indicative only \* Phase 2 sampling: ~100 macrofaunal cores, 15cm deep (- Includes number of triplicate cores and number of single cores based on Phase 1 and drone survey information;\*Sediment/ PSA cores, 15 cm deep; \*Bird food resource cores, 30 cm deep;  |

\*Details of the indicative species list size classes to be measured during survey and subsequent infaunal analysis.

|  |  |
| --- | --- |
| Species  | Size fractions  |
| Hediste diversicolor, Arenicola marina + other polychaetes  | <25mm, 25-50mm, 50-75mm, 75-100mm, >100mm  (‘relaxed’ length).   |
| Corophium volutator + other corophiid species  | <3mm, >3mm  |
| Peringia ulvae  | <3mm, 3-5mm, >5mm  |
| Mytilus edilus  | <5mm, 5-10mm, 10-15mm, 15-20mm, 20-30mm, >30mm  |
| Cerastoderma edule  | <5mm, 5-10mm, 10-15mm, 15-20mm, 20-30mm, >30mm  |
| Macoma balthica  | <9mm, 9-15mm, 15-20mm, >20mm  |
| Other bivalve species  | < 5mm, 5-10mm, 10-15mm, 15-20mm………  |
| Crangon crangon  | <15mm, 15-30mm, >30mm  |
| Carcinus maenas  | <10mm, 10-20mm, 20-30mm, 30-40mm, 40-50mm, >50mm  |
| Littorina spp.  |   |

Bird prey biomass should be assessed to provide an indication of the value of substrate to SPA features. The total weight of several species (mussels, cockles, littorinids, Invertebrates) per quadrat should be recorded for a subset of samples. Prey biomass and size and range of cockles and mussels should also be recorded for a subset of quadrats. These results can then be used to obtain average biomass values for prey samples relating to bird feeding activity as per the previous survey series. Annelid spp. will also need to be weighed (not weighed during previous ) following standard practices and recorded if possible.

3.4 Low tide bird count survey

To deliver a programme of 4 (four) once monthly (October 2025 – January 2026) standardised shore-based surveys of the abundance and distribution of the SPA designated features; and Waterfowl assemblages

● Dark-bellied brent goose (Branta bernicla bernicla), Non-breeding

● Dunlin (Calidris alpina alpina), Non-breeding

● Grey plover (Pluvialis squatarola), Non-breeding

● Knot (Calidris canutus), Non-breeding

● Ringed plover (Charadrius hiaticula), Non-breeding

● Waterfowl/wader assemblages

These will be carried out in accordance with the BTO/RSPB/JNCC Wetland Bird Survey (WeBS) Low Tide Counts (LTC) scheme methodology (https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/low-tide-counts-methods) and use the BTO Low Tide Count Sectors (Annex A)

The standard LTC scheme recording from is also available online at: https://www.bto.org/sites/default/files/u18/downloads/counter\_resources/lowtidecountform.pdf

Each of the sites is subdivided into several, pre-established and clearly defined low tide count sectors (Area map) which must be adhered to when surveying in this project.

Counts for task 1 should be undertaken once monthly from October 2025 – January 2026, over as few days as possible each month and on similar tides where feasible.

For all counts, birds should be identified to species (see list above)

All count data should be submitted to the WeBS LTC organiser (lowtide@bto.org) at the BTO through a standard spreadsheet (with metadata on count sector, date, time, etc) which should be obtained from the WeBS LTC organiser.

Full details of logistic considerations for survey work should be provided in the tender e.g. operational restrictions, or other factors that may justify excluding coverage of certain areas and how these restrictions will be addressed.

There are various risks that may constrain the ability to complete the survey and data processing within the required timescales, considering factors such as weather, access restrictions etc. Bidders should describe the potential risks and provide details of relevant contingency measures.

To enable successful delivery of the bird surveys, the successful Contractor is expected to:

1. Plan the delivery of the low tide counts across all sites/months and submit these plans at tendering stage.

2. Conduct the surveys, including organisation and positioning of surveyors and equipment, and ensuring that all health and safety requirements are met.

3. Submit brief survey completion reports following the completion of each of the four, once monthly surveys.

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.

It’s important that the bird surveys cover WeBS core count period of tide (usually 2 hours either side of high tide focusing on roosts) and WeBS Low Tide Counts (2 hours either side of low tide) to cover the notable designated site period September – end March, at least (with at least one visit per month on or close to BTO WeBS advertised dates). If there is a WeBS Core Count recorder already (Neil Fuller -personal confirmation- there won’t be a Low Tide Count in 2025.) it would make sense for the surveyors to contact via BTO and co-ordinate dates so that complementary & supplementary data is obtained to increase the available dataset. Ideally, understanding how the birds move with the tide would be helpful, which would be linked to the availability of roosts and sediment exposure duration.

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. Carried out according to [BTO WeBS protocol](https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/core-counts-methods).

3.5 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, and finalising survey design and methodologies. For example intertidal surveys will 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.

4 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) 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.

### 5 Data Analysis

Sample analysis will be undertaken by a third-party contractor or an independent party (please see above)

### 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:

1. Equipment, clothes and boots should be clean before carrying out any work on site
2. When on or near water it is important that equipment is drained after use and as far as possible dried
3. Hovercrafts / 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)

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/).

 7 Health & Safety 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. Surveys will be done out of season, risks around reduced daylight and poor weather etc. need to be highlighted.

### 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.

9. 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 12) 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/ITT.

10 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’. Following Natural England guidance and using the Natural England Microsoft Word template (Available from: [Natural England publishing standards for commissioned reports - NECR000](https://publications.naturalengland.org.uk/publication/5790636781600768)).

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 datasets must have associated metadata and meet appropriate organisational metadata standards. Relevant metadata standards are a requirement for data which we publish externally.

All interpreted products following data analysis should accompany the draft report; these will include:

1. All GIS datasets need to be provided in ESRI ArcGIS format compatible with ArcGIS 10.2 and have attached metadata.
2. All GIS files containing habitat data for each individual survey need to be produced to the [MESH translated habitat Data Exchange Format (DEF)](http://www.emodnet-seabedhabitats.eu/default.aspx?page=1636) 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](http://www.emodnet-seabedhabitats.eu/default.aspx?page=2067), 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 tracks, and links to data obtained should also be included as a single GI layer.
3. 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](http://www.emodnet-seabedhabitats.eu/default.aspx?page=1693).
4. Accompanying metadata for the data set must meet the [MEDIN metadata discovery standard](http://www.oceannet.org/marine_data_standards/medin_disc_stnd.html). 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 Evidence for Contractors’ will be provided to the winning contractor.
5. Copies of the original data spreadsheets or databases are to be provided in the appropriate Microsoft Office format
6. Still photographs to be provided in their raw format on CD/DVD or USB-compliant external hard drives. NE needs site images for the purpose of publication, and therefore, quality images taken as part of the survey are anticipated.

All sample data (e.g. grab / core / Quadrat sample analyses, video/still photography analyses, 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. Natural England will provide the licence keys for Marine Recorder. Natural England will supply a ‘Marine Recorder guidance for contractors’ document to successful contractors.

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.

Standard survey imagery (stills and video) is to be provided in their raw format electronically or on USB compliant external hard drives (to be provided by the contractor).

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 Phase II autumn surveys the first payment will be made, second and final payment will be made after completion of Bird counts surveys, reports and completion of all project deliverables.

Bird count data should be reported in a manner that is consistent with BTO standards where possible in order to allow for the submission of data to the BTO (guidance available on the [BTO WeBS website](https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/core-counts-methods)).

11 Sustainability

 Natural England protects and improves the environment and is committed to reducing the sustainability impacts of its activities directly and through its supply chains. We expect the Contractor to share this commitment and adopt a sound, proactive sustainable approach in keeping with the 25 yr environmental plan/our commitments compliant with all applicable legislation. This includes understanding and reducing direct and indirect sustainability impacts and realising opportunities, including but not restricted to; resilience to climate change, reducing greenhouse gas emissions, water use and quality, biosecurity, resource efficiency and waste, reducing the risk of pollution, biodiversity, modern slavery and equality, diversity & inclusion, negative community impacts.

As a delivery partner, the successful contractor is expected to pursue sustainability in their operations, thereby ensuring the Contracting Authority is not contracting with a supplier whose operational outputs run contrary to the Contracting Authority’s objectives. The successful contractor will need to approach the project with a focus on the entire life cycle of the project.

12 Outputs and Contract Management

12.1 Project deliverables

On award of the contract, the supplier will be required to deliver the following:

12.1.1 Ground-based survey work

A protocol agreed with the supplier of the aerial surveys setting out the means of coordination of the ground-based and aerial-based survey(s) of the specific sub-set of sites / low tide count sectors to be surveyed as part of the validation study to maximise synchronicity of data collection.

Four brief survey completion reports (one within 7 days of completion of each of the standard monthly low tide counts) in Microsoft Word format detailing pertinent information regarding the survey (dates, time, weather, disturbance, any other issues affecting data quality etc).

A brief survey completion report (within 7 days of completion of the validation study survey) in Microsoft Word format detailing pertinent information regarding the survey (dates, time, weather, disturbance, any other issues affecting data quality etc).

12.1.2 Analyses

1. Numbers (e.g. means, peaks, variation) for each species for each count sector for each LTC site in each survey month (Task 1) and for each repeat count conducted of each species on each day within each of the count sectors (and any agreed subdivisions of those) (Task 2).
2. A single final technical report

Following Natural England guidance and using the Natural England Microsoft Word template (Available from: [Natural England publishing standards for commissioned reports - NECR000](https://publications.naturalengland.org.uk/publication/5790636781600768)). The report should provide the following:

1. an executive summary,
2. an introduction and background to the work,
3. a methods section detailing the adopted surveying approach for each of Tasks 1 & 2,
4. a results section providing tables of count data for all species in each WeBS LTC scheme count sector on each survey of each site surveyed as part of Task 1,
5. a results section providing tables of all repeat count data for all species in each WeBS LTC scheme count sector (and/or agreed subdivisions of these) surveyed as part of Task 2, i.e. the validation study,
6. a discussion of the findings from the ground-based surveys needed to inform the validation study, outlining any caveats concerning the use of and limitations to the count data presented and recommendations regarding its best use in the subsequent validation analyses (to be completed under a separate contract).

12.1.3 Accompanying datasets

Quality assured datasets of validated observations for all species recorded – so that pre-agreed data standards are met e.g. compliance with requirements for entry into the WeBS LTC scheme database.

Where relevant, datasets should include a sheet with meta-data and field name explanations.

All data provided must (where appropriate) comply with Natural England metadata and GIS standards (see Annex 3).

All count data should also be submitted to the WeBS LTC organiser (lowtide@bto.org) at the BTO through a standard spreadsheet which should be obtained from the organiser.

Following agreement from Natural England, all relevant datafiles and associated metadata records may be required to be submitted by the contractor to a pre-agreed public repository within a pre-agreed period following completion of the surveys.

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| --- | --- | --- | --- |
| Reference | Deliverable | Responsible Party | Date of completion |
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Project Management

Whilst the final timetable can be agreed between Natural England and the successful Contractor, we anticipate the project working along the following timeline;

|  |  |  |
| --- | --- | --- |
| Milestone | Responsible Party | Date of completion |
| Project inception meeting/ teleconference between contractor/sub-contractor and Natural England | Natural England, Contractor | W/C 15th September 2025 |
| Contractor agrees survey methodology and timetable with Natural England | Contractor | By 26th September 2025 |
| Contractor submits brief survey completion report following first low tide count (task 3) | Contractor | End of October 2025 |
| Contractor submits brief survey completion report following second low tide count (task 3) | Contractor | End of November 2025 |
| Teleconference between Natural England and contractor to discuss progress and any issues arising | Natural England, Contractor | End of November 2025 |
| Contractor submits brief survey completion report following third low tide count (task 3) | Contractor | End of December 2025 |
| Contractor submits brief survey completion report following biotope mapping survey (task 1) | Contractor | End of January 2026 |
| Contractor submits brief survey completion report following fourth low tide count (task 3) | Contractor | End of January 2026 |
| Teleconference between Natural England and contractor to discuss progress with analyses and any issues arising | Natural England and Contractor  | End of January 2026 |
| Contractor submits draft final technical report to NE | Contractor | 13th March 2026 |
| Natural England/BTO provide feedback on draft final technical report | Natural England and BTO | 20st March 2026 |
| Teleconference between Natural England and contractor to discuss feedback on draft final technical report | Natural England and contractor | 23rd March 2026 |
| Contractor submits final technical report addressing Natural England comments on draft report to satisfaction on NE project officer  | Contractor | 27th March 2026 |
| Submission of ArcGIS layers, other associated datasets and metadata to agreed standards. | Contractor | 27th March 2026 |
| Wash-up meeting | Natural England, BTO and Contractor | 27th March 2026 |
| Contract to be completed | Natural England and Contractor | 30th March 2026 |