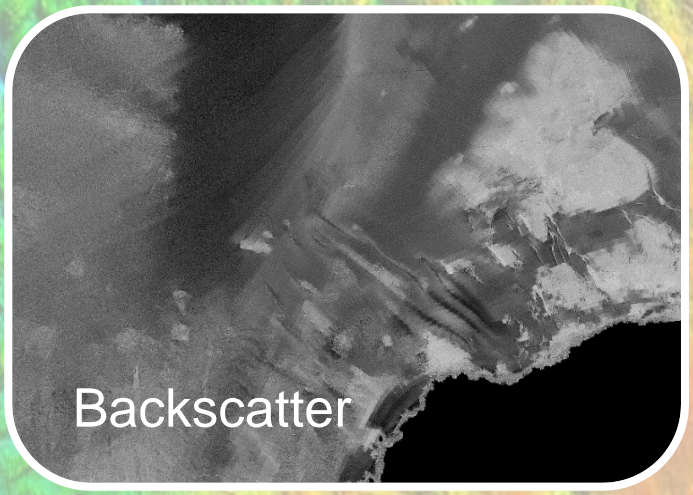
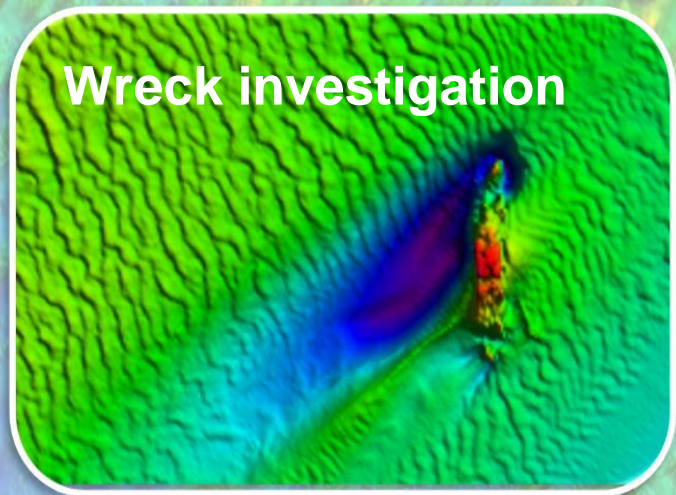
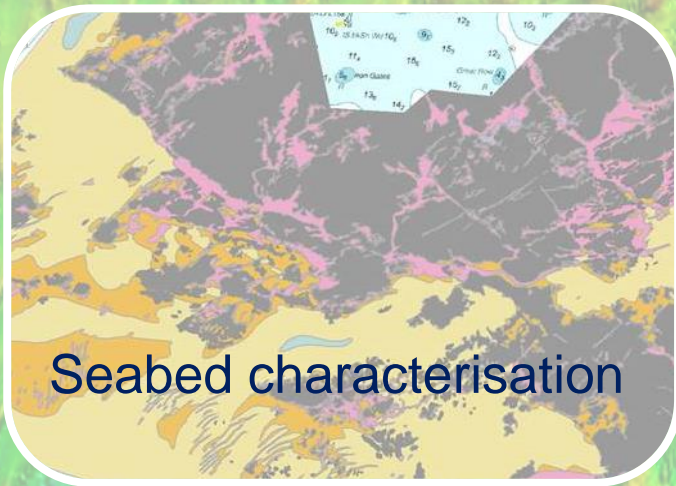


UK Civil Hydrography Programme 2024



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Foreword

It is my pleasure to once again formally acknowledge all those involved with UK Civil Hydrography Programme survey operations, data processing and validation, whether on the vessels, on site, in the office or working from remote locations. Despite a prolonged period of extreme weather, which caused considerable operational and logistical challenges, we have successfully and safely completed another full programme of high priority surveys.

There have been a couple of staff changes within the Hydro&Met team over the last year. January 2024 saw the departure from the team of Tammy Newey, our Hydrography Programme Lead, who has taken up a new role as Clean Ship Operations Policy Lead within the MCA. We are extremely grateful for the outstanding effort and contributions Tammy made to the Hydro&Met team and the UK CHP. She played a key role in strengthening contractual relationships with numerous CHP contractors, partner organisations and colleagues across various Government departments. In August 2023, we welcomed Matt Sheldon who joined us as the Maritime Safety Information (MSI) Lead. He has brought considerable experience and technical skills to operational and policy areas of the business and continues to improve how the MSI function is delivered by the UK.

The CHP is effectively and efficiently managed and delivered as a result of many important factors. These include recognition of the importance of people within our seabed mapping community, the investment of time and energy, a passion and pride in the data being collected, high levels of dedication and commitment, and effective communications that strengthen our relationships with contractors, govt partners and stakeholders. All these features are part of the 'spirit of the CHP' and readily displayed by all the teams involved.

As part of our ongoing commitment to lead national survey planning coordination, we have established further agreements with both UKHO and MOD Salvage and Marine Operations teams. These agreements have enabled additional survey operations to be undertaken, ensuring high quality data is collected and maximising the efficient use of public-funded survey assets and resources, providing utmost value for money.

We look forward to working with you to promote the collection, management, and access of publicly funded seabed mapping data.

Andrew Colenutt

Head of Hydrography & Meteorology

Maritime & Coastguard Agency

Introduction

As an executive agency of the Department for Transport, the Maritime and Coastguard Agency (MCA) plays a key role in implementing and enforcing the Government's maritime safety and environmental protection strategies. We are committed to preventing loss of life, continuously improving maritime safety, and protecting the marine environment.

Within this remit, the MCA has overall responsibility for the UK's hydrographic obligations under the Safety of Life at Sea Convention (SOLAS) but works in close partnership with the UK Hydrographic Office (UKHO) to ensure these obligations are met.

The MCA manages a multi-million-pound budget to systematically survey the waters around the UK. This programme is known as the "Civil Hydrography Programme" (CHP).

Under the CHP, commercial contracts are let to ensure accurate hydrographic information is gathered for updating the nation's nautical charts and publications. The hydrographic survey work commissioned for the CHP is undertaken by contractors, who gather and report seabed data using their own personnel, equipment, and vessels.

The CHP workscope is divided into the following streams:

- **Routine resurvey - navigationally critical shallow water areas with mobile seabed;**
- **Shallow water - predominantly 0 to 40m water depth; and**
- **Shallow to medium water – predominantly 0 to 200m water depth.**

The CHP prioritises areas of highest navigational safety risk and surveys and maps UK home waters - defined by the boundaries of the UK's Exclusive Economic Zone, an area in excess of 720,000km² - in order to keep our nation's nautical charts and publications current, safe and fit for purpose.

The MCA makes extensive use of geographic information systems (GIS) to prioritise survey areas using a contemporary risk analysis methodology capable of reflecting the changing pressures of the maritime sector.

To support the requirements of the CHP, the MCA specifies state-of-the-art survey technologies including high resolution multibeam echosounders (MBES) and Post Processed Kinematic (PPK) Global Navigation Satellite Systems (GNSS) to ensure accurate high-quality hydrographic information is gathered. Additionally, more focused work includes high-resolution wreck investigations, water column data collection and seabed grab sampling.

Prior to final data being accepted from contractors, it passes through a rigorous quality assurance process at the UKHO's Bathymetry Scientific Analysis Group, where checks are made against items such as data density, interline consistency, geodetic parameters, and tidal observations.

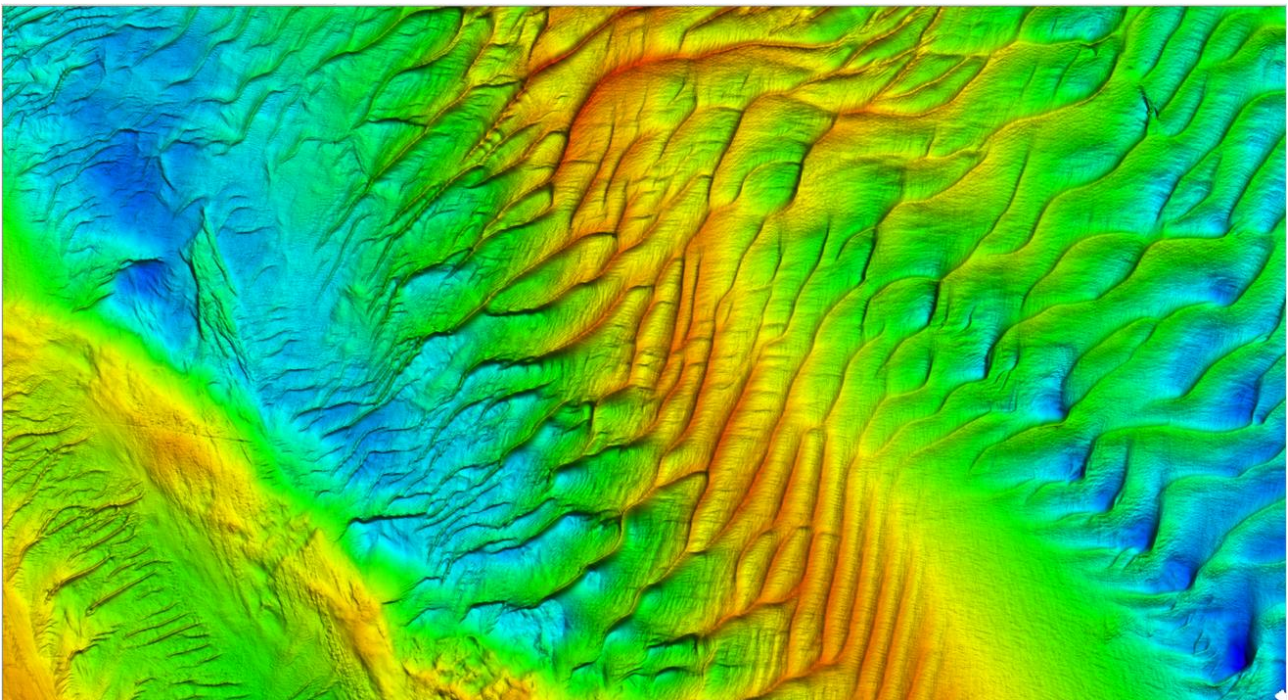
Once data has passed validation, it is archived to the UKHO's bathymetric database ready for inclusion in their nautical charting products.

The UKHO hosts the Marine Environment Data and Information Network (MEDIN) Data Archive Centre (DAC) for bathymetry data. Bathymetry data collected through the CHP are made freely available from

<https://www.gov.uk/guidance/inspire-portal-and-medin-bathymetry-data-archive-centre>

The British Geological Survey hosts the MEDIN DAC for geology, geophysics, and backscatter data. Backscatter, sediment sample location and metadata, and sediment texture sheet deliverables collected through the CHP are made freely available from <http://www.bgs.ac.uk/GeolIndex/offshore.htm> and

<https://webapps.bgs.ac.uk/services/ngdc/accessions/index.html>



HI 1821 EA1 Cockle Gateway (Lot 3 Routine Resurvey)

Hydrography & Meteorology Team

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marine_safety_information@mcga.gov.uk

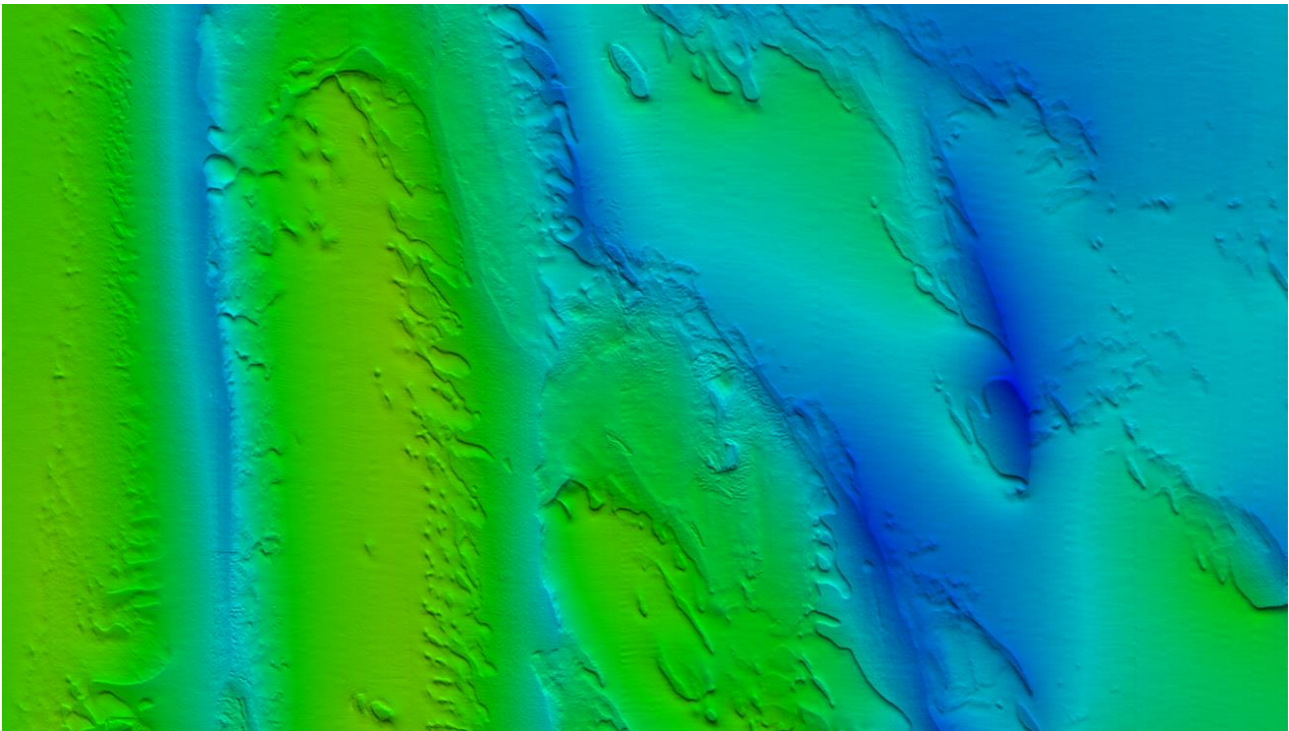
Civil Hydrography Annual Seminar

The MCA-convened Civil Hydrography Annual Seminar (CHAS) provides an open forum for Government and industry to come together to share their hydrographic data gathering and seabed mapping programmes for the forthcoming years to enable longer-term survey planning integration.

The primary aims of CHAS are:

- **To provide an open forum for public sector organisations to come together to share data gathering programmes for the forthcoming years.**
- **To encourage co-operative working and survey planning integration**
- **To realise the financial benefits of co-funding such work.**

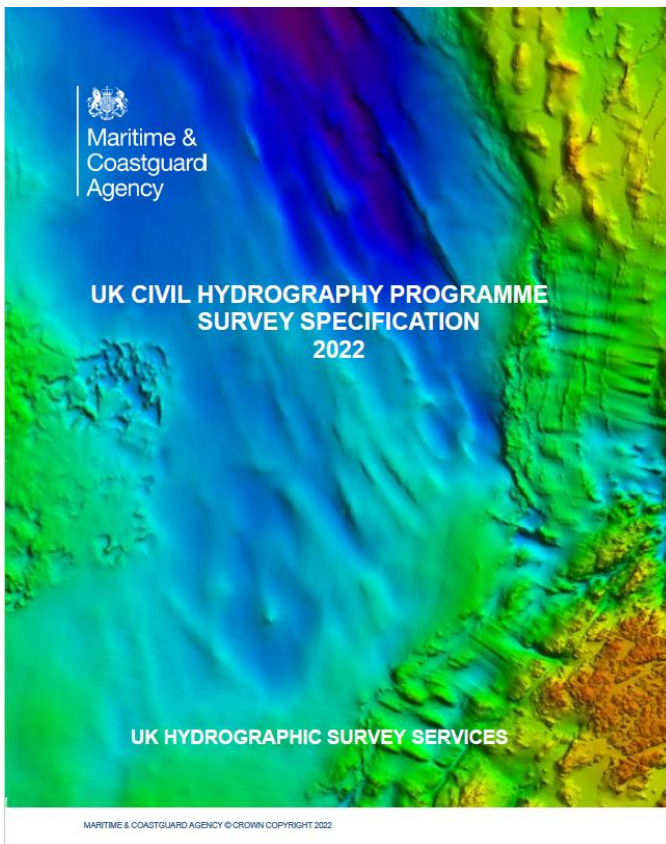
The MCA advocate a coordinated and integrated approach to the longer-term survey planning, which hopefully will enable the hydrographic sector to manage funding streams more effectively, develop new partnerships and strengthen existing collaborations between stakeholders.



HI 1797 Dogger Bank North Central West (Lot 2 Medium Water)

News from the CHP

UK CHP Survey Specification 2022



All CHP surveys awarded through the MCA Hydrographic Survey Services contracts comply with our UK CHP Survey Specification.

The UK CHP Survey Specification has evolved over time from previous iterations, with technical input from the UK Hydrographic Office (UKHO) and contributions from other Maritime Administrations, Hydrographic Offices, contractors and other MCA and CHP stakeholders.

It details the CHP-specific requirements for conducting hydrographic surveys undertaken on behalf of the MCA, in order to deliver UK requirements and services, and meets/exceeds the requirements stated in the IHO's Standards for Hydrographic Surveys. Special Publication No. 44 (Edition 6.1).

Where possible the intention is for the requirements to be equipment and software agnostic to allow Contractors the freedom to innovate and propose the most efficient and accurate methodology for completing the work to the required standards. It may be amended at any time as techniques, methodologies and/or requirements become available, with the intention to create and maximise economic efficiencies for Government and Contractors and environmental benefits.

The UK CHP Survey Specification is used in conjunction with the relevant Hydrographic Instructions (HI) and in combination with other quality assurance measures such as vessel and technical office visits, standardised reporting, and data validation. The specification coupled with those measures, provides confidence in the quality of the resultant data and deliverables for safety of navigation and other maritime geospatial products and publications.

The MCA's UK CHP Survey Specification 2022 may be re-used free of charge under the terms of the Open Government Licence with appropriate accreditation as detailed in the specification itself.

<https://www.gov.uk/guidance/uk-civil-hydrography-programme-chp>

CHP Survey Contracts

The work scopes for 2023-26 have been awarded to the following marine survey contractors following a rigorous competitive tendering exercise:

Lot 1 Shallow Water	
Lot 3 Routine Resurvey	
Lot 4 Receiver of Wreck, SS Richard Montgomery	Clinton Marine Survey AB
Lot 5 Supplementary Survey Services	
<hr/>	
Lot 2 Shallow to Medium Water	A-2-Sea Solutions Ltd

CHP 2023/24 surveys

A substantial programme of high priority surveys has been completed, including collaborative surveys and surveys the MCA has supported. In total, 26 CHP surveys have been conducted. The total area of seabed surveyed was 4,220.29km² of seabed:

Lot 1: Shallow Water

HI 1727 Race Bank to Sheringham Shoal
 HI 1787 Off Neist Point TSS
 HI 1790 Sanda Island
 HI 1792 Morcombe Bay Approaches
 HI 1802 Clacton-on-Sea to Gunfleet Sands
 HI 1803 Kentish Knock

Collaborative surveys (Lot 1)

HI 1817 King Williams Banks
 (funded by Isle of Man)
 HI 1850 SALMO wrecks
 (funded by MOD SALMO)

Lot 2: Medium Water

HI 1716 Dogger Bight North
 HI 1797 Dogger Bank North Central West

Collaborative surveys (Lot 2)

HI 1837 Celtic Deep
 (funded by RN/UKHO)

Lot 3: Routine Resurvey

HI 1821 EA1 Cockle Gateway
 HI 1822 EA2 Newarp Banks
 HI 1823 EA3 Cockle Shoal
 HI 1824 EA4A&B Caister Road
 HI 1825 EA5 Scroby Sands
 HI 1826 EA7A&B Cross Sands Focused
 HI 1827 EA8A The Roads
 HI 1828 EA9 Holm Channel
 HI 1829 EA10A&C Approaches to Lowestoft
 HI 1831 TE3A Sunk Focused
 HI 1832 TE5 Long Sand Head
 HI 1833 TE19 Fisherman's Gat Focused
 HI1834 Dover DWR C1 Tail of the Falls
 HI 1835 Dover DWT T Focused
 HI 1836 GS1 South Sand Head

Supported surveys

HI 1703 Withernsea to Spurn - commissioned by East Riding of Yorkshire Regional Coastal Monitoring Programme
 HI 1820 MBSW08 (Bude, Camel Estuary, Hayle, Perranporth Gannel Estuary) - commissioned by South West Regional Coastal Monitoring Programme

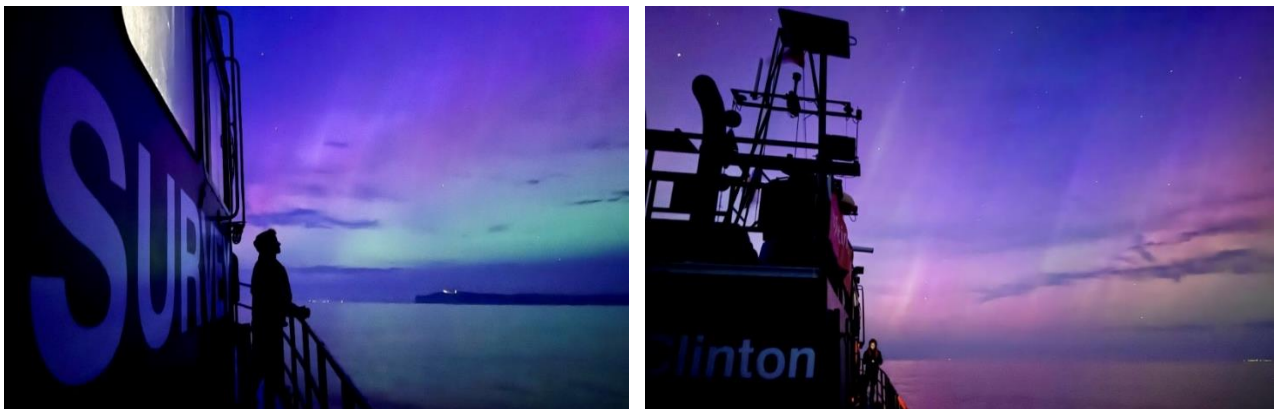
Aurora Borealis

From the 10 - 13th May 2024, the Earth was hit by the most intense solar storm since March 1989 as the Sun's activity ramped up to the peak of its current solar cycle. Several large solar flares and a series of coronal mass ejections were directed towards the Earth, sending large amounts of fast-moving magnetized plasma through space towards the Earth. These geomagnetic storms created beautiful auroras, causing skies to sparkle and dance, and be visible not only in polar regions but also at much lower latitudes than usual.



© V Bowman

Our CHP contractors were conducting survey operations during this period, and where the local weather conditions permitted, were fortunate to witness the aurora borealis firsthand.



© Clinton Marine Survey AB

Severe space weather events result can impact technology, equipment and health in space and at high altitude. For example:-

- disturb radio communication systems and satellites on the dayside of Earth;
- electro-magnetic radiation in the form of radio waves, X-rays, and UV light;
- power grid outages;
- disruption to Global Navigation Satellite Systems / Global Positioning Satellites;
- High Frequency (HF) radio communications outages;
- Satellite damage; and
- increased radiation levels at high altitude.

Survey Vessels 2024/25

Lot 1 Shallow Water, Lot 3 Medium Water and Lot 5 Supplementary Survey Services



MV Northern Wind © Clinton Group



MV Northern Storm © Clinton Group



MV Northern Wind & Lode © Clinton Group

Lot 2 Medium Water



Mintaka © A-2-Sea Group

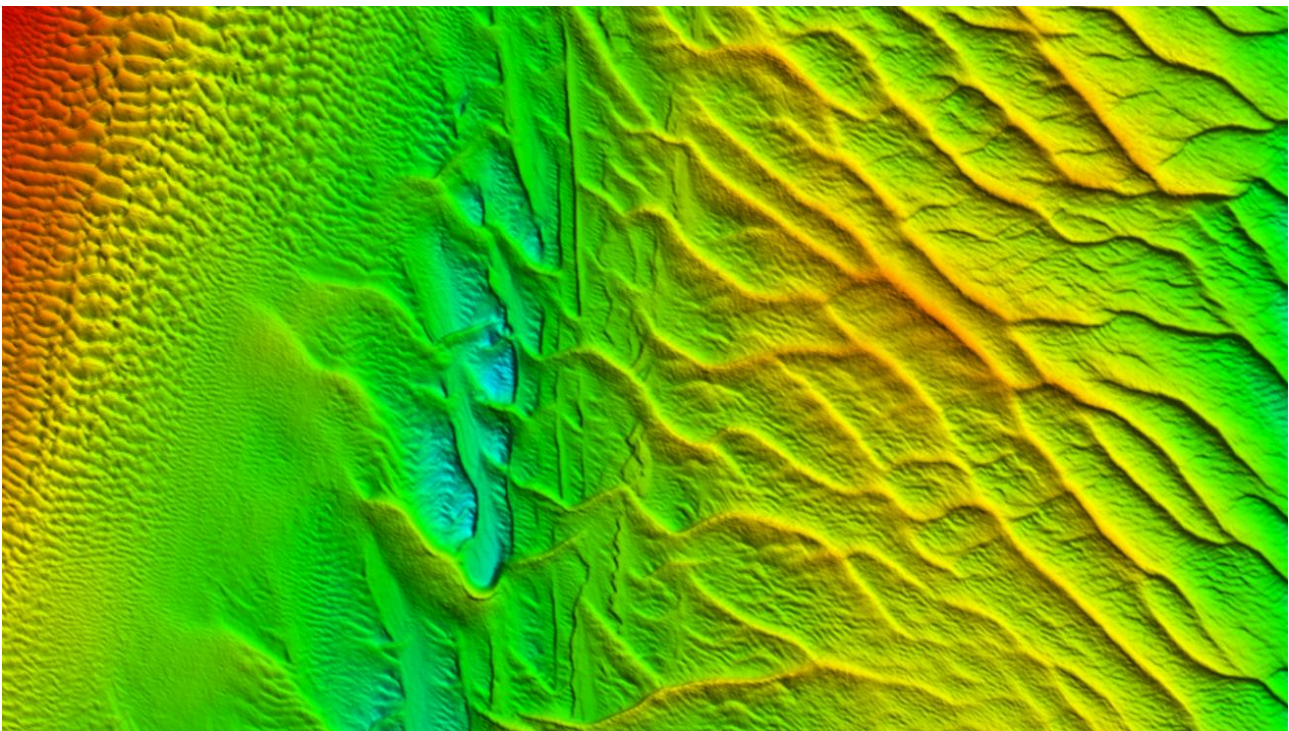


Morven © A-2-Sea Group

Survey Safety

Much of the hydrographic work completed by the CHP is undertaken by contractors who are required to gather seabed data using their own personnel, and vessels owned or chartered by themselves. Acquired data is then submitted to both the MCA and UKHO.

- I. Any vessel undertaking work on behalf of the CHP must adhere to MCA safety and regulatory guidelines. MCA safety requirements include:
- II. Contractors are always required to supply and adhere to a Safety Management Plan.
- III. All offshore personnel are required to have a valid medical certificate to at least the ENG1 standard.
- IV. All offshore personnel are required to have appropriate and valid safety training certification.
- V. Every vessel that participates in CHP survey operations is subject to approval by the MCA (via MCA marine office inspection) prior to work starting. Repeat inspections are undertaken annually for the duration of MCA contracts.
- VI. Paris MoU. Should a vessel employed on the CHP develop a high ship risk profile (HRS), then the MCA reserves the right to remove said vessel from the contract until she meets 'standard' (SRS) or 'low' (LRS) risk criteria.
- VII. All vessels participating in CHP surveys are visited by an MCA or a UKHO contract overseer on a regular basis throughout the year. A report covering each visit is kept on file by the MCA HydroMet team. Visits are primarily intended to focus on the quality of survey procedures and deliverables, but also include an informal safety assessment. If significant safety concerns are raised, then the contract overseer is required to notify the local MCA marine office.



HI 1828 EA9 Holm Channel (Lot 3 Routine Resurvey)

Hydrographic Notes

Reports of any newly discovered dangers to surface or sub-surface navigation are passed immediately by the CHP contractors to the MCA and UKHO using the H102 Hydrographic Note form.

The nature of the CHP means that H-Notes are regularly sent in. This information is then immediately passed on to the mariner, and chart updates and corrections made.

From survey operations that have already been completed during 2023/24, a total of 321 H Notes have been submitted, so far.

Lot 1: Shallow Water	No of H Notes	Lot 3: Routine Resurvey	No of H notes
HI 1727 Race Bank to Sheringham Shoal	29	HI 1821 EA1 Cockle Gateway	12
HI 1787 Off Neist Point TSS	3	HI 1822 EA2 Newarp Banks	2
HI 1790 Sanda Island	25	HI 1823 EA3 Cockle Shoal	5
HI 1792 Morcombe Bay Approaches	17	HI 1824 EA4A&B Caister Road	5
HI 1802 Clacton-on-Sea to Gunfleet Sands	71	HI 1825 EA5 Scroby Sands	7
HI 1803 Kentish Knock	100	HI 1826 EA7A&B Cross Sands Focused	4
HI 1817 King Williams Banks	2	HI 1828 EA9 Holm Channel	8
<u>Lot 2: Medium Water</u>		HI 1829 EA10A&C Approaches to Lowestoft	3
HI 1716 Dogger Bight North	5	HI 1832 TE5 Long Sand Head	12
HI 1797 Dogger Bank North Central West	2	HI 1833 TE19 Fisherman's Gat Focused	1
HI 1837 Celtic Deep	7	HI 1836 GS1 South Sand Head	1

Wreck Investigations

All wrecks found in a CHP survey are investigated with additional lines and detailed bathymetry and water column data. Sitting proud of the seabed, wrecks and other man-made obstructions often form the critical depth in each area of seabed. It is therefore crucial we have confidence that the shoalest point on these obstructions are found so the mariner can navigate safely.

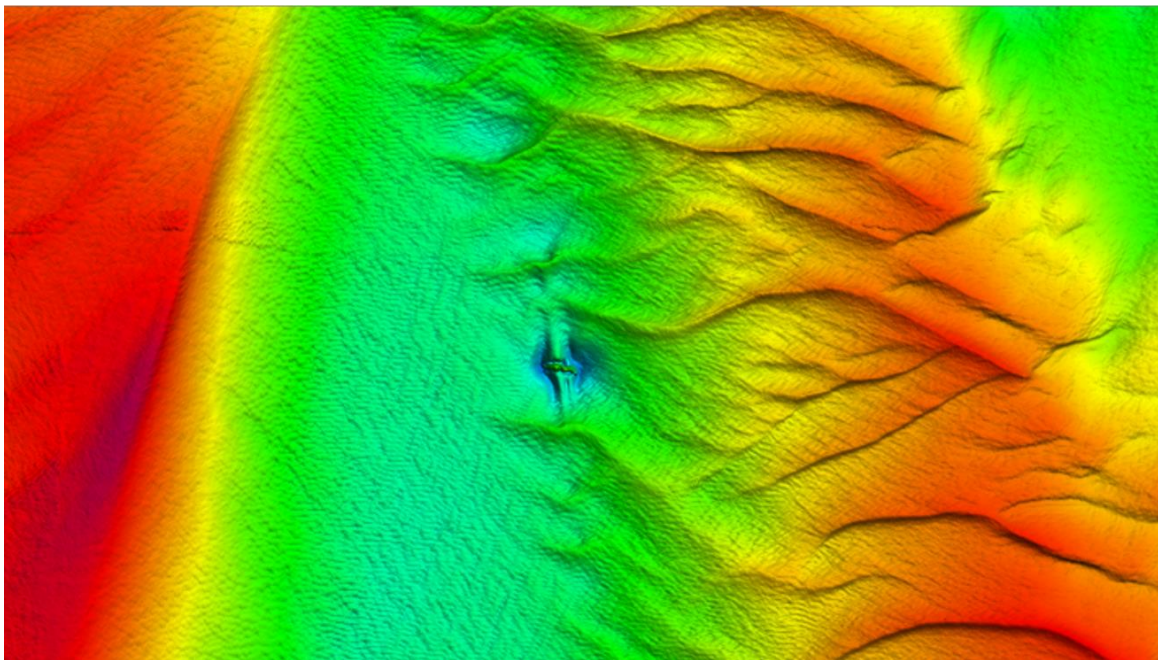
Collaboration & Partnerships

The MCA are continually exploring opportunities to improve co-ordination, co-operation, and collaboration between funders of Government hydrography to further increase efficiencies under the gather once, use many times philosophy, to increase the level of survey and the quality of hydrography and seabed mapping data in UK home waters.

Within the hydrographic community, effective collaborations have been established between public sector organisations, government departments and with research and industry partners. Sharing medium-term survey programmes and working together through partnerships and MoUs has enabled survey capability to be taken forward within and between organisations whilst maximising the leverage of public-funded survey assets and resources.

These agreements enable the MCA to undertake additional high priority surveys on behalf of our partners using MCA contractors via MCA's CHP contractual arrangements. All data gathered through such collaborations are made freely available under the Open Government Licence; are collected using the UK CHP Survey Specification; and submitted under the CHP to additionally support the update of nautical charts and products by the UK Hydrographic Office.

This collaborative approach optimises public expenditure by sharing the costs of procurement of swath bathymetry surveys for areas of mutual interest, avoiding duplication of effort, realise opportunities for survey collaboration and planning, and makes data freely available from the MCA (via the UK Hydrographic Office (UKHO) Bathymetry INSPIRE Data Archive Centre and the British Geological Survey (BGS) Offshore GeoIndex Data Archive).



HI 1823 EA3 Cackle Shoal (Lot 3 Routine Resurvey)

Numerous successful partnerships with the MCA have arisen out of CHAS - most notably, with the National Network of Regional Coastal Monitoring Programmes (RCMPs) through close collaboration with the Channel Coastal Observatory (CCO); and with the Isle of Man Department of Infrastructure. In addition to strengthening relationships between different govt agencies, undertaking targeted surveys in parallel with CHP survey operations realises survey efficiencies, ensures high quality data is collected and validated by UKHO (detailed in a separate agreement between MOD SALMO and UKHO) and maximises public-funded survey assets and resources, providing utmost value for money.

MCA and MOD SALMO

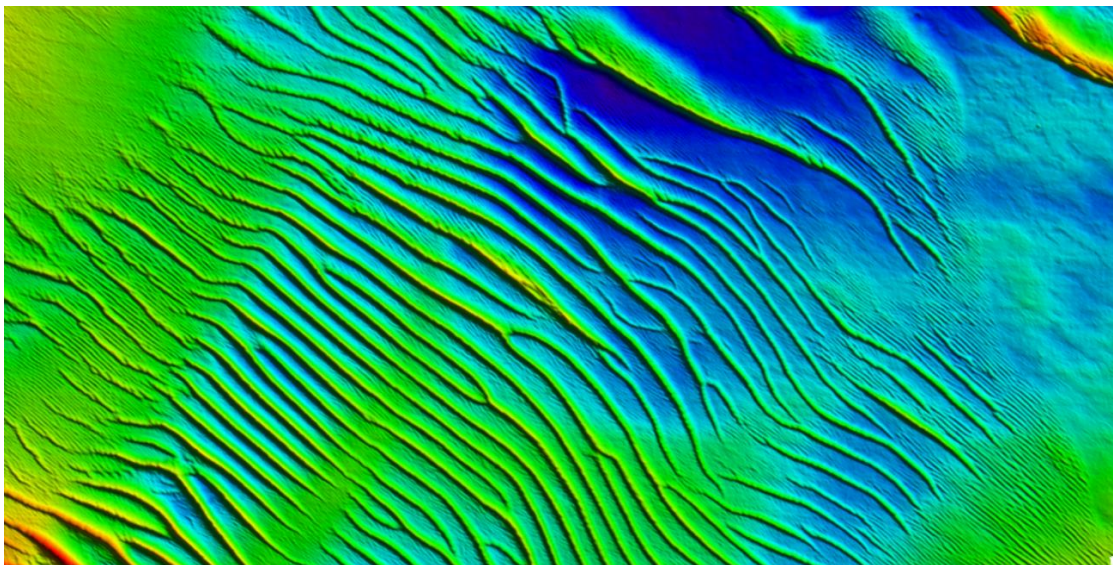
The Ministry of Defence Salvage & Marine Operations (MOD SALMO) team is part of the Ships Operating Centre within Defence Equipment and Support and is the lead across the MOD for the provision of marine salvage and marine emergency response. MOD SALMO also provide a centre of expertise for subsea activities and marine operations including towage, underwater engineering, automated and remotely operated underwater vehicles, wrecks management and mooring. A Memorandum of Understanding (MoU) between MCA and the MOD SALMO team was established, which enables a SALMO-prioritized schedule of wreck investigations to be undertaken through the CHP. The provision of high-resolution data will aid the assessment of the structural integrity of the wrecks and potential pollution/contamination risk that may arise as the wreck structure deteriorates, so that mitigation measures can be considered and implemented.

Discussions with Natural Resources Wales, Marine Directorate of Scottish Government, and the Agri-Food & Biosciences Institute of Northern Ireland are ongoing regarding opportunities for data collection and data sharing that will enhance the collection and quality of seabed mapping data, and the accessibility to existing data.

Through specialist technical fora, such as the Civil Hydrography Working Group, the MCA works closely with Trinity House, the Port of London Authority, ABP Lowestoft, Peel Ports, and other strategic partners to coordinate survey scheduling to maximise survey efforts and mitigate navigation safety risk in areas of highly mobile seabeds and areas with critical underkeel clearances.

MCA and UKHO

The Hydrographic Surveys MoU between the MCA & the UKHO was established October 2023, and enables the MCA and UKHO to work together in partnership where requirements and associated funding has been agreed for survey areas. The MoU optimises public expenditure by sharing the costs of procurement of maritime geospatial data for areas of mutual interest, avoiding duplication of effort, realise opportunities for survey collaboration and planning, and makes data freely available from the MCA, the UKHO Bathymetry INSPIRE Data Archive Centre and the British Geological Survey (BGS) Offshore GeoIndex Data Archive. This MoU specifically enables the MCA to undertake additional survey operations funded by UKHO, using MCA contractors via MCA's UK CHP contractual arrangements. HI 1837 Celtic Deep (survey area of 1,198 km²) was the first tasking to utilise this MoU. Collection took place in the Southwest Approaches (SWAPPs), in low CATZOC areas. Data collection operations were completed within the financial year, as required. Once all the data has passed validation it will be used to support both Defence and SOLAS outputs.



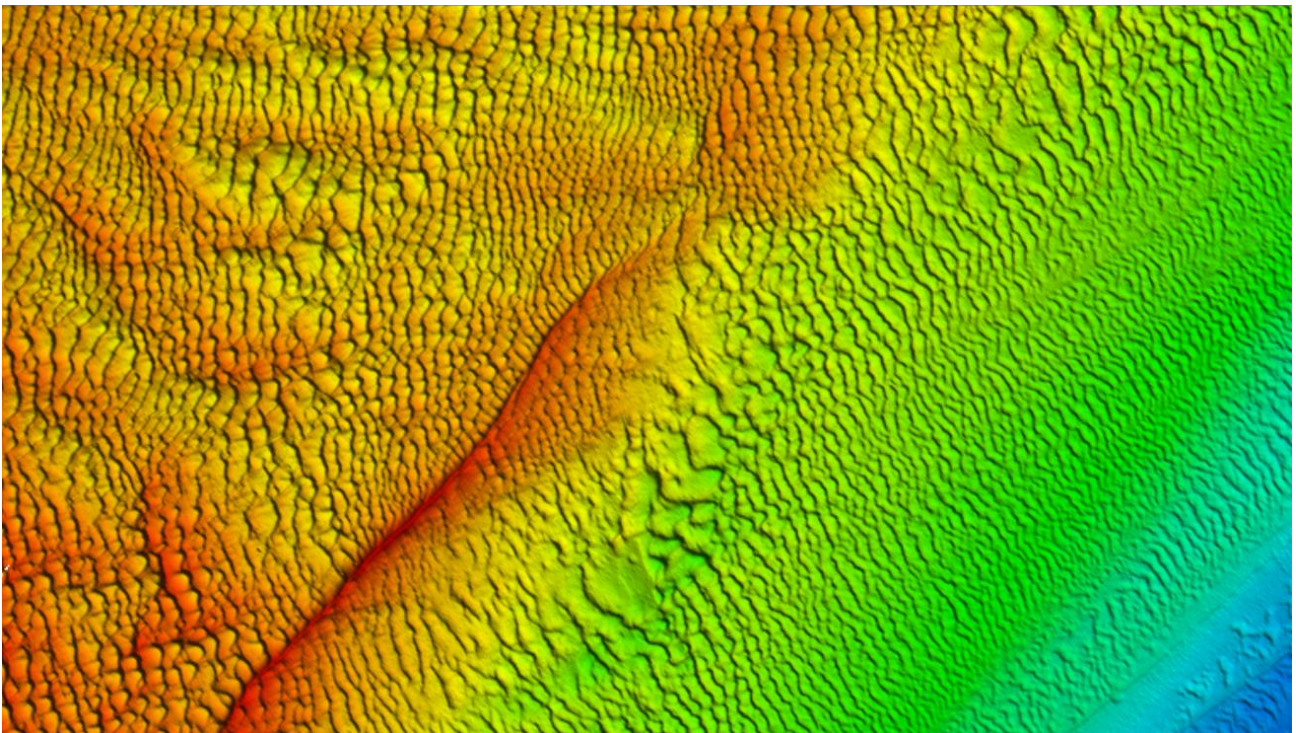
HI 1831 TE3A Sunk Focused (Lot 3 Routine Resurvey)

UK Centre for Seabed Mapping

The UK Government's National Strategy for Maritime Security (published in 2022) sets clear strategic objectives and commitments to create a more secure, prosperous, and sustainable maritime sector. To meet these objectives, the UK Centre for Seabed Mapping was established to support the coordination, collection, management, and access to publicly funded data and to increase the quantity, quality, and availability of seabed mapping data. The UK CSM is hosted and administered by UKHO (ukcsm@UKHO.gov.uk) and currently has 34 member organisations. The CSM Steering Committee and Management Group are supported by the following Working Groups:

- National Survey Coordination – Chair: Andrew Colenutt, MCA
- International Survey Coordination – Chair:
- Data Standards and Specifications – Chair: David Parker, UKHO
- Wreck Mapping - Chair: Antony Firth, Historic England
- Applications of Seabed Mapping Discussion Forum – Chair: Dayton Dove, BGS
- Education and Research being established.

Those organisations that undertake seabed mapping and survey activities share their survey plans, which are made available via the Planning Information Portal (PIP). Sharing medium-term survey programmes and having genuine collaborations is enabling survey capability within and between organisations to be realised and helps to maximise the capacity of public-funded survey assets and resources. For further details on the objectives, membership and priorities of the UK CSM, please visit <https://www.admiralty.co.uk/uk-centre-for-seabed-mapping>



HI 1833 TE19 Fishermans Gat (Lot 3 Routine Resurvey)

How the MCA gathers hydrographic data

Hydrographic survey is the process of gathering a wide variety of data for the purpose of describing the seafloor. To ensure that data is collected to the highest possible quality for navigational charting, the MCA through our UK CHP Survey Specification 2022, specify the following requirements.

Standards

All surveys are conducted to the IHO Order 1a survey standard, as defined by the International Hydrographic Organisation (IHO) publication 'Standards for Hydrographic Surveys, Special Publication S44, Edition 6.1', with the exception of single-beam echosounder (SBES) check lines under the Routine Resurvey Programme.

Technical Requirements

Multibeam Echosounder (MBES)

- Multibeam bathymetry is collected during all CHP surveys.
- The MCA usually require 100% bathymetric coverage in all areas they survey.
- System detection capability is defined by IHO requirements. Contractors are required to detect objects whose size is greater than a cube measuring 2m³, in water depths of up to 40m, and a cube with sides equal to 10% of depth in deeper waters.
- A minimum of 9 soundings per minimum detectable object are required.
- Sound velocity measurements are routinely taken throughout the survey to position the soundings correctly.
- Contractors are often required to conduct tidal-stream observations at specific locations.

Quality Assurance

Data Quality Control

- In addition to QC procedures employed by CHP survey contractors, technical personnel from both the MCA and UKHO routinely visit contractors' vessels throughout survey operations to verify data quality.
- Prior to final survey data being accepted from contractors, it passes through a rigorous quality assurance process at the UKHO, where checks are made for items such as data density, inter-line consistency, geodetic parameters, tidal observations *etc.*
- Contractors are asked to provide error budgets prior to and after every survey so that the contribution of individual error sources are tightly defined. This ensures rigorous quality control of the final survey dataset.

Additional Measurements

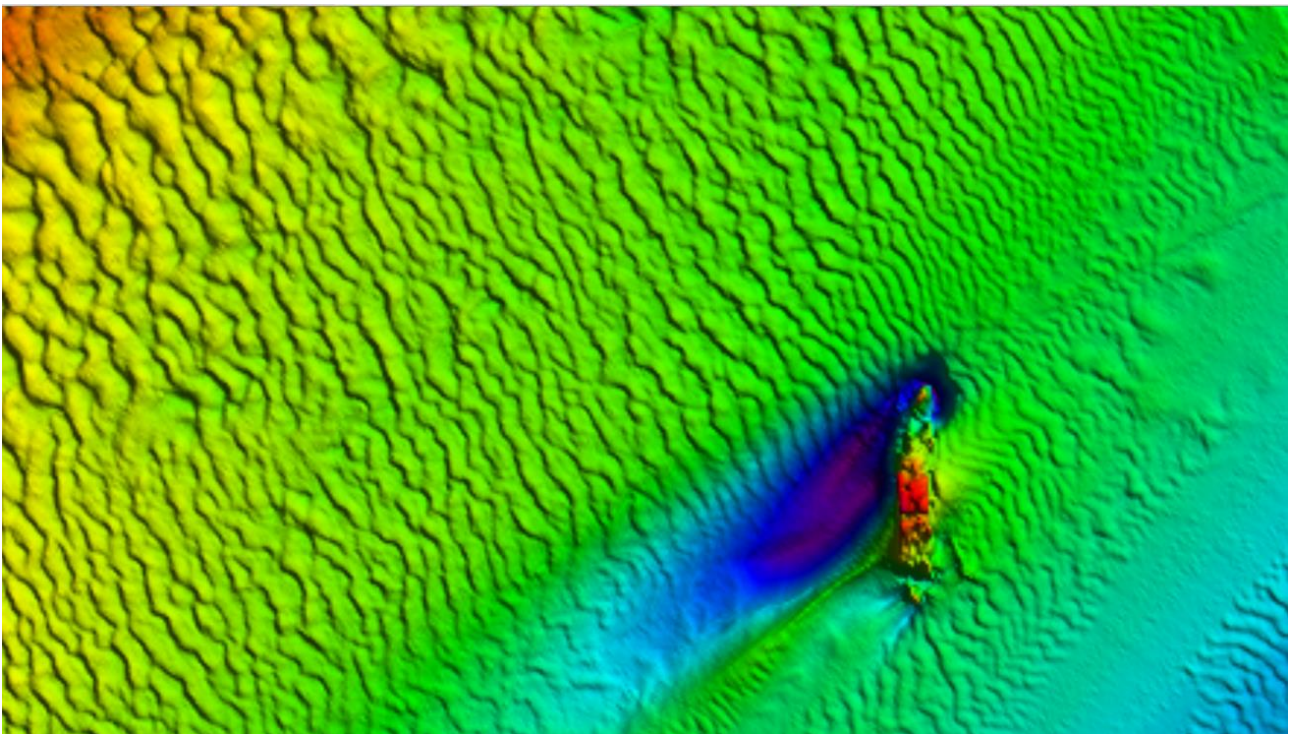
- Rigorous tidal reduction is required on all CHP surveys.
- Depths are reduced to Chart Datum (CD).
- Seabed grab samples are typically taken at 5km intervals to ground-truth multibeam backscatter observations.
- MBES water column data is collected over all found wrecks to support an assessment of their condition and ensure shoalest depth is found.

Propose a Survey

Should you know or be aware of any areas of UK seabed that require update to the nautical charts and publications that cover them, please let us know. The MCA assess CHP survey areas using a contemporary risk-based methodology, but we are keen to receive any information that can aid us in our responsibilities to the mariner and the safety of life at sea. E-mail your suggestions for hydrographic survey to: hydrography@mca.gov.uk.

Typical indications of an area requiring re-survey are:

- Old underlying survey data (check using the "Source Data Diagram" on the latest chart).
- A change in traffic patterns (e.g., increases in cruise ship visits).
- An accident occurring due to inaccurate or incomplete survey data; or
- Changes to the seabed due to sandwave movement / channel migration.
- Offshore wind farm cumulative impacts on ship routing within the UK EEZ and abutting with neighbouring Member States, search and rescue planning, cross-border issues, future marine developments, etc.



HI 1833 TE19 Fishermans Gat (Lot 3 Routine Resurvey)

Maritime Autonomy

Maritime Autonomy is a fast-growing area of the maritime industry, that is already being used for hydrographic survey. It focuses on Maritime Autonomous Surface Ships (MASS) that operate at different degrees of autonomy. There is not yet international consensus on these degrees, however they include vessels that are remotely operated with a human in the loop, either from a shore-based location or another vessel, as well as vessels that are fully autonomous and operated independent of human intervention. It is anticipated that these vessels can be divided into the following degrees of autonomy: 1) Remotely operated with seafarers onboard; 2) Remotely operated without seafarers onboard; and 3) Fully autonomous, with or without seafarers onboard.

The remote and fully autonomous elements of these vessels are not restricted to just the navigation of a vessel but can be applied to any function of a ship's operation.

Vessel Developments

Currently, MASS operating in UK waters are generally under 24m, remotely operated and unmanned, although some are also capable of conventional manned operation. In commercial operations these are predominately being used for survey or marine monitoring. The military, particularly the Royal Navy, are also developing and operating vessels for mine hunting and target practice. Some of these vessels incorporate more recent advances in autonomous technology, such as automated collision avoidance or computer vision to identify hazards to augment remote operator situational awareness. The development and diversification of MASS into larger sizes and varied uses is happening as confidence and acceptance of the technology grows.

Regulatory Developments

Future of Transport

A regulatory review is taking place across Department of Transport on the future of transport, and this includes maritime autonomy and remote operation of vessels. The work is identifying changes that are required in primary legislation to allow the safe and environmentally sound operation of MASS in the UK, or for UK and British MASS. A consultation took place in November 2021 requesting feedback on proposals to introduce definitions, such as MASS Master and Remote Operator, and powers to create regulations for the safe operation of MASS, Remote Operation Centres (ROCs), Software used for autonomy and remote operations and MASS operation in Ports and Harbours. The Government's response to the consultation is due to be published soon.

Workboat Code

In December 2023 Workboat Code Edition 3, and The Merchant Shipping (Small Workboats and Pilot Boats) Regulations 2023 entered into force. Workboat Code Edition 3 included two new Annexes – Annex 1 Alternative Fuels and Propulsion Systems, which set out requirements for battery-hybrid and battery-electric propulsion systems; and Annex 2 Remotely Operated Unmanned Vessels. Annex 2 sets out all additional requirements for a Remotely Operated Unmanned Vessel of <24m Load Line Length operating as a workboat. Remotely Operated Unmanned Vessels are defined as vessels with no persons on board, that are operated from a location remote to the vessel. Remotely Operated Unmanned Vessels will need to meet the requirements set out in Annex 2 in addition to the relevant sections of the main body of the Code.

Vessels which do not meet the definition of an Remotely Operated Unmanned Vessel, as set out in the Code; such as those with autonomous capability can be considered on a case-by-case basis via the MGN 664(Amd.1) certification process for vessels using innovative technology..

MASSPeople

The MCA, as founding members of MASSPeople, have agreed to contribute to the early creation of internationally recognised industry standards for competencies and training requirements for operators and other persons involved in the operation of MASS. The International Working Group (IWG) intends to present the standards developed by it to the International Maritime Organization (the "IMO") for incorporation as a new chapter to the Standards of Training, Certification & Watchkeeping (STCW), thereby:

- (i) facilitating traditional seafarers to upskill and become certified to operate MASS through an endorsement; and
- (ii) providing new entrants to the industry the opportunity to gain relevant knowledge and become certified to operate MASS.

As part of this project the MCA has established a National Correspondence Group to bring together industry, academics and other stakeholders involved in Autonomy and MASS to support this IWG work. The IWG is now well established and are currently preparing a stakeholder/survey questionnaire for dissemination amongst each international member state's national stakeholders to understand key areas of training and operational requirement. The result of this questionnaire will then be used to create standards of training and competencies for operators and other personnel involved in MASS operation.

International Maritime Organization (IMO)

The IMO undertook a regulatory scoping exercise (2018 – 2021) to identify barriers and gaps that could prevent the operation of MASS internationally. This has been completed, identifying the areas that need addressing in the international instruments such as SOLAS to allow the safe and environmentally sound operation of these vessels. Whilst the environmental conventions still require review, the maritime safety committee has set out a roadmap to update its instruments, such as developing a MASS Code. To facilitate its objectives, the Committee established a joint MASS Working Group to develop a non-mandatory goal-based MASS Code, including its scope, framework and provisions, with a view for it to be adopted and implemented in 2025. This work will then be used to develop and finalise the draft mandatory MASS Code. The UK has played a leading role in the process and uses its experience working with the MASS industry, in areas such as hydrography, to influence the development of these international instruments.

Contact Details

MCA's maritime autonomy experts are based across the Agency in relevant departments, the following individuals will be able to help in the areas listed.

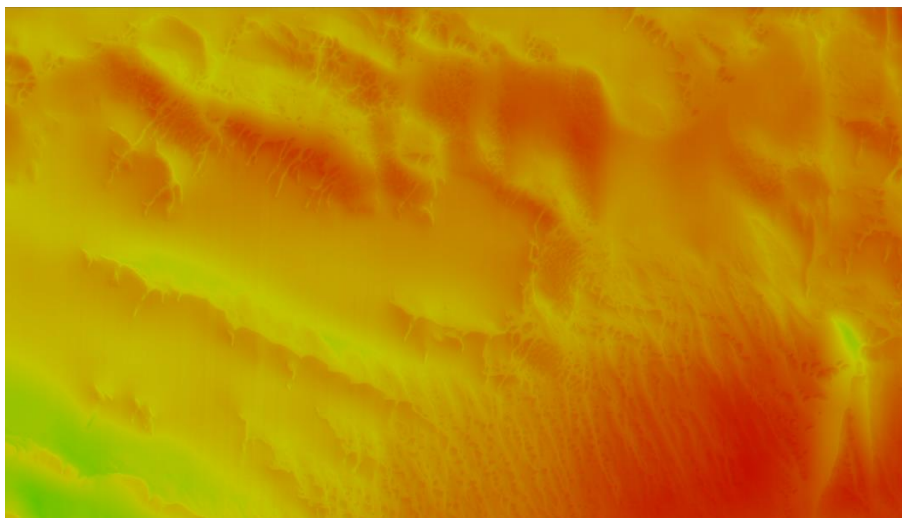
Katrina.Kemp@mcga.gov.uk	Maritime Autonomy Policy Lead	IMO autonomy UK lead, Future of Transport Maritime autonomy policy
James.omahony@mcga.gov.uk	Autonomous Vessel Training Lead	MASS training and development
Jeremy.Jenkins@mcga.gov.uk	Smart Maritime Services Lead	MASS research projects, trials and operations
Esme.Flegg@mcga.gov.uk	Innovative Technologies Policy Lead - Codes	Maritime autonomy policy (<24m in load line length). Alternative fuels and propulsion systems (<24m in load line length)
Sam.Hodder@mcga.gov.uk	Ship Standards Policy Lead	Maritime autonomy policy

Sharing Data with the MCA

The MCA are always happy to give help and advice on hydrographic data gathering requirements to increase the usefulness of hydrographic survey data. If you are considering performing a hydrographic survey and are willing to share your data with us, we can pass it on to the UKHO for compiling new or updating nautical charts to help improve safety for mariners. Your survey does not need to be carried out to full charting standards to be of use. Even without a full search for dangers, a modern survey can improve on our knowledge of the seabed. There will be no legal liability on you for the way that the data is used. However, data which fully complies with all aspects of IHO Order 1a would be ideal.

Ideally bathymetry data would be rendered and delivered in digital form, with:

- **Data in one of the following formats: CARIS Project Directory or Generic Sensor Format.**
 - **Spurious data cleaned from the final, delivered, dataset with rejected soundings included, but flagged as deleted.**
 - **Details of the method used for data-cleaning.**
 - **Digital data as full density (i.e. prior to any gridding or binning being applied), though if gridded datasets have been created then please include these too.**
 - **The soundings reduced using observed tides (not predicted tides from Tide Tables).**
 - **Depths referenced to Chart Datum for the area.**
 - **How tides were measured, how the tide pole or tide gauge was levelled and how depths were reduced to chart datum.**
- A report of the survey that describes how the data was gathered and processed would be of use, especially if it includes:
- **A list of the equipment and software used;**
 - **How positioning equipment was set up, calibrated and used;**
 - **How the echo-sounder transducer was set up and levelled, together with all sensor offsets;**
 - **Details of the horizontal datum to which the positions are referred (or the grid, if appropriate);**



HI 1716 Dogger Bight North (Lot 2 Medium Water)

Offshore Wind Energy & Shipping Safety

The MCA promotes the safety of navigation and UK search and rescue obligations for various projects such as offshore renewables, cables/pipelines, aquaculture, oil and gas, carbon capture storage and nuclear. The MCA is involved in various Marine Spatial Planning groups across the UK, and there is an ongoing need to ensure that navigation safety and search and rescue obligations are properly considered by all government departments.

The MCA represents DfT in the Ministerial Delivery Group on Marine Spatial Prioritisation to balance, and where necessary, prioritise demands for sea space. Competition for sea space between users is intensifying as the UK progresses ambitious targets set out in the recent Energy Security Strategy for achieving Net Zero by 2050, alongside environmental and biodiversity objectives for the UK EEZ. While there is a need to protect the marine environment, the safety of navigation encompassing important shipping routes and safe access to ports/harbours remains critical to the UK economy and must be protected.

With the increased growth of offshore windfarm developments in the North Sea, the countries around the North Sea need and want to co-operate on where wind farms are sited, especially those proposed near the borders of the EEZ.

Strengthening the existing relationships between the various Member States has resulted in greater focus to:

- better co-ordinate planning and development of offshore and onshore electricity grid expansion to facilitate the expansion of offshore wind;
- collaborate on maritime spatial planning;
- develop an integrated approach to assessing cumulative impacts on navigation; and
- comment on proposed policies on surveying in and around windfarms, for navigation safety and meeting SOLAS obligations.

These areas of mutual interest will continue to be discussed and advanced at the North Sea Hydrographic Commission Resurvey Working Group and the forum for Offshore Wind Energy and Shipping Safety in the North Sea.

Space Launch Activities

UK Gov has a vision for the UK to be at the global forefront of small satellite launch and emerging space transportation markets. With potentially seven spaceports in the UK, frequent rockets launches are expected in the future which will likely impact the marine environment being an island nation. The MCA considers each launch application on a case-by-case basis. We expect each launch application to be supported by a Navigation Risk Assessment (NRA), working in line with the proposed risk mitigation measures agreed through UK Safety of Navigation Committee.

The Marine Licensing and Consenting Team is involved in both the marine licensing and the Space Industry licensing arrangements for space launch activities from the UK and has provided guidance, in consultation with the UK Hydrographic Office, to help mitigate the risk to shipping and navigation. We aim to ensure the risk is within the parameters of As Low As Reasonably Practicable (ALARP). This includes the assessment of any changes to the seabed topography because of rocket debris, which may cause a danger, or obstruction/reduces vessel under keel clearance.

Guidelines for Offshore Renewable Energy Developers

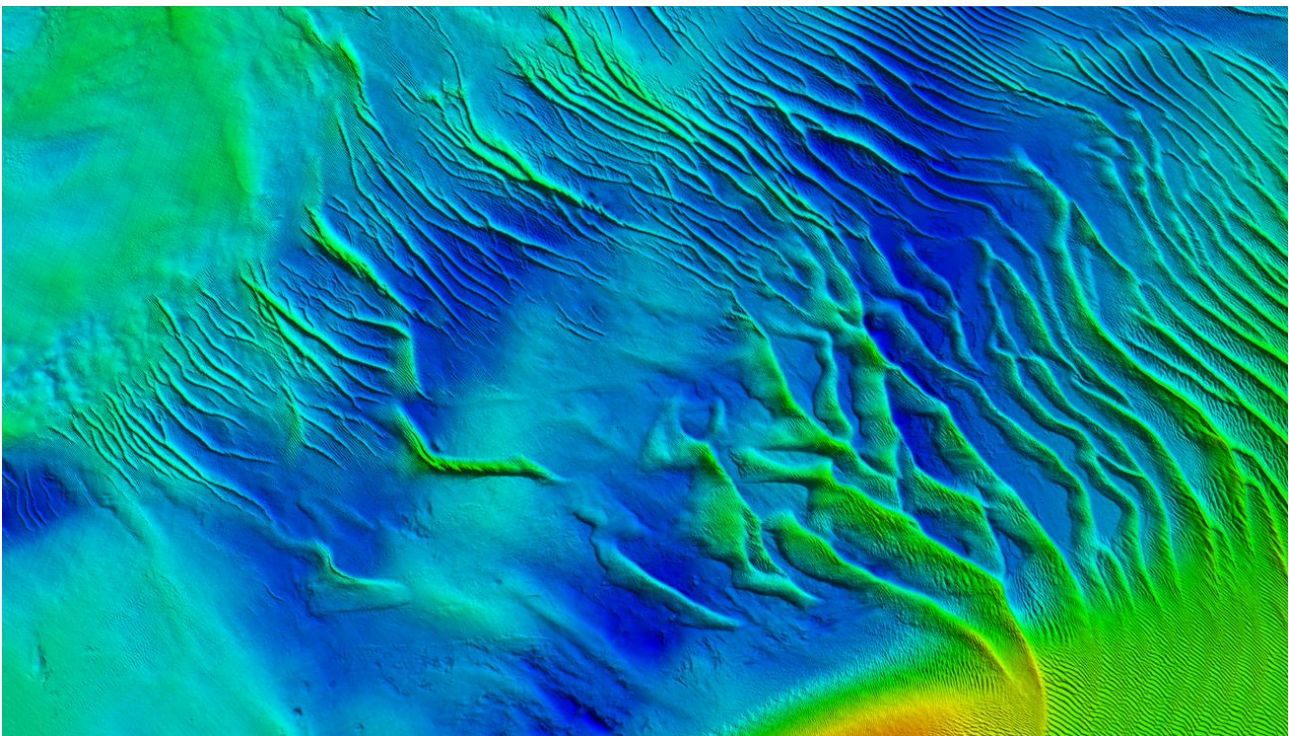
The MCA has issued guidelines which are intended to aid developers when submitting development consent applications that impact upon hydrography. These guidelines should be read in conjunction with Marine Guidance Note (MGN) 654, which is available on the MCA pages on gov.uk :-

<https://www.gov.uk/guidance/offshore-renewable-energy-installations-impact-on-shipping>

The MGN 654 guidance note highlights issues that need to be taken into consideration when assessing the impact on navigational safety and emergency response (search and rescue,

salvage and towing, and counter pollution) caused by offshore renewable energy installation developments. It applies to proposals in United Kingdom internal waters, Territorial Sea, and Exclusive Economic Zone.

All hydrographic surveys should provide full seafloor coverage that meets the requirements of the IHO Order 1a survey standard. Particular attention should be given to horizontal and vertical sounding accuracy, together with target detection requirements. It is requested that all data and reports are passed to the MCA for forwarding to the UKHO for the update of the UK's nautical charts and publications.



HI 1832 TE5 Long Sand Head (Lot 3 Routine Resurvey)

MGN 654: Hydrography

To establish a baseline, confirm the safe navigable depth, monitor seabed mobility and to identify underwater hazards, detailed and accurate hydrographic surveys are required of the development at the following stages:

- Pre-construction: the proposed generating assets area shall be undertaken as part of the licence and/or consent application. The survey shall include all proposed cable route(s).
- Post-construction: Cable route(s).
- Post-decommissioning of all or part of the development: the installed generating assets area and cable route(s).

The development may result in an alteration to maritime traffic patterns as vessels seek alternative passage around the installed generating assets area. Where this is the case, it may be considered necessary that a hydrographic survey of these alternate passages and their immediate environs be undertaken. MCA can provide guidance.

Where shipping corridors are formed within or adjacent to the consented generating assets area, the requirement for hydrographic surveys shall be referred to the MCA and undertaken on a case-by-case basis. All hydrographic surveys listed above should fulfil the requirements of the MCA's 'Hydrography Guidelines for Offshore Renewable Energy Developers'.

Contact Details

navigationsafety@mcga.gov.uk

Helen.Croxson@mcga.gov.uk

Nick.Salter@mcga.gov.uk

Marine Licensing & Space Launch Lead

Offshore Renewables Lead

On completion of each survey, the bathymetric data and associated report of survey should be delivered to the MCA.

The MCA is responsible for collecting and supplying data to the UKHO to update nautical charts and publications for the purposes of navigation safety.

The commercial sensitivity of your data will always be respected.

Developers are reminded of the requirement to report significant changes in depths from charted depths that become a navigation hazard to UKHO so Navigational Warnings and Notice to Mariners can be issued, if necessary.

Please send your data and reports to:

Head of Hydrography & Meteorology

UK Technical Services Navigation

Maritime & Coastguard Agency

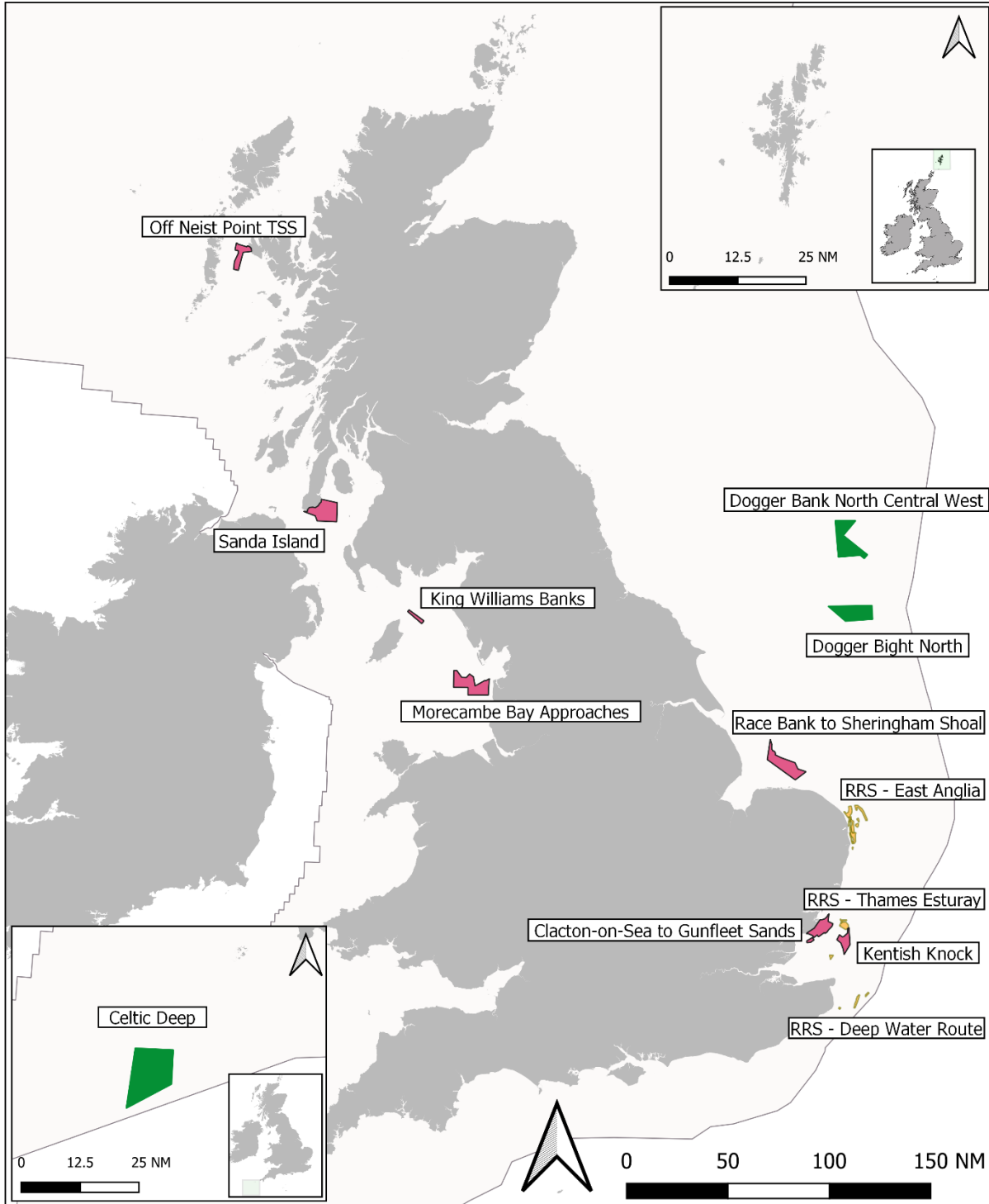
Bay 2/25, Spring Place



105 Commercial Road

Southampton, SO15 1EG

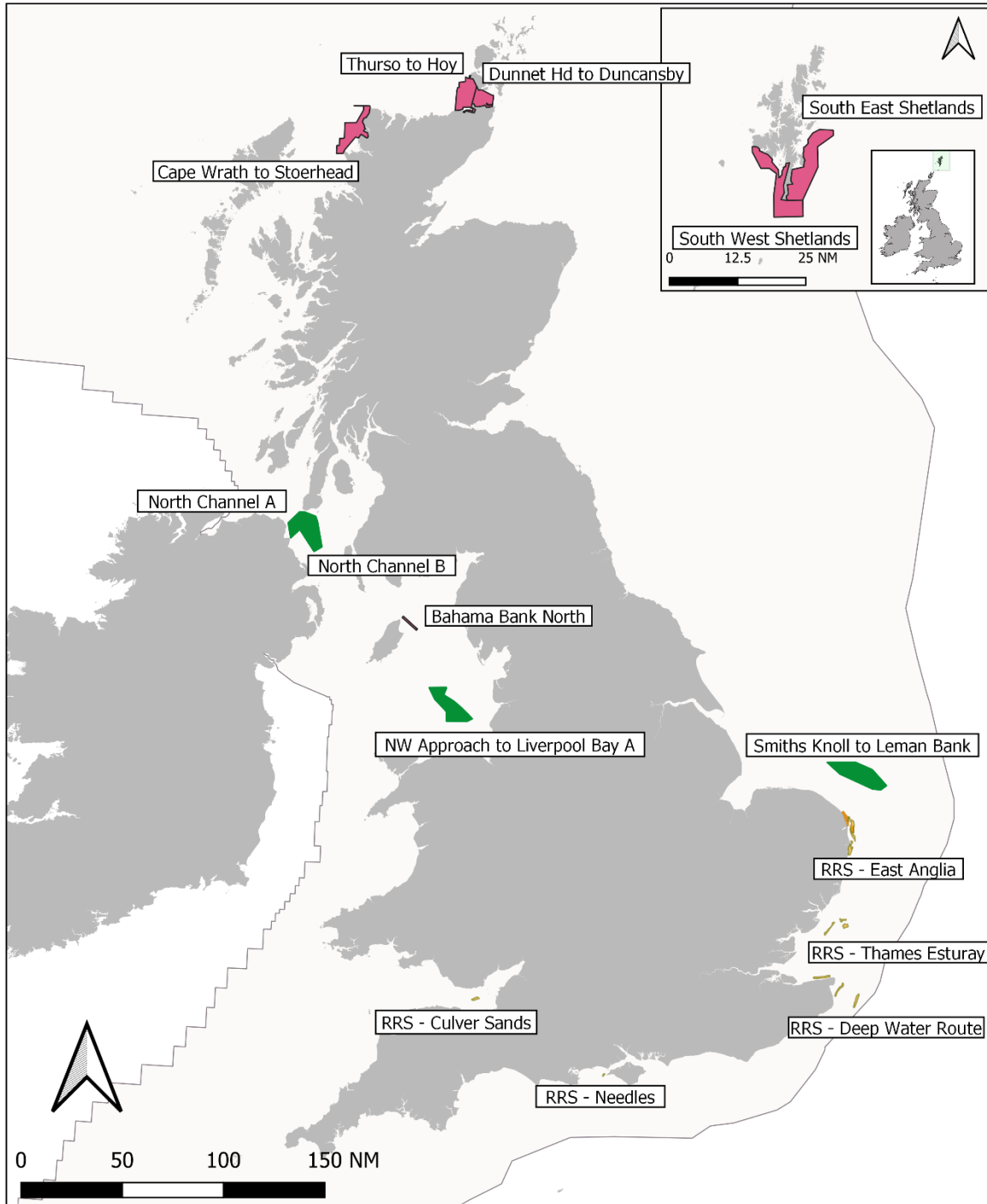
If you require any further assistance with the above guidelines, please contact the MCA at: navigationsafety@mcga.gov.uk

Annex 1: CHP Surveys 2023/24



CIVIL HYDROGRAPHY PROGRAMME COMPLETED SURVEYS 2023-2024		 Maritime & Coastguard Agency
	LEGEND: <ul style="list-style-type: none"> ■ CHP 2023-24 SHALLOW WATER AREAS ■ CHP 2023-24 MEDIUM WATER AREAS ■ CHP 2023-24 RRS AREAS EEZ/CHP AREA OF RESPONSIBILITY 	
NOT TO BE USED FOR NAVIGATION © Crown Copyright 2024. All rights reserved. Graphic may only reproduced in full.		DRAWING Projection: WGS1984 World Mercator Originator: AM Date: 20 May 2024

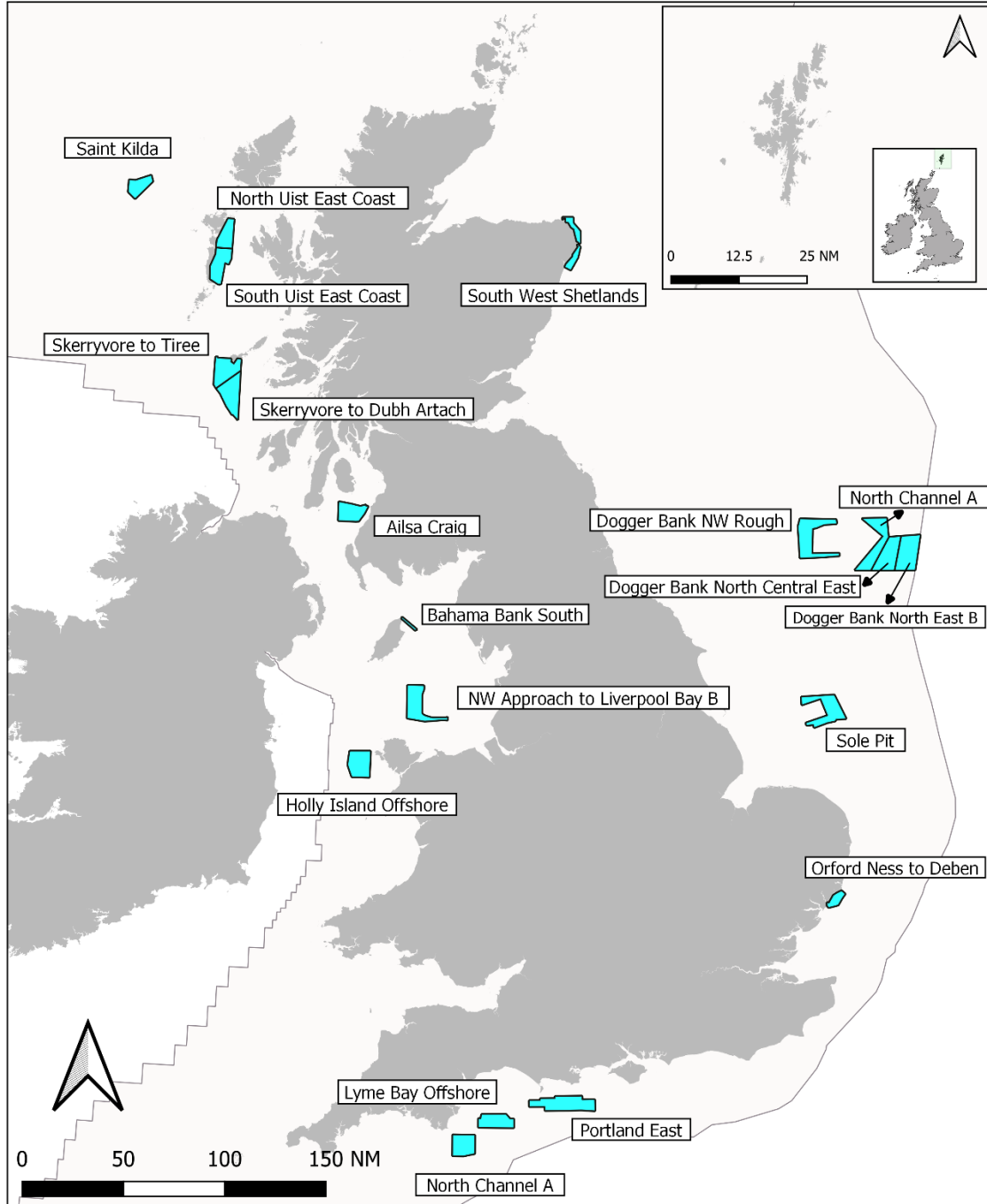
Annex 2: CHP Surveys 2024/25



	CIVIL HYDROGRAPHY PROGRAMME PLANNED SURVEYS 2024-2025	
	<p>LEGEND:</p> <ul style="list-style-type: none"> ■ CHP 2024-25 SHALLOW WATER AREAS ■ CHP 2024-25 MEDIUM WATER AREAS ■ CHP 2024-25 RRS AREAS EEZ/CHP AREA OF RESPONSIBILITY 	
<p>NOT TO BE USED FOR NAVIGATION</p> <p>© Crown Copyright 2024. All rights reserved. Graphic may only reproduced in full.</p>		<p>DRAWING: Projection: WGS1984 World Mercator Originator: AM Date: 20 May 2024</p>

Annex 3: Indicative CHP Surveys 2025/26

High priority areas under consideration for either taking forward in subsequent years, or may be brought forward to the current year, depending on available MCA budget, collaboration opportunities and survey capacity.



	CIVIL HYDROGRAPHY PROGRAMME INDICATIVE SURVEYS 2025+		
	LEGEND: ■ CHP 2025+ INDICATIVE SURVEY AREAS EEZ/CHP AREA OF RESPONSIBILITY		
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Annex 4: UKHO Chart Updates

CHP HI	ENC Published		Chart Published	
	Name	Date	Name	Date
HI1836	GB401828	18/04/2024	1828, 323, 1892	<i>planned 2024</i>
HI1835	GB400323	25/04/2024	323	<i>planned 2024</i>
HI1834	GB4H0004	22/02/2024	323, 1892	<i>planned 2024</i>
HI1833	GB401606, GB301607	02/05/2024	1606, 1607	<i>planned 2024</i>
HI1832	GB4H0001, GB40302B, GB40302C	28/12/2023	2692	28/03/2024
HI1831	GB4H0002, GB302052	28/11/2023	2692	28/03/2024
HI1829	GB40304B	08/02/2024	1535	23/05/2024
HI1828	GB40304A, GB40304B	07/03/2024	1534, 1535	23/05/2024
HI1827	GB40304A, GB40304B	01/02/2024, 08/02/2024	1534, 1535	23/05/2024
HI1826	GB40304A	07/03/2024	1534, 1535	23/05/2024
HI1825	GB40304A	07/03/2024	1534	23/05/2024
HI1824	GB40304A	01/02/2024	1534	23/05/2024
HI1823	GB40304A	07/03/2024	1534	23/05/2024
HI1822	GB301543, GB300106	22/11/2023	106, 1543	22/02/24, 30/05/24
HI1821	GB40304A, GB301543, GB300106	01/02/2024	106, 1534, 1543	22/02/24, 30/05/24
HI1797	GB300266	25/04/2024	266	<i>planned 2024</i>
HI1769	GB401828	27/07/2023	1828	21/12/2023
HI1765	GB40302C, GB301975	23/03/2023	2692, 1875	13/07/2023
HI1762	GB40304B	23/03/2023	1535	20/07/2023
HI1761	GB40304A	20/04/2023	1534, 1535	20/07/2023
HI1760	GB40304A	30/03/2023	1534	20/07/2023
HI1728	GB300108	21/02/2022	108	22/02/2024
HI1717	GB300266	13/04/2023	266	07/09/2023
HI1716	GB300266	25/04/2024	266	<i>planned 2024</i>
HI1715	GB300266	13/04/2023	266	07/09/2023
HI1711	GB40384A, GB300160, GB300175	30/08/2023	111, 160	25/04/2024
HI1679	GB50202K, GB40202J, GB301613	16/03/2023	30, 1613, 1900	16/11/2023
HI1673	GB300106, GB300108	11/05/2023	106, 108	22/02/2024
HI1587	GB40348A, GB300121	09/02/2023	121, 1882	08/06/2023
HI1680	GB302126	24/03/2023	2126	21/09/2023
HI1511	GB302798	17/04/2024	2798	25/04/2024
HI1507	GB301977	13/06/2023	1977	13/07/2023
HI1729	GB301320	25/04/2023	1320	<i>planned 2024</i>
HI1709	GB301942	03/07/2023	2162	07/12/2023
HI1710	GB300115	03/07/2023	1942	<i>planned 2024</i>
HI1718	GB302199	18/11/2022	2199	02/05/2024
HI1732	GB300210	16/05/2023	210	03/08/2023
HI1706	GB301411	18/05/2023	1411	<i>planned</i>
HI1707	GB301977	13/06/2023	1977	13/07/2023
HI1708	GB301977	13/06/2023	1977	13/07/2023
HI1723	GB301165	13/10/2023	1165	<i>planned 2024</i>
HI1733	GB3000210	19/10/2023	213	<i>planned 2024</i>
HI1770	GB52345A	09/10/2023	2345	<i>planned</i>

Contacts

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SO15 1EG

Tel: 020 3817 2000
Web: www.gov.uk/mca

Hydrography and Meteorology Team

Andrew Colenutt, Head of Hydrography & Meteorology

Aris Manou, Hydrography Technical Lead

Rebecca De Bono, Hydrography Programme Co-ordinator

Matt Sheldon, Maritime Safety Information Lead

E-mail: hydrography@mcga.gov.uk
marine_safety_information@mcga.gov.uk

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