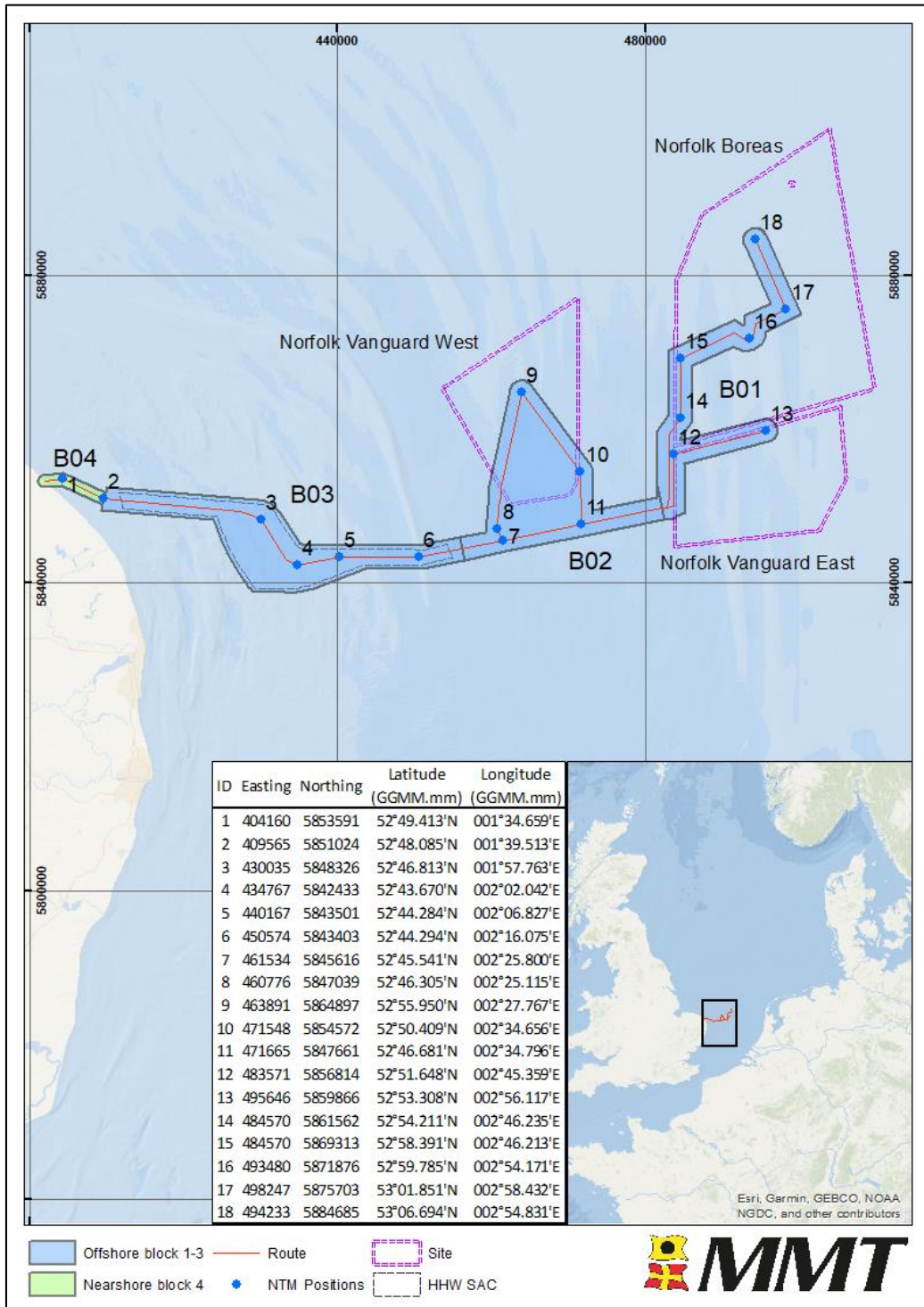


**Vattenfall – Norfolk Vanguard & Norfolk Boreas Offshore Windfarms
Offshore and Nearshore Geophysical Surveys 2020
Rev 05 - Issued: 2020-09-03**

MMT have been contracted by Vattenfall Windpower Ltd to perform survey for the planned transmission assets linking the Norfolk Vanguard (NV) and Norfolk Boreas (NB) windfarm areas to shore. Mariners are advised that the survey is currently ongoing using survey vessels and equipment within the blocks along the red **survey lines** and **within the dashed HHW SAC area** (within block B03) seen in the figure below. Coordinates can be found at the end of this document. The survey is carried out by MMT (offshore, blocks B01, B02 and B03) and Deep BV (sub-contractor, nearshore block B04) on behalf of Vattenfall Windpower Ltd.



Project Description and Survey tasks

During this survey the vessels are using underwater and towed survey equipment and may have restricted ability to manoeuvre. **Other vessels are requested to pass at a safe speed and distance (at least 500 m).**

The vessels will monitor VHF Channel 16 at all times.

Geophysical survey is currently being performed offshore along the export cable routes and at Offshore Sub Stations (OSS) at the end of these routes. Equipment used: singlebeam echosounder (SBES), multibeam echosounder (MBES), side scan sonar (SSS), magnetometer (MAG) and sub bottom profiler (SBP). Targeted sediment sampling to ground truth interpretations are also performed as required. The entire HHW SAC area is also being surveyed with SBES, MBES and SSS, the result will be used to guide the upcoming environmental survey.

Environmental survey to map the presence of Sabellaria in the Haisborough, Hammond and Winterton Special Area of Conservation (HHW SAC, see figure above) is also planned but has not started yet. Based on the result of the geophysical survey in HHW SAC, Drop Down Video “sampling” at specific locations will be performed as well as sediment sampling.

Timeline

Offshore geophysical survey works commenced on the 10th of June using M/V Relume and is scheduled to end on **4th of October** (subject to change, ultimately dependent on the weather situation).

Nearshore geophysical survey (within Block 04) commenced on the 3rd of July and **ended on 6th of August**. It was conducted by sub-contractors BV Deep.

Environmental survey is scheduled to start on **23rd of September** using M/V Cecilia and is scheduled to end on **10th of October** (subject to change, ultimately dependent on the weather situation).

Fisheries Liaison

A shore based Fisheries Liaison Officer (FLO) will be available during the course of the project:

Jonathan Keer
Brown & May Marine Limited
jonathan@brownmay.com
T: 07850 604851
DD: 01379 872143

Vessels

Offshore geophysical survey is carried out using survey vessel M/V Relume. Environmental survey (DDV and sediment sampling) will be carried out using M/V Cecilia.

The vessels will monitor VHF Channel 16 at all times.

See vessel images and information below.



Vessel: Relume
 Owner: International Foundation for Aids to Navigation (IFAN)
 Call Sign: C6TR4
 IMO: 9280720.
 GSM: +44 (0) 2037691766
 Email: om-relume@mmt.se;
relume_master@relume-mmsl.com



Vessel: Cecilia
 Owner: Northern Survey
 Call Sign: OZ2157
 IMO: 7381635
 GSM: +45 (0) 82136401
 Email: om-cecilia@mmt.se
cecilia@northern-survey.com

Contact Details

Further enquiries should be addressed to the following people in the following order:

1. Stina Palmeby (MMT Project Manager), T: +46 708 14 37 01, Stina.palmeby@mmt.se
2. Kalle Flink (MMT Operations), T: +46 708 11 28 43, kalle.flink@mmt.se
3. Joram Bootsma (DeepBV Project Manager), T: +31 613 167 383, JBO@deepbv.nl

SURVEY LINE COORDINATES

ID	Easting	Northing	Latitude (GGMM.mm)	Longitude (GGMM.mm)
1	404160	5853591	52°49.413'N	001°34.659'E
2	409565	5851024	52°48.085'N	001°39.513'E
3	430035	5848326	52°46.813'N	001°57.763'E
4	434767	5842433	52°43.670'N	002°02.042'E
5	440167	5843501	52°44.284'N	002°06.827'E
6	450574	5843403	52°44.294'N	002°16.075'E
7	461534	5845616	52°45.541'N	002°25.800'E
8	460776	5847039	52°46.305'N	002°25.115'E
9	463891	5864897	52°55.950'N	002°27.767'E
10	471548	5854572	52°50.409'N	002°34.656'E
11	471665	5847661	52°46.681'N	002°34.796'E
12	483571	5856814	52°51.648'N	002°45.359'E
13	495646	5859866	52°53.308'N	002°56.117'E
14	484570	5861562	52°54.211'N	002°46.235'E
15	484570	5869313	52°58.391'N	002°46.213'E
16	493480	5871876	52°59.785'N	002°54.171'E
17	498247	5875703	53°01.851'N	002°58.432'E
18	494233	5884685	53°06.694'N	002°54.831'E