CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE
LOWESTOFT LABORATORY, SUFFOLK, NR33 0HT

2016 RESEARCH VESSEL PROGRAMME

PROGRAMME: **RV *Cefas Endeavour***
Survey: **C End 25 - 2016.**

Contract Code: C5785AL

STAFF:
Marc Whybrow (SIC)
Sue Ware (2IC)
Bill Meadows (Technical Lead)
Simeon Archer (Shift Lead)
Peter Knight
Samantha Barnett
Alison Pettafor
Ben Wood
Alfie Howat
Elisa Capuzzo
Haydon Close

NB. Staff requiring inductions are highlighted in yellow

DURATION: **4 Days**

Sailing dates: Monday 5th December to Thursday 8th December, sailing from Lowestoft and docking in Lowestoft.

LOCATION: **Happisburgh and the Monks, Silver Pit & Off Lowestoft.**

Primary Aims:

- 100% multibeam acoustic coverage of the site Happisburgh & The Monks (Figure 1),
- Underwater Fibre Camera tests:
    - Setting for video capture
    - Stills camera aberration
    - Forward looking camera
    - Aris acoustic Camera mounted on the fibre camera system
- Sidescan:
    - Responder beacon test
    - Deployment and recovery training
- Multibeam:
    - Testing of new Seapathpath unit
- Training
    - Opportunity for bespoke training/upskilling technical staff

Secondary Aims:

- Acoustic synchronisation unit between the multibeam, EK60 & EA600 systems
- New Seabird Rosette system training
- Survey Data backup – Create/update documentation
- Water sample at West Gabbard SmartBuoy site
- Zooplankton Sample at the West Gabbard SmartBouy site

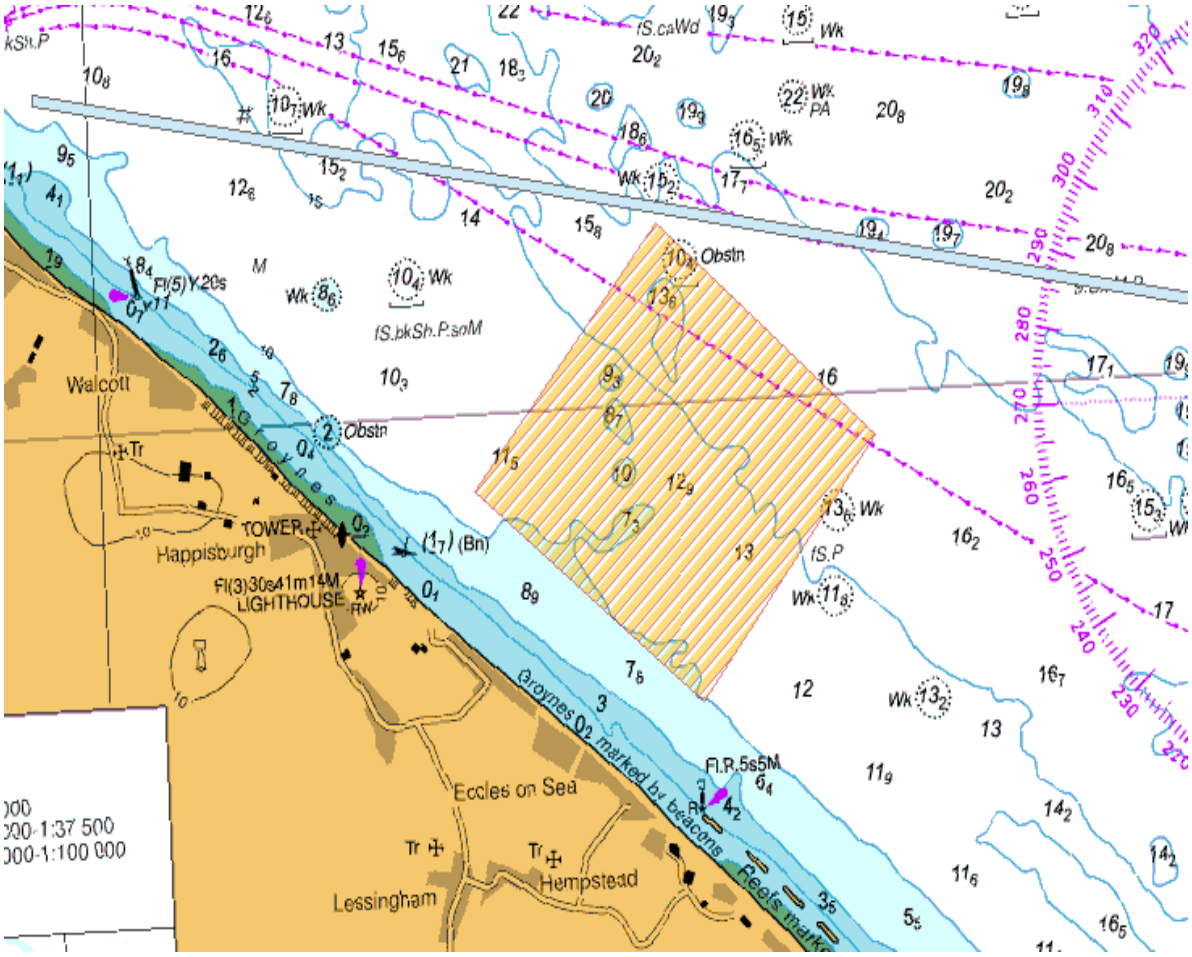

Figure 2. Location of University of Southampton Acoustic survey area: Happisburgh & The Monks.

Boundary Coordinates: Happisburgh & The Monks

TM: 52. 50807 N ; 1. 34927 E
MR: 52. 49805 N ; 1.36782 E
BB: 52. 45646 N ; 1.35188 E
ML: 52. 49645 N ; 1.33256 E

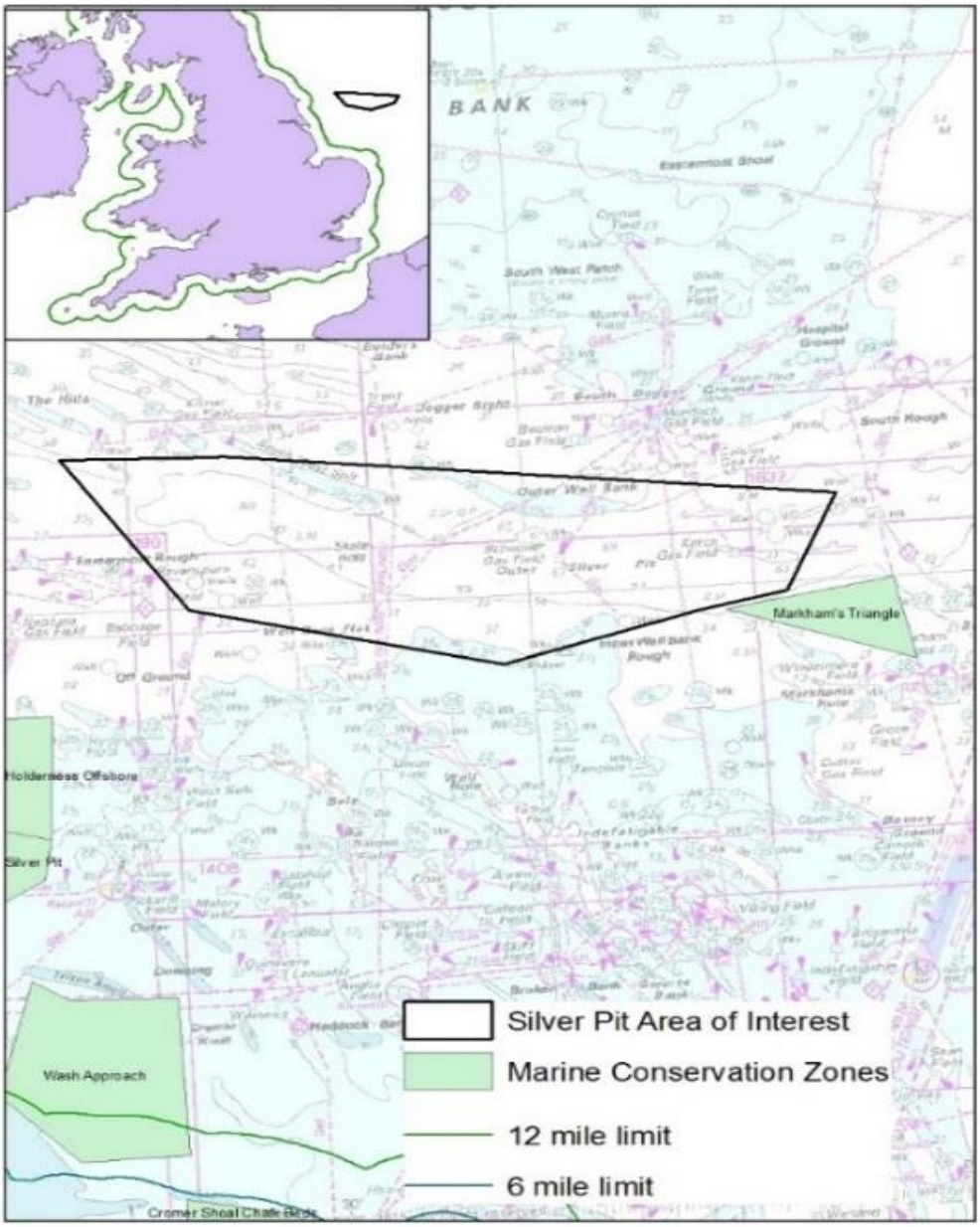

Figure 2. Location of Survey Area 2 (Silver Pit): Gear Trials.

Boundary Coordinates: Survey Area 2.

0.915108	**54.24994**	**Origin**
1.291515	**54.24595**	**1**
2.737574	**54.14056**	**2**
2.605327	**53.98668**	**3**
1.932267	**53.89067**	**4**
1.202516	**53.99899**	**5**

Figure 3. Location of Survey Area 3 (Off Lowestoft): Gear Trials.

2.269185	**52.87319**	**Origin**
2.723629	**52.88009**	**1**
2.72553	**52.4024**	**2**
2.267284	**52.39542**	**3**

PLAN:

The timings of survey operation are dependent on prevailing conditions and any technical issues arising. Therefore, the following scenarios are for guidance only.

1. Happisburgh and The Monks

Completion of 100% MBES coverage of the Happisburgh and the Monks survey area (estimated 30 hours of survey).

2. Underwater Camera

To find the optimal setting for video capture system using the HD and IP camera's. Recent changes made to the stills cameras requires exploration of the aberration between the two systems, one with a water corrected lens and one without.

Testing of the two new camera systems, e.g., HD and IP. This has never been fully tested and will be required for future surveys.

3. Sidescan: Responder beacon test

1. Plan a single survey line (at least two hours long at a speed of 5 knots) in clear water no shallower than 30m and enter into Tower and Transas.

2. Deploy HIPAP and sidescan with transponder attached and responder active.

3. At varying tow cable lengths log transponder position in Tower for 5 min, then responder position for 5 min noting stability of signal.

4. At end of test (either the line end or maximum tow cable length for at least 10m tow fish altitude) recover the tow fish.

5. Deployment and recovery training – to be carried out after an extended toolbox talk and during above test. Repeat if necessary for further training.

4. Multibeam/Seapath: Testing of replacement Seapath unit

1. To establish that the replacement Seapath can operate with the MRU returned to its original position (in the compressor room).

2. Find a suitable flat seabed and single feature (Wreck) in deepest water available and enter into Tower and Transas.

3. Perform two standard calibration checks over site – one with blade 1m down and another at full blade deployment depth.

4. Use both SIS and CARIS to evaluate calibration and performance.

Note this can also be used as a training exercise in calibration checks of the multibeam.

Secondary Aims

- To install and test the acoustic synchronisation unit between the Multibeam, EK60 and EA600 sounders.

- Test and train in the use of the newly acquired Seabird Rosette.

- Onboard data backup system - To review and update the current documentation regarding the setting up of the back-up system.

    - To collect water samples for determination of suspended particulate materials at the West Gabbard SmartBuoy site, for calibrating SmartBuoy, Ferrybox and ocean colour space-borne data (for the EU FP7 project HIGHROC, C5878);

    - To collect a zooplankton sample at the West Gabbard SmartBuoy site, for monitoring of zooplankton populations as part of the UK monitoring programme (Defra SLA021).

Marc Whybrow
Scientist in Charge
29/11/2016

DISTRIBUTION:

MIST
Sue Ware
Bill Meadows
POMS