RV BELGICA CRUISE 2013/10 – CRUISE REPORT

Subscribers:	Dr. Hans Polet (or Els Vanderperren)
Institutes:	Ilvo Dier 1, Fishing Gear Research
Addresses:	Ilvo Dier 1: Ankerstraat 1 8400 Oostende
Telephones:	+32(0)59 56 98 37 (HP) +32(0)59 56 98 40 (EV)
E-mails:	hans.polet@ilvo.vlaanderen.be els.vanderperren@ilvo.vlaanderen.be

Fishery: 08/04/2013 – 12/04/2013

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1. CRUISE DETAILS

1.	Cruise number	2013/10
2.	Date/time	Zeebrugge TD: 08/04/2013 at 11h30 Zeebrugge TA: 12/04/2013 at 10h30
3.	Chief Scientist Participating institutes	Jochen Depestele UGent
4.	Area of interest	Belgian Coast Mouth of the Thames: Sunk

2. LIST OF PARTICIPANTS

INSTITUTE	NAME	08/04/2013 – 12/04/2013
Ilvo Dier 1	Bart VERSCHUEREN	X
"	Christian VANDEN BERGHE	X
"	Eddy BUYVOETS	X
"	Emely HANSEEUW	X
"	Fernand DELANGHE	X
"	Jochen DEPESTELE	X
"	Norbertus VAN CRAEYNEST	X
UGent	Alejandro SOTILLO[1]	X
"	Nicolas BLANC[1]	X
Total number of participants:		9

3. SCIENTIFIC OBJECTIVES

The Belgian fishing fleet consists mainly of beam trawlers. This fishing method has some serious drawbacks like high fuel and material consumption, high discard levels and a significant environmental impact. ILVO-Fisheries (Oostende) is developing an alternative beam trawl in close cooperation with the fishery sector in order to reduce these drawbacks. Following alterations are being tested and are already used on board of some commercial beam trawlers on an experimental and voluntary basis:

- Roller gear to reduce ground the seafloor friction,
- large meshes (300mm) in the top panel to reduce gear drag and increase roundfish selectivity,
- a benthic release panel in square meshes in the belly of the trawl to reduce discarding of non-commercial species and
- a T-90 cod-end to reduce discarding of commercial roundfish and other non-commercial species.
- Different types of hydrodynamic wing beams
- The pulse trawl for flatfish and the Hovercran pulse trawl for shrimps

This alternative beam trawl is being developed in the frame of:

- the biodiversity directives of the European Commission (background: the Johannesburg Declaration),

- the “North Sea Cod Recovery Plan” and other management plans to protect commercial fish stocks,
- the IWT-project CIVIS and the project “Alternative beam trawl”,
- The European Fishery Fund project ADVIS II,
- a general concern in ILVO-Fisheries about the quality of the marine environment and
- an increased profitability of the Belgian fishing sector.

The present RV Belgica voyage is dedicated to the following objectives:

- Separate the two most important commercial flatfish species, i.e. sole and plaice, during the catching process and guide them to the appropriate cod-end, small mesh for sole, large mesh for plaice.
- Develop methodology to determine the behaviour of seabirds on fishery discards
- Collecting live fish
- Testing acoustic device (Netmind) to determine net parameters

4. OPERATIONAL COURSE

All times are given in local time. All coordinates in WGS84.
Throughout the campaign, measurements are made with the AUMS system

Monday 08 April 2013:

- **09:00 – 11:00:** Embarkation and rigging of the fishing gear.

- **11:30:** Departure Zeebrugge

- **14:15 – 15:00:** haul 01
  start position: N 51° 13.670’ E 02° 51.600‘
  end position: N 51° 12.090 ‘ E 02° 48.090‘

- **15:25 – 16:10:** haul 02
  start position: N 51° 11.420’ E 02° 46.230’
  end position: N 51° 10.380‘ E 02° 42.500’

- **16:25 – 17:10:** haul 03
  start position: N 51° 09.780’ E 02° 40.670’
  end position: N 51° 08.980‘ E 02° 36.820’

- **17:25 – 18:10:** haul 04
  start position: N 51° 08.850’ E 02° 35.450’
  end position: N 51° 07.940‘ E 02° 32.120’

- **18:40 – 19:25:** haul 05
  start position: N 51° 08.140’ E 02° 32.700’
  end position: N 51° 09.000‘ E 02° 36.530’

- **21:00:** End of activities.

Tuesday 09 April 2013:

- **06:00 – 07:30:** haul 06
  start position: N 51° 48.550’ E 01° 30.290’
  end position: N 51° 48.430‘ E 01° 30.230’

- **07:55 – 09:25:** haul 07
  start position: N 51° 48.620' E 01° 30.200'
  end position: N 51° 48.940' E 01° 30.750'

- **09:45 – 11:15:** haul 08
  start position: N 51° 49.190' E 01° 30.980'
  end position: N 51° 49.100' E 01° 27.620'

- **11:30 – 13:00:** haul 9
  start position: N 51° 48.000' E 01° 27.500'
  end position: N 51° 43.710' E 01° 21.600'

- **13:25 – 14:55:** haul 10
  start position: N 51° 44.430' E 01° 23.620'
  end position: N 51° 48.920' E 01° 28.210'

- **15:35 – 15:45:** haul 11
  start position: N 51° 48.210' E 01° 30.270'
  end position: N 51° 48.920' E 01° 28.210'

- **06:00 – 17:30:** haul 12
  start position: N 51° 49.380' E 01° 28.150'
  end position: N 51° 47.770' E 01° 30.830'

- **17:45 – 19:15:** haul 13
  start position: N 51° 48.020' E 01° 30.940'
  end position: N 51° 48.090' E 01° 31.420'

- **19:30 – 20:30:** haul 14
  start position: N 51° 48.550' E 01° 31.450'
  end position: N 51° 49.950' E 01° 29.090'

- **22:00:** End of activities.

Wednesday 10 April 2013:

- **06:00 – 07:30:** haul 15
  start position: N 51° 50.020' E 01° 29.140'
  end position: N 51° 49.390' E 01° 28.540'

- **08:15 – 09:45:** haul 16
  start position: N 51° 48.440' E 01° 27.370'
  end position: N 51° 48.750' E 01° 29.810'

- **10:15 –11:30:** haul 17
  start position: N 51° 49.290' E 01° 28.380'
  end position: N 51° 48.450' E 01° 29.640'

- **11:40 – 13:10:** haul 18
  start position: N 51° 48.000' E 01° 30.440'
  end position: N 51° 47.380' E 01° 26.250'

- **13:35 – 15:05:** haul 19
  start position: N 51° 46.860' E 01° 26.820'
  end position: N 51° 45.890' E 01° 27.040'

- **15:55 – 17:10:** haul 20
  start position: N 51° 49.000‘ E 01° 27.830’
  end position: N 51° 47.380‘ E 01° 26.250’

- **20:30:** End of activities.

Thursday 11 April 2013:

- **12:50 – 13:55:** haul 21
  start position: N 51° 49.000’ E 01° 28.530’
  end position: N 51° 49.100‘ E 01° 29.660’

- **15:15 – 16:45:** haul 22
  start position: N 51° 48.490’ E 01° 30.190’
  end position: N 51° 48.930‘ E 01° 30.120’

- **17:00 – 18:30:** haul 23
  start position: N 51° 48.230’ E 01° 30.500’
  end position: N 51° 49.130‘ E 01° 27.930’

- **18:50 – 20.20:** haul 24
  start position: N 51° 48.570’ E 01°27.680’
  end position: N 51° 48.570‘ E 01° 27.570’

- **20:35 –22:05:** haul 25
  start position: N 51° 48.740’ E 01° 27.210’
  end position: N 51° 50.580‘ E 01° 31.430’

- **22:25 – 23:55:** haul 26
  start position: N 51° 50.320’ E 01° 29.610’
  end position: N 51° 49.810‘ E 01° 28.830’

Friday 12 April 2013:

- **00:10 – 01:40:** haul 27
  start position: N 51° 50.170’ E 01° 30.030’
  end position: N 51° 80.090‘ E 01° 29.230’

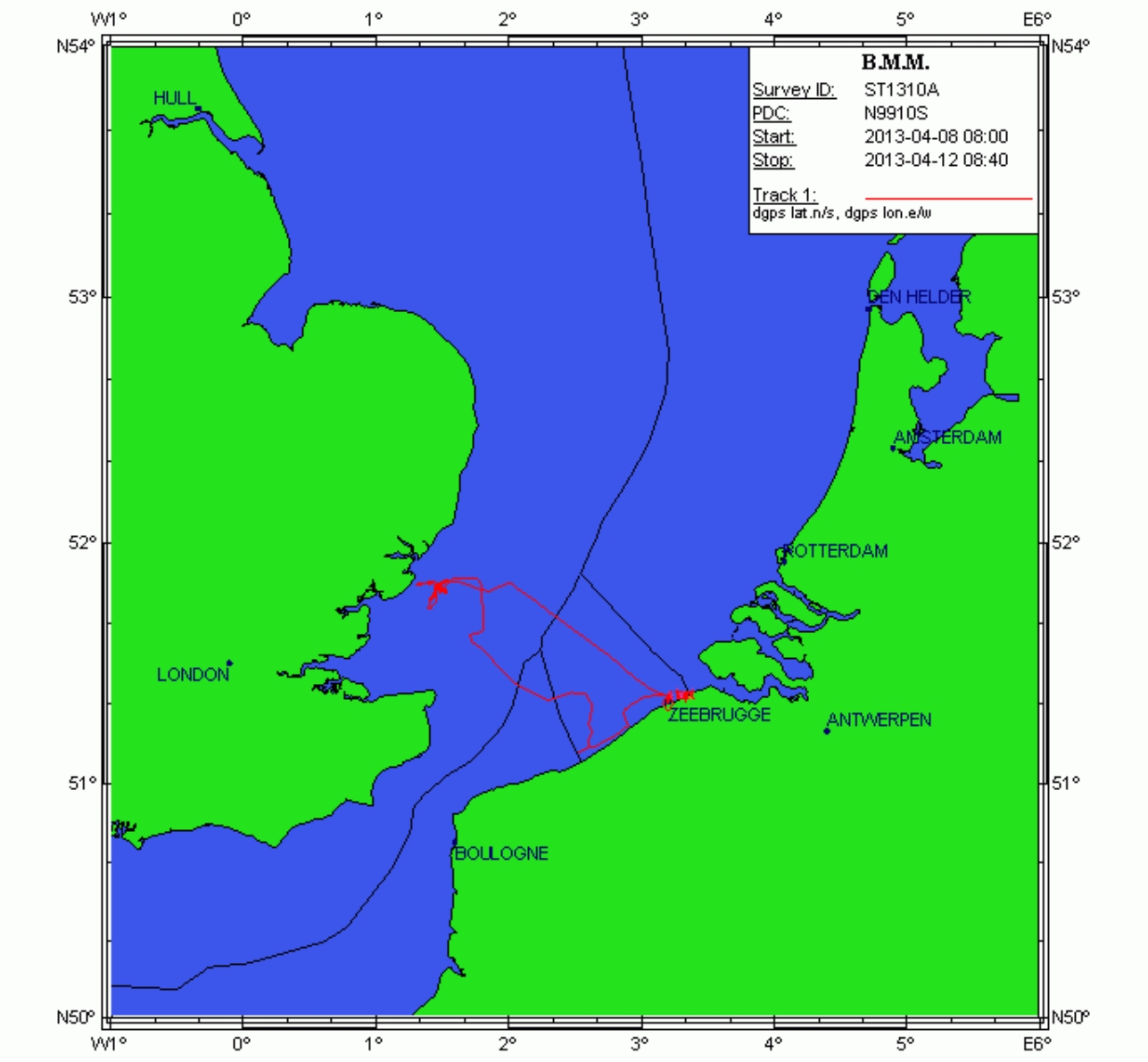
- **04:00:** End of activities.

- **10:30:** Arrival at Zeebrugge.

- **10:30 – 14:00:**
  Disembarkment of apparatus, fishing gear and personal .

- End of campaign 2013/10 -

5. TRACK PLOT


B.M.M.
Survey ID: ST1310A
PDC: N9910S
Start: 2013-04-08 08:00
Stop: 2013-04-12 08:40
Track 1:
dgps lat.n/s, dgps lon.e/w
HULL
DEN HELDER
AMSTERDAM
ROTTERDAM
LONDON
ZEEBRUGGE
ANTWERPEN
BOULOGNE
W1°
0°
1°
2°
3°
4°
5°
E6°
N54°
53°
52°
51°
N50°

6. MEASUREMENTS AND SAMPLING

6.1. ILVO

Fishing gear: 8 meter 120mm twin beam trawl with 40 mm cod-ends.

Following selective devices were tested:

- separator panels.

Catch sampling: Both of the twin trawl gears were rigged with standard commercial 4m beam trawls. Both gears were equipped with 40mm double cod-ends, each time one upper and one lower cod-end. The net was rigged with an inclined separator panel. This panel that starts in the belly, shortly after the bobbin rope, should allow sole to penetrate and allow this fish to end up in the lower part of the net. Due to its strong ability to penetrate net meshes, especially this species will take advantage of this panel. Other species such as plaice that do not penetrate net meshes as easily will stay in the upper part of the net. As such, the two species can be guided to cod-ends with appropriate mesh sizes. The catch can thus be separated in order to minimise discards.

The experiments determine the proportion of each fish and invertebrate species in the different compartments of the gear. For this purpose the length distributions were determined for all commercial fish species. After each tow, the weight for each compartment in the gear was determined for the total catch and discards. All commercial fish species in the catch were sorted and measured. There was also a benthos sample taken to estimate the non-commercial catch. The benthos was counted and weighted by species.

Seabird discard feeding behaviour: Multi-item experiments were performed in collaboration with INBO as trial of a new method to assess the factors determining the proportion of a discard fraction that is consumed by seabirds, and thus does not return to the benthic environment. It was the aim of this study to identify as well whether the composition of the flock of ship-following birds has an influence on the amount of discarded fish that is consumed. It was intended to test whether a knowledge on meteorological conditions, amount of daylight hours, and approximate bird community composition, can be predictive of the magnitude of discard consumption, given a fixed species composition of the discard fraction.

7. REMARKS

The ILVO-Fishery team would like to thank the Cdt and crew of RV Belgica for the good cooperation.

8. DATA STORAGE

- All automatic online acquired data (ODASIII including AUMS) have been provided to BMDC. Contact person: BMDC@mumm.ac.be
- Data on the catch composition and the effect of the technical alterations to the gear are stored in Excel sheets at ILVO for further analysis in R.

Oostende, 17 05 2013

Jochen Depestele,

Chief Scientist.