RV BELGICA CRUISE 2018/03ab – CRUISE REPORT

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Fishery: 05/02/2018 - 09/02/2018
19/02/2018 - 23/02/2018

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1. CRUISE DETAILS

1.	Cruise number	2018/03ab
2.	Date/time Zeebrugge ETD Zeebrugge ETA Zeebrugge ETD Zeebrugge ETA	<u>2018/3a</u> 05/02/2018 at 11h00 09/02/2018 at 11h00 <u>2018/03b</u> 19/02/2018 at 10h00 23/02/2018 at 11h00
3.	Chief Scientist Participating institutes	Dr. Ir. Maarten Soetaert (MS) & Heleen Lenoir (HL) ILVO
4.	Area of interest	English channel & coast

2. LIST OF PARTICIPANTS

Institute	NAME	Gender	05-09/02/2018	19-23/02/2018
ILVO	Maarten Soetaert	M	X	X
	Heleen Lenoir	F	X	X
	Patrick Calebout	M	X	X
	Eddy Buyvoets	M	X	X
	Christian Vanden Berghe	M	X	X
	Marie Robberecht	F	X	
	Ellen Peceu	F	X	
	Lancelot Blondeel	M		X
	Frankwin van Winsen			x
	Total participants:		7	7

3. SCIENTIFIC OBJECTIVES

<u>ILVO</u>

On July 14, 2011 the European Commission (COM) published its proposal for a new CFP to replace the current Regulation (EC) No 2371/2002. The main change is the introduction of a discard ban in the form of a gradual introduction of the landing obligation, starting from 2016. In the end, this should lead to a landing obligation for almost all species. Research on improving the selectivity of towed gears is therefore necessary. In the coming years, the available shiptime will be used mainly for that purpose (mainly through TECHVIS, a project funded by IWT, SDVO and the fisheries sector).

This first part of the trip (3A) will focus on the performance and optimization of an electrified Benthos Release Panel (eBRP). A Benthos Release Panel (BRP) is a large (1x1,2m) square mesh panel inserted in the lower panel of the beam trawl, just in front of the cod-end. Unwanted benthic invertebrates and debris easily fall through the large mesh openings, while the majority of the marketable fish hover over the panel and end up in the cod-end. This device already proved to be efficient in reducing the bycatch of benthos and debris dramatically. Apart from the ecological advantages, the smaller catch volumes also result in better fish quality. However, a minor part of the target species, in particular sole, are also escaping through the square mesh openings, which is an unacceptable loss of earning for the fisherman.

Therefore, adding a limited electrical field on top of this BRP, can prevent flatfish from actively escaping through the panel. After previous largely successful trials with a 240 mm eBRP, the catch efficiency of a 200 mm eBRP at 2 different electric frequencies will be determined by means of elaborate catch comparisons. If everything goes well and sufficient time is available for 5 additional hauls, a second panel will be inserted in the back of the net in front of the eBRP to assess the combined effect on the release of round fish.

The goal of the second trip (3B) will depend on the first part. If no technical failures were encountered and all experiments with the eBRP run well, non-electrical gearadaptations will be tested aiming to reduce the bycatch of roundfish. This will be done by either not letting them enter the gear (e.g. by lights and/or chains under the beam) either by promoting escape through escape windows by f.e. fluttering ropes in the extension of the trawl. In case the study performed in 3A was unfinished, we will continue with the electrical experiments and try either a 150 mm BRP either the combination with an escape window in the back of the net as explained above.

OD Nature-LN (ICOS)

The AUMS (Autonomous Underway Measurement System) system is inspired by the success of similar systems deployed on various ships of opportunity in the framework of the European Union FerryBox project (www.ferrybox.org). The instrumentation will greatly enhance the continuous oceanographic measurements made by RV Belgica by taking advantage of the significant technological improvements since the design of the existing (salinity, temperature, fluorescence) systems (cfr. ICOS Standards). In particular, many new parameters can now be measured continuously including important ecosystem parameters such as nitrate, ammonia, silicate, dissolved oxygen and CO2, turbidity, alkalinity and phytoplankton pigments. In addition, the new equipment allows automatic acquisition and preservation of water samples, rendering RV Belgica operations significantly more efficient by reducing onboard human resources. Data will be available in near real-time via OD Nature's public website (http://odnature.naturalsciences.be/belgica/en/odas) and following quality control, from the Belgian Marine Data Centre. Since 2015, the AUMS data are also delivered to the EC ESFRI project ICOS.

4. OPERATIONAL COURSE

All times are given in local time. All coordinates in WGS84. Tentative program; priority or observations may change according to tidal and weather conditions and/or technical constraints. Throughout the campaign, measurements are performed with the AUMS system.

Monday 05/02/2018

08h00-11h00	Embarkation of instruments and personnel. **Scientists should be present at 09h00 at the latest.**
11h00	Departure from Zeebrugge
11h00 – 12h00	Transit to fishing ground Belgian Coast
12h00 – 21h00	Fishing on Belgian coast
21h00 – 05h00	Transit to English coast

Tuesday 06/02/2018

05h30 – 21h00	Fishing on English coast

Wednesday 07/02/2018

05h30 – 21h00	Fishing on English coast

Thursday 08/02/2018

05h30 – 20h00 Fishing on English coast

22h00 – arrival Transit to Zeebrugge

Friday 05/02/2018

07h00 (TBC) Arrival at Zeebrugge

Disembarkation of instruments and personnel

- End of campaign 2018/03a -

Monday 19/02/2018

08h00-10h00 Embarkation of instruments and personnel.

10h00 Departure from Zeebrugge

10h00 – 21h00 Transit to English Channel

21h00 – 05h00 Fishing in English Channel

Tuesday 20/02/2018

11h30 – 04h00 Fishing in English Channel

Wednesday 21/02/2018

12h30 –05h00 Fishing on English coast

Thursday 22/02/2018

12h30 – 15h00: Fishing on English coast
15h00 - 17h00: Processing catches + cleaning lab and outdoor equipment
17h00 – arrival Transit to Zeebrugge

Friday 2302/2018

08h00 (TBC) Arrival at Zeebrugge

Disembarkation of instruments and personnel

- End of campaign 2018/03b -

5. TRACK PLOT

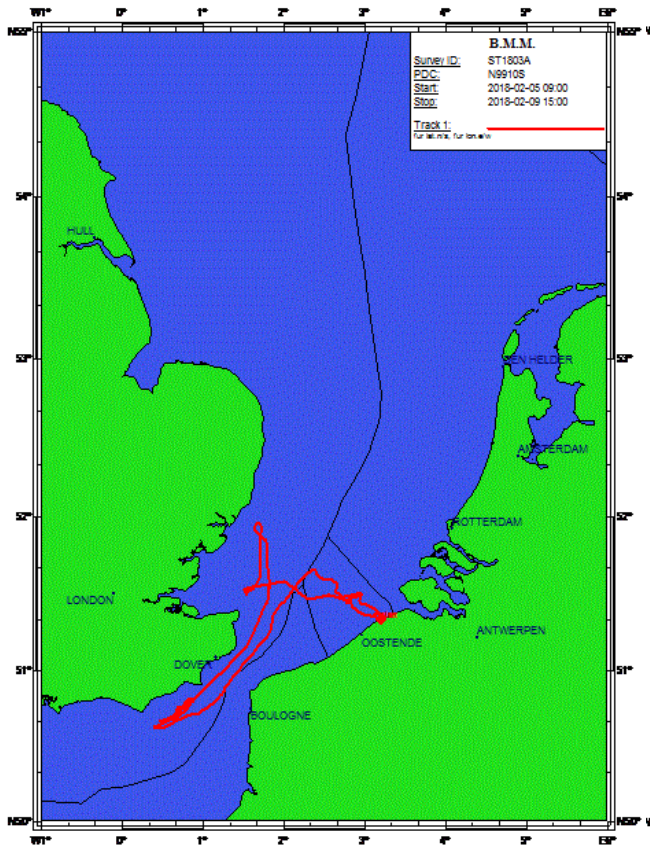

Figure 1: Track plot of campaign 2018/03a

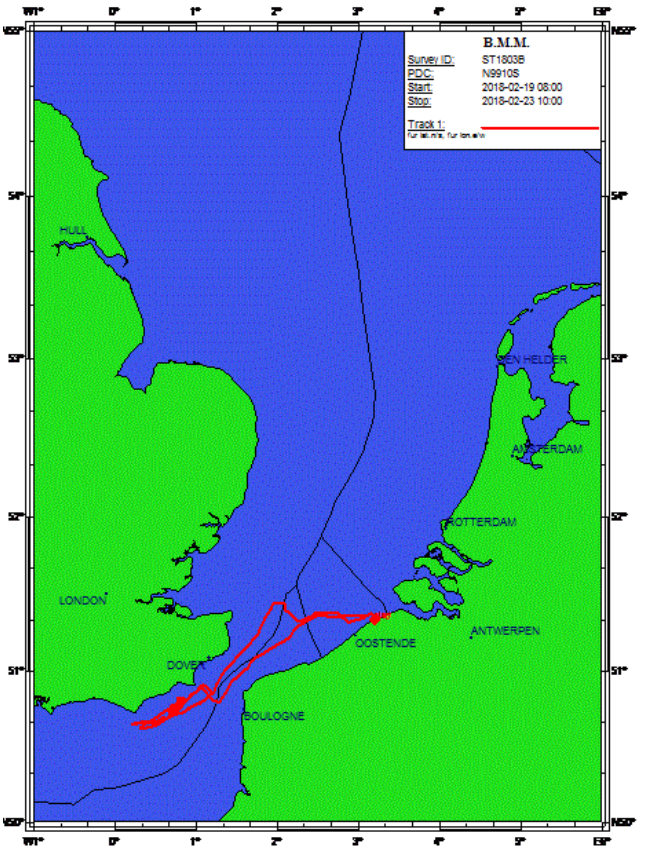

Figure 2: Track plot of campaign 2018/03b

6. MEASUREMENTS AND SAMPLING

6.1. ILVO

2018/03a

Monday 5/02/2018: Flemish banks

Haul 1: 200 mm eBRP (40 Hz), not processed, problem with pulse winch

Haul 2: 200 mm eBRP (40 Hz), success
250 kg and ± 10 commercial soles each side

Haul 3: 200 mm eBRP (40 Hz), succes
70 kg en and ± 515 commercial soles each side

Tuesday 6/02/2018: West

Haul 4: 200 mm eBRP (40 Hz), success
160 kg and ± 18 commercial soles each side

Haul 5: 200 mm eBRP (40 Hz), success
140 kg and ± 10 commercial soles each side

Haul 6: 200 mm eBRP (40 Hz), NO pulse, connector broken
250 kg and ± 18 commercial soles each side

Haul 7: 200 mm eBRP (40 Hz), success
120 kg and ± 6 commercial soles each side

Haul 8: 200 mm eBRP (40 Hz), success
50 kg and ± 10 commercial soles each side

Haul 9: 200 mm eBRP (40 Hz), success
250 kg and ± 18 commercial soles each side

Haul 10: 200 mm eBRP (40 Hz), success
140 kg and ± 15 commercial soles each side

Haul 11: 200 mm eBRP (40 Hz), success
150 kg and ± 20 commercial soles each side (night)

Wednesday 7/02/2018: West

Haul 12: 200 mm eBRP (40 Hz), success
250 kg and ± 10 commercial soles each side (night)

Haul 13: 200 mm eBRP (40 Hz), success
70 kg and ± 5 commercial soles each side

Haul 14: 200 mm eBRP (40 Hz), success
50 kg and ± 6 commercial soles each side

Haul 15: 200 mm eBRP (40 Hz), success
150kg and ± 6 commercial soles each side

Haul 16: 200 mm eBRP (40 Hz), success
120 kg and ± 7 commercial soles each side

Haul 17: 200 mm eBRP (40 Hz), success
150 kg and ± 10 commercial soles each side

Haul 18: 200 mm eBRP (40 Hz), NO pulse, connector broken
200 kg and ± 16 commercial soles each side

Thursday 8/02/2018: Thames estuary

Haul 19: 200 mm eBRP (40 Hz), success
190kg and ± 44 commercial soles each side

Haul 20: 200 mm eBRP (40 Hz), success
10 kg and no commercial sole

Haul 21: 200 mm eBRP (40 Hz), success
Not processed since catch consisted out of over 1000 kg rays

Haul 22: 200 mm eBRP (40 Hz), NO pulse, connector broken
100 kg catch and ± 20 commercial soles each side

2018/03b

Monday 19/02/2018: English Channel

Haul 1: 200 mm eBRP (40 Hz), success
400 kg catch and ± 28 commercial soles each side

Haul 2: 200 mm eBRP (40 Hz), success
130 kg catch and ± 50 commercial soles each side

Haul 3: 200 mm eBRP (40 Hz), success
170 kg catch and ± 55 commercial soles each side

Haul 4: 200 mm eBRP (40 Hz), success
150 kg catch and ± 30 commercial soles each side

Tuesday 20/02/2018: English coast + English Channel

Haul 5: 200 mm eBRP (40 Hz), success
80 kg catch and ± 3 commercial soles each side

Haul 6: 200 mm eBRP (40 Hz), success
200 kg catch and ± 8 commercial soles each side

Haul 7: 200 mm eBRP (40 Hz), success
140 kg catch and ± 40 commercial soles each side

Haul 8: 200 mm eBRP (40 Hz), success
150 kg catch and ± 50 commercial soles each side

Haul 9: 200 mm eBRP (40 Hz), success
250 kg catch and ± 18 commercial soles each side

Haul 10: 200 mm eBRP (40 Hz), success but hole in cod-end portside
110 kg catch and ± 8 commercial soles each side

Haul 11: 200 mm eBRP (40 Hz), not processed because of hole in cod-end

Wednesday 21/02/2018: English coast in front of Hastings

Haul 12: 200 mm eBRP (40 Hz), success
80 kg catch and ± 10 commercial soles each side

Haul 13: 200 mm BRP (40 Hz), success
150 kg catch and ± 15 commercial soles each side

Haul 14: 200 mm BRP (40 Hz), success
150 kg catch and ± 15 commercial soles each side

Haul 15: 200 mm BRP (40 Hz), success
110 kg catch and ± 20 commercial soles each side

Haul 16: 200 mm BRP (40 Hz), success
1280 kg catch and ± 17 commercial soles each side

Haul 17: 200 mm BRP (40 Hz), success
160 kg catch and ± 15 commercial soles each side

Haul 18: 200 mm BRP (40 Hz), success
150 kg catch and ± 17 commercial soles each side

Haul 19: 200 mm eBRP (40 Hz), success
190kg catch and ± 18 commercial soles each side

Thursday 22/02/2018: English coast in front of Hastings

Haul 20: 200 mm BRP (40 Hz), success
70 kg catch and ± 10 commercial soles each side

Haul 21: 200 mm BRP (40 Hz), success
80 kg catch and ± 10 commercial soles each side

7. REMARKS

- Half of last day of cruise A was lost due problems with the winch.
- Half of last day of cruise B was lost due the weather resulting in long transit time and early departure.

8. DATA STORAGE

- The locations of the hauls as well as the environmental conditions such as the weather, depth, tide, wave height, … are recorded on paper and will be entered in an digital form at the institute.
- The total catch weights, the catch weights of each fraction and the species and number of benthos caught were written down on paper templates and partially inserted in the Smartfish software.
- The number, size and species of all commercial fish species caught were measured and registered using a digital measuring board and inserted in the Smartifish software.
- The data obtained with the measuring board or inserted manually in the Smartfish software are immediately merged, saved and back-up at the ILVO servers.
- The data will also be published in a A1 publication in the coming 2 years.
- This data can be obtained by contacting Heleen.lenoir@ilvo.vlaanderen.be