

THE NORTH SEA BALLAST WATER OPPORTUNITY PROJECT NEWSLETTER

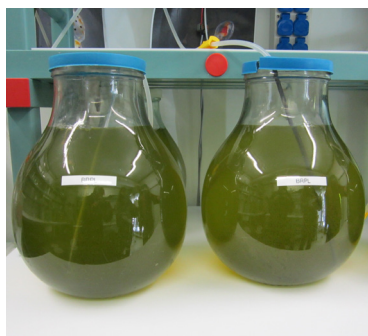
2013/01



NORTH SEA BALLAST WATER

Introduction

With one more year to go for the NSBWO project, below we report on major activities during the first quarter of 2013 from all but one work package.



In this newsletter

- ◆ Budget change
- ◆ Flow Cytometry workshop
- ◆ Annual Meeting 2013
- ◆ New Ballast Water Times

WP1: Project co-ordination

WP1 co-ordinated two major activities:

1. Future activities

We developed a plan for possible future activities in light of ballast water as a vector for invasive species and identified parties who would be willing to lead. EM Consult advised on potential funding opportunities.

The following items were seen as relevant issues to further develop:

- Land-based & Ship-board testing methods (including development of ring testing)
- Methodology for Compliance Monitoring & Enforcement
- Exemption strategies for specific areas and shipping routes
- Communication & education of maritime stakeholders
- Communication to the General Public
- Hull fouling
- Policy Workshops at an European level
- Safeguarding Transparency of processes and decisions

We did not propose a new project

on hull-fouling, since both WMU and GoConsult are already involved in on-going projects. We see education of the general public as an intrinsic part of all on-going activities in ballast water management, but not suitable for taking up as a separate project. The overview was presented to the Steering Group at the Annual Meeting 12 March, World Maritime University) and found agreement. The steering group agreeing will achieve a major part of Deliverable 1.5 'Plan for future sustainable continuation of the NSBWO activities'

2. Budget change

The budget change reflects two major ruling issues that affected the project:

- Dissemination: the refusal of the United Kingdom to acknowledge in kind contribution. Therefore IMarEST has been unable to fulfil its role in the project as reported earlier in 2011.
- FLC sub-partner regime: the enforcement of a national FLC regime for all sub-partners that would seriously increase costs and workload for sub-partners.

A minor shift in budget can consolidate an important part of the project and ensure the six-month extension to 1 July 2014. Such extension allows the project to initiate some items mentioned above:

- Improvement of testing methodology, also in relation to the 'New Rule' of the US Coast Guard (led by NIOZ, partners GoConsult, IMARES and BSH)
- Further development of methodology for Compliance Monitoring and Sampling (led by GoConsult, partners WMU, BSH, NIOZ & GoConsult)
- Dissemination to maritime stakeholders (led by WMU & ProSea, partners: all)
- Safeguarding transparency of processes and decisions (led by Cato ME, partners BSH and WMU)

Budget change #5 was finally submitted on 21st February 2013 following some delay due to technical problems and the inclusion of earlier changes and the request for extension in one package.



European Union The European Regional Development Fund

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WP3: Science and Testing

An international flow cytometer workshop was held, jointly organised by WP3 and WP4 (NIOZ, February 2013). We aimed to compare newly developed as well as present flow cytometric instruments for rapid counting of low abundance aquatic organisms in the 2-10 μm and 10-50 μm size classes.

Flow cytometers have been used for decades to count eukaryotic cells in single file. Initially applied in hematologic research the methodology was then developed for biological oceanographic research by Veldhuis in the 1990s and is also applicable in limnology. The instrument can measure data on abundance and status of plankton with a speed that is unparalleled by microscopy. The method is suitable to test the performance of ballast water management systems according to regulation D-2 of the Ballast water Management Convention as well as the size class below 10 μm . Our core

question was: which cytometers are at present capable of counting 2-10 μm and 10-50 μm cells accurately, precisely and speedily?

Prior to the workshop participants submitted relevant technical specifications (flow rates, laser and filter specs, maximum count rates, data analysis software). Measurement protocols were discussed prior and at the start of the workshop. During the workshop flow rates and particle size limits were measured using calibration beads provided by NIOZ. Uni-algal cultures of *M. pusilla*, *P. minimum* and *P. belizeanum* that widely differ in cell size (2 to 50 μm) and in cell concentration were used to examine accuracy and precision of the different instruments. Reference material was determined by standard bright field and fluorescence (vitality probe) microscopy. Two flow rates, a maximum and one lower rate were applied to determine sample analysis time and the effect of flow rate on accuracy and precision. First a 'general' species (*Phaeocystis globosa*) was

measured, followed by three species at two concentrations: one high concentration (resembling a test water or control sample) and one low concentration (resembling a treated sample).

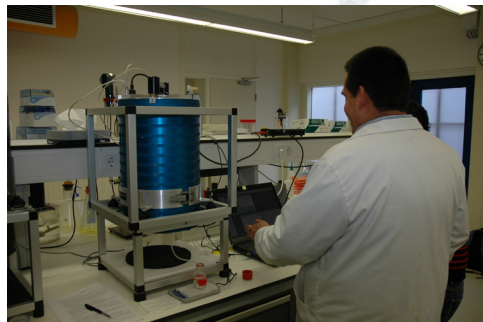
Finally, phytoplankton cells were counted in real-world Wadden Sea samples.

Microscopic checks of all samples were made by NIOZ, GSI and NIVA. After discussing the data and finishing data analyses, they will be made public.

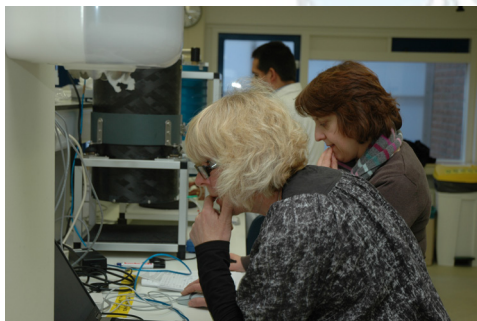
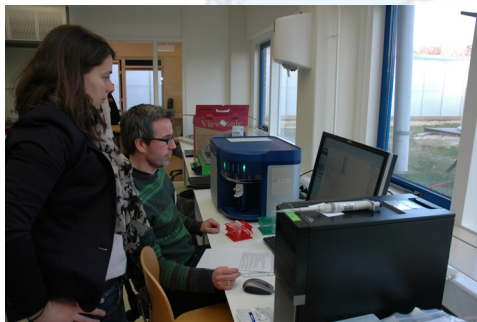
Invited were scientific institutes, companies that develop or sell flow cytometers and other interested parties that are able to participate with a working instrument and are willing to share data. Flow cytometers can be common instruments but also models that, for instance, use holography or microscope lenses for particle imaging.

The workshop report, a product of WP3 and WP4 will be published later in 2013.

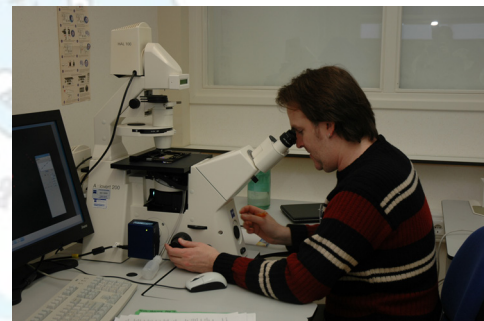
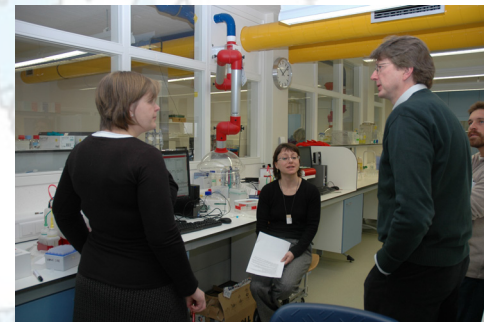
Rationale



Approach



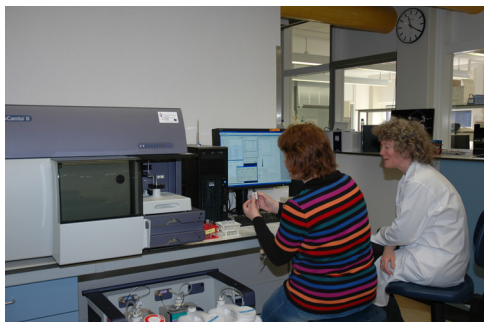
Participation





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The Flow Cytometer Workshop:



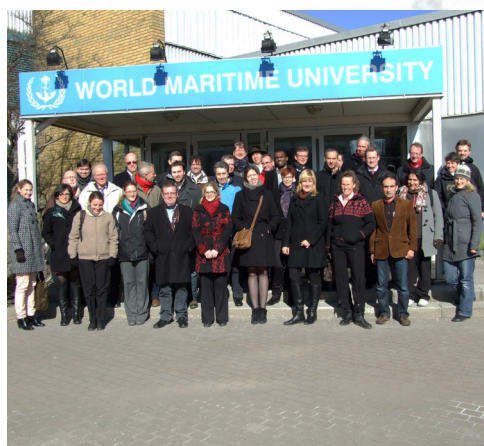
WP4: Science-Detection

As co-organiser we participated in the flow-cytometry workshop (February 2013). Flow cytometers are commonly used instruments to document organisms or particles in fluids. This makes them excellent candidate technologies to evaluate the compliance of ballast water management standards. The workshop

was attended by 29 participants from Belgium, France, Germany, Italy, the Netherlands, Norway, Portugal, United Kingdom and the United States of America. In practical tests the counting performance of the machines was compared with two different manual count procedures. The counting capabilities of all systems were challenged by using beads, cultured phytoplankton and a

Wadden Sea sample. The results are still being processed, but it seems that the smaller the objects to count are the more difficult it becomes for the machines to deliver an accurate answer. For bigger organisms the human count seems more reliable.

Other recent WP4 activities include the finalization of different reports which address WP4 deliverables.



WP5: Strategies

The 2013 NSBWO project's annual meeting was hosted by the World Maritime University and held in (Malmö, Sweden, 11-12 March). More than fifty participants, including project partners, representatives of the port and maritime sectors, as well as other stakeholders, took part in the meeting. Keynote speakers gave an update on the GloBallast Partnerships and its future plans, highlighted some of the issues raised by the exemptions under Regulation A-4 of the BWM Convention, and presented shipowners' view of the way forward.

Workshops were organised to

disseminate project results and to enhance the exchange of opinions among the various participants in three broad domains:

- Training and capacity building
- Transparency
- Compliance monitoring and enforcement & ballast water sampling statistics

The six work package leaders summarized their respective outcomes, current activities, and future plans. The annual meeting also provided the NSBWO project's steering group with an opportunity to discuss ways to extend the project.

WP6: Dissemination

During this quarter the WP6 core team met with a focus on organising the NSBWO Europort Conference, including a presentation to receive feedback from the Steering Group at the Annual Meeting 2013 (AM13). We also probed with the wider WP6 team, consisting of partners and sub partners for potential speakers and other contributors for the NSBWO-Europort Conference. The programming will be largely interactive and will be led by sub partner ProSea.

A third volume of the BW Times

was published prior to the AM13, focussing on general BWM issues including an item on Transparency for BWM. "Safeguarding openness of non-confidential information enhances Confidence and trust in ballast water management"

On behalf of the project we visited the New-Years celebration event of Groningen SeaPorts.

During BLG 17 partner CaTO organised a second meeting with those project partners and sub partners present at

IMO; an initiative welcomed by those attending. After an update on project activities, a briefing on ship-owners' approaches to BWM revealed that Scandinavian ship owners had recently become more pro-active in the field, while in Belgium and Germany the larger shipping companies tend to be more pro-active, although many are just waiting, as is the case in the other North-Sea countries. Although some ports are pro-active, most are not with several not seeing BWM as a responsibility of ports. An attendee stressed that information, however



transparent, still needs to be readily understood; way to address this issue were discussed.

In February we attended the BW Expert Group of partner IMarEST, pleading for ship owners to embark on experimenting with the newly developed detection tools resulting from the initiative by BSH. The issue was again raised at the CME workshop (BSH, Hamburg).

A profile article, 'The Guardian of the Sea', published in Shipping World & Shipbuilder, February 2013, included a highlighting of our project (www.Northseaballast.eu/interviews).

For the AM13 we extensively tried and identified a ship owner representative available and willing to speak at the meeting, eventually to succeed with the help of the Swedish government representative.

At the AM13 we organised a workshop on Transparency, after a challenging introduction by facilitator Mr Brutel

on connotation, perception and the essence of transparency, followed by an inspiring key note by Mr Carlsson of the Swedish Ship-Owner Association, highlighting how Swedish ship owners safeguarded transparency by dedicated strategies and a briefing on a potential legal framework to apply for ballast water issues by Ms ten Hallers, we embarked on evoking feedback on the issue and its role in BWM from the audience which led to a lively debate where we explored transparency in its broader sense: Identification of the need(s), common understanding of transparency, Identification of a legal framework, potential to propose a way forward.

Observations from the Transparency Workshop said:

Share data: technology, testing, procedures & ship-owner needs for a wealth of reasons:

- For a level playing field (ship owner)
- To enable comparison (Government, GloBallast)
- To know how to operate a system

or work with a procedure (Sci, PSC)

- For system maintenance and repair work (Govt., Science, PSC)
- To monitor system behaviour over time (test Facilities)
- For joining hands and learning from each other (Global Test Net)
- To recognise demarcation of operational system limitations (Govt, testF)
- To recognise shipping needs and availability of solutions (Govt)
- To fully appreciate environmental acceptability

Issues identified were:

- What best vehicle for carrying transparency forward
 - Data bases?
 - Accessible language?
- Who is going to pay
- Risk Assessment
- Testing and sampling for PSC are complex issues that need transparency for optimal development.

Impression of the Annual Meeting:

