Ref. Ares(2019)5030455 - 01/08/2019

GRACE grant no 679266

Toxic impact of oil spills

ESB workshop and report

D3.10

WP3: Oil impacts on biota using biomarkers and ecological risks assessment

Prepared under contract from the European Commission
Contract n° 679266
Research and Innovation Action
Innovation and Networks Executive Agency
Horizon 2020 BG-2014-2015/BG2015-2

Project acronym:	GRACE
Project full title:	Integrated oil spill response actions and environmental effects
Start of the project:	01 March 2016
Duration:	42 months
Project coordinator:	Finnish Environment Institute (SYKE)
Project website	http://www.grace-oil-project.eu

Deliverable title:	ESB workshop and report
Deliverable n°:	D3.10
Nature of the deliverable:	Report
Dissemination level:	Public

WP responsible:	WP3
Lead beneficiary:	UPV/EHU

Due date of deliverable:	28/02/2019
Actual submission date:	31/07/2019

Deliverable status:

Version	Status	Date	Author	Approved by
0.1	draft	17/07/2019	Ionan Marigomez, Xabi Lekube, Urtzi Izagirre, Manu Soto (UPV/EHU)	WP3 members 23/07/2019
1.0	final	23/07/2019	Ionan Marigomez, Xabi Lekube, Urtzi Izagirre, Manu Soto (UPV/EHU)	Steering group 31/07/2019

Table of contents

Executive Summary

Environmental specimen banks (ESBs) may provide support for the biological effects assessment of oil spills and oil spill responses. Within this framework, liaisons have been established with the most active ESBs at international level that have mussel archives (e.g., Swedish, German, Canadian, Arctic, and Norwegian). An IESB[1]-GRACE workshop meeting (satellite session) was carried out and a general statement (suitable to be made public on the GRACE website) was agreed about the potential use of ESBs for long-term and retrospective monitoring of the biological effects of oil spills and oil spill responses in the North Sea, the Baltic Sea and the Arctic Ocean. Likewise, future joint actions to promote research cooperation and networking were identified, including for example potential scientific output (e.g. opinion paper, letter, …) based on this statement.

[1] International Environmental Specimen Banks Group (IESB): http://www.inter-esb.org/

1. Introductory remarks

Environmental specimen banks (ESBs) may provide support for the biological effects assessment of oil spills and oil spill responses. Within this framework, liaisons have been established with most active ESBs at international level that have mussel archives (e.g., Swedish, German, Canadian, Arctic, and Norwegian).

In a first contact in 2017, Anders Bignert (Swedish ESB) and Jan Koschorreck (German ESB; Berlin) participated in a working group meeting with the GRACE team in the Plentzia Marine Station. Further on a joint working meeting was held in Bilbao in October 2017 during the celebration of the International ESB meeting. Then, in 2018, we prepared the report on "Environmental Specimen Banks: Sample and Data Inventory in Marine Areas of Arctic and Sub-Arctic Regions" within the GRACE project (Deliverable D3.4). . These actions were complemented with the organization of an IESB[2]-GRACE workshop meeting (satellite session) in which the report was presented. The report was deeply discussed and a general statement about the potential use of ESBs for long-term and retrospective monitoring of the biological effects of oil spills and oil spill responses in the North Sea, the Baltic Sea and the Arctic Ocean was agreed.

Invited attendees participated in that IESB-GRACE meeting-workshop organised on June 4th 2019 in the Natural History Museum of Stockholm in parallel to the International Conference on Environmental Specimen Banks, Stockholm, Sweden, 3-5 June, 2019 "The past, present and future of Environmental specimen banks". Attendees were renowned researchers involved in ESBs and in chemical and biological effects monitoring in the North Sea, the Baltic Sea and the Arctic Ocean.

Participant ESBs & Institutions were the following ones: Swedish ESB & Swedish Museum of Natural History; German ESB & German Environment Agency; Canadian ESB & Environment and Climate Change Canada; Denmark ESB & Arctic Research Centre - Aarhus University; Norwegian Environmental Specimen Bank & NIVA + NTNU: Morten Jartun; Biscay Bay Environmental Biospecimen Bank & PiE-UPV/EHU; U Iceland; and SYKE.

2. Minutes

A text transcription copy of the minutes of the IESB-GRACE meeting-workshop are included herein:

[2] International Environmental Specimen Banks Group (IESB): http://www.inter-esb.org/

MINUTES OF THE
IESB-GRACE Meeting-Workshop

International Environmental Specimen Bank Group (IESB)
About Integrated oil spill response actions
and environmental effects (GRACE project)

Date: 3rd of June (17:45-18:45)

Place: Natural History Museum. Stockholm

Assistants:
Swedish Museum of Natural History: Sara Danielson.
German Environment Agency, Berlin: Jan Koschorreck
Environment and Climate Change Canada & Canadian ESB: Daryl J McGoldrick
Arctic Research Centre, Aarhus University & Denmark ESB: Katrin Vorkamp
Norwegian Environmental Specimen Bank: Morten Jartun
BBEBB: Manu Soto, Urtzi Izagirre, Xabi Lekube, Ionan Marigómez (Chair)

Interested (excused):
NTNU: Bjorn Munro Jensen
University of Iceland, Reykjavík: Halldor P Halldorsson
SYKE, Finland: Kari Lehtonen
NIVA: Steven Brooks

1. Introductory remarks by IM (Chair)

GRACE and its deliverable about ESBs: This initiative is within the framework of the GRACE H2020 project (https://www.grace-oil-project.eu/en-US/) in which some deliverables are related with ESBs. In 2017, Anders Bignert and Jan Koschorreck already participated in a working group meeting with the GRACE team in the Plentzia Marine Station. Then, in 2018, we prepared the report on "Environmental Specimen Banks: Sample and Data Inventory in Marine Areas of Arctic and Sub-Arctic Regions". The last action that was scheduled within GRACE was to organize a IESB-GRACE meeting to discuss and agree a general statement about the potential use of ESBs for long-term and retrospective monitoring of the biological effects of oil spills and oil spill responses in the North Sea, the Baltic Sea and the Arctic Ocean.

Aim of the meeting: Attendees were invited to participate in this IESB-GRACE meeting-workshop because they are involved in ESBs and in chemical and biological effects monitoring in the North Sea, the Baltic Sea and the Arctic Ocean. The attendees were proposed to discuss and agree an open access statement (at least accessible to public through the GRACE website)

2. Statement: the use of ESB as tools for health and impact assessment

1) The GRACE report on "Environmental Specimen Banks: Sample and Data Inventory in Marine Areas of Arctic and Sub-Arctic Regions" was presented (see deliverable D3.4).

2) Further on, several aspects of the following issues were presented and discussed:

- Previous experiences in ESBs and monitoring in the ice seas (ESBs in Sweden, Norway, Germany and Canada) and in oiled regions (France-Erika-Ifremer; USA-Exxon & Deepwater Horizon- NOAA/Alaska/Charleston)
- Which measurements and which type of specimens?
- Needs and opportunities for biological effects monitoring in the North Sea, The Baltic Sea and most remarkably in the Arctic Ocean
- Identification of the PAH sources of interest: fingerprints
- QA requirements for court (impact and economic compensation)

3) All the attendees declared their interest in the initiative and the following statement was agreed:

- ESBs and related non-discontinued monitoring of contaminants and pollution effects are invaluable supporting tools for managing oil spills and oil spill responses in ice seas, especially in a predicted scenario of intensified maritime traffic and other human activities as a result of global climate change.

4) Agreed tasks and prospective ideas and actions:

- Agree a draft statement (Annex to the minutes; see Section 3)
- Accept the publication of the final statement in the GRACE website
- Explore the possibility of producing a scientific output (e.g. opinion paper, letter, …) on the basis of the final statement
- Initiate joint actions to promote cooperation and networking in research in the field of ESBs and related non-discontinued monitoring of contaminants and pollution effects; these may include many diverse actions from inventories, technical workshops, research projects, education and outreach.

5) Excused (not attending) participants (Munro-Jenssen, Halldorsson, Lehtonen, Brooks) second this statement as co-authors and are willing to participate in prospective actions that might arise from the present meeting-workshop.

3. Next steps

- Prepare minutes before mid June (Manu)
- Circulate a working document before late June (Ionan).
- Amendments and comments to the statement be done by July 12th (all).
- Send the final statement to GRACE by July 17th (all)
- Proposals for joint actions to promote cooperation and networking (all)

Stockholm, June 3rd 2019.

Ionan Marigómez
BBEBB- PiE-UPV/EHU; Plentzia-Basque Country; http://www.ehu.eus/PIE/
GRACE Research Project; https://www.grace-oil-project.eu/en-US/

3. Statement

(next page).

4. References

MARIGOMEZ I, LEKUBE X. 2017. Environmental Specimen Banks: Sample and Data Inventory in Marine Areas of Arctic and Sub-Arctic Regions. Deliverable GRACE D3.4 (31/08/2017), 14 pp Report + Inventory ESB GRACE 2017.xls

ESBs AS TOOLS FOR IMPACT MONITORING AND ASSESSMENT AFTER OIL SPILLS IN ICE SEAS

ESBs and related non-discontinued monitoring of contaminants and pollution effects are invaluable supporting tools for managing oil spills and oil spill responses in ice seas, especially in a predicted scenario of intensified maritime traffic and other human activities as a result of global climate change.

For an effective application of these tools, research, training and education are essential, and the following priorities have been identified:

- Promote the use of existing resources regarding the ESBs and marine pollution monitoring programmes in the North Atlantic and the Arctic.
- Identify reliable and realistic measurements and suitable type of specimens.
- Enhance the knowledge of ice seas biology (and natural variability) and understanding of the biological effects of pollution in the region in order to design ad hoc biomonitoring programmes.
- Identification of the sources of pollution and locally relevant pollutants fingerprints of regional relevance (not only oil spill effects).
- Promote methods standardization and QA procedures for both banking and monitoring.
- Promotion of researcher careers (postgraduate and doctoral studies) and training (courses, technical workshops).
- Outreach towards stakeholders and citizens; including environmental awareness.

Stockholm, June 3rd 2019

IESB-GRACE Meeting-Workshop

Sara Danielson (Swedish Museum of Natural History; Stockholm)
Jan Koschorreck (German Environment Agency; Berlin)
Daryl J McGoldrick (Environment & Climate Change Canada & Canadian ESB; Ottawa)
Katrin Vorkamp (Arctic Research Centre, Aarhus Univ & Denmark ESB; Aarhus)
Morten Jartun (Norwegian Environmental Specimen Bank - NIVA; Oslo)
Bjorn Munro Jensen (NTNU; Trondheim)
Halldor P Halldorsson (Univ Iceland, Reykjavík)
Kari Lehtonen (SYKE, Helsinki)
Steven Brooks (NIVA; Oslo)
Manu Soto (BBEBB- PiE-UPV/EHU; Plentzia-Basque Country)
Urtzi Izagirre (BBEBB- PiE-UPV/EHU; Plentzia-Basque Country)
Xabi Lekube (BBEBB- PiE-UPV/EHU; Plentzia-Basque Country)
Ionan Marigómez (BBEBB- PiE-UPV/EHU; Plentzia-Basque Country)