

SEVENTH FRAMEWORK PROGRAMME THEME 7 Environment

Collaborative project (Large-scale Integrating Project)

Project no: 246 933

Project Acronym: EURO-BASIN

Project title: European Basin-scale Analysis, Synthesis and Integration

**Deliverable 1.11 Second Data Management Report**

Contributors: Stephane Pesant, MARUM

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Project Coordinator: Michael St John, DTU Aqua

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Theme 6 Environment

Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission)	
RE	Restricted to a group specified by the consortium (including the Commission)	
CO	Confidential, only for members of the consortium (including the Commission)	

## Deliverable 1.11 essentially overlaps with Month 36 Second Periodic Report

Report

### 2.1 WP1 Data Management

WP Leaders: Stéphane Pesant (UniHB)

Partners: UniHB, DTU-Aqua, NERC\_NOCS, MRI-HAFRO, IMR, SAHFOS, CNRS, CLS, UPMC

**US/CANADA Collaborators:** NMFS-COPEPOD, WHOI, DFO, NOAA

#### 2.1 Scientific Highlights

The main objective of WP1 is to consolidate and integrate historical and recent data about (i) biogeochemical rates mediated by plankton, (ii) the biogeography of key plankton species, and (iii) estimates of the size, structure, biomass and diet of key fish stocks in the North Atlantic Ocean. **This objective was completed as part of Tasks 1.3 and contributes to improve the parameterization and validation of basin-scale models (WP6).**

The method proposed by WP1 to integrate and disseminate scientific outputs was to publish data compilations in open access at PANGAEA and to describe them in details (harmonisation methods, caveats and usefulness) as part of a EURO-BASIN special issue in the peer-reviewed journal Earth System Science Data (ESSD). **This method was successfully implemented as part of Tasks 1.4-1.5.**

The EURO-BASIN special issue in ESSD was carefully designed to complement another recent ESSD special issue about Global distributions of Plankton Functional Types ([http://www.earth-syst-sci-data-discuss.net/special\\_issue9.html](http://www.earth-syst-sci-data-discuss.net/special_issue9.html)). **Data compilations from both special issues are archived in open access at PANGAEA and are relevant to basin-scale modeling activities for the North Atlantic.**

#### 2.2 Progress towards objectives (by task)

##### **Task 1.1 Data integration**

Responsible: UNI-HB (Stéphane Pesant)

Start: Month 1; End Month 48.

The methods proposed by EURO-BASIN to integrate scientific data were to (i) archive data in a relational database (PANGAEA) and (ii) publish them in the

online peer-reviewed journal Earth System Science Data (ESSD). A special issue entitled “EURO-BASIN data compilations for an integrated analysis of living resources in the North Atlantic Ocean (Editors: G. Melvin and Y.-W. Luo)” was organised jointly between ESSD and PANGAEA. Eight manuscripts have now been submitted to the special issue, covering (i) biogeochemical rates mediated by plankton, (ii) the biogeography of key plankton species, and (iii) estimates of the size, structure, biomass and diet of key fish stocks in the North Atlantic Ocean. ESSD publications are listed in Appendix I and their corresponding open access data compilations are listed in Appendix II. We added in Appendix I a letter from Copernicus (publisher of ESSD), confirming the status of the eight manuscripts.

### **Task 1.2 Data Management: Networking**

Responsible: UNI-HB (Stéphane Pesant)

Start: Month 1; End Month 36.

**Task 1.2.1** Data Management Advisory Group including US and Canada

**Task 1.2.2** Access and assemble data holdings from permanent archives

**Task 1.2.3** Maintain and develop, as needed the database infrastructure

The three sub-tasks are completed. Task 1.2 was essential to support the work of partners involved in Task 1.3 in order to compile and harmonise historical data. The advisory group will still be involved, beyond the completion of its task, in planning the second phase of EURO-BASIN.

### **Task 1.3 Data Management: Archaeology**

Responsible: UNI-HB (Stéphane Pesant, Janine Felden)

Start: Month 4; End Month 16.

This task involves eight sub-tasks, each with one deliverable. At the time of the last periodic report (month 18), all sub-tasks showed significant delay due to the extensive amount of work involved. All corresponding deliverables (D1.1-D1.8) were submitted on month 25 even though several were still incomplete. Reviewers were thereby informed of progress made so far and could formulate recommendations. Following their review (month 26), three deliverables were accepted (D1.1, D1.4 and D1.7), three were pending revisions (D1.2, D1.5 and D1.6) and two were rejected (D1.3 and D1.8).

With the exception of Task 1.3.5 (D1.5) which is still in progress, all sub-tasks are now completed and the deliverables have been revised and delivered. Each revised deliverable consists in a manuscript submitted to ESSD, which describes in details the data compiled as part of Tasks 1.3.1-1.3.8 and published in open access at PANGAEA (see Summary Table 1 in Deliverable progress). We address here the comments of the reviewers (**month 26**) regarding each sub-task/deliverable of Task 1.3:

**Task 1.3.1 (D1.1)** Consolidate historical data on rates of particulate matter downward flux. NERC (Martin, Poulton, Daniels, Torres-Valdes)

**Status (month 26) was “delivered and accepted”**

No additional comment.

**Task 1.3.2 (D1.2)** Consolidate recent data on plankton biogeography (including near surface distribution of key jellyfish species) and meso-to-basin-scale processes in the North Atlantic Ocean and Self Seas. SAHFOS (Castellani)

**Status (month 26) was “delivered, pending revisions”**

**Current status (month 36) is “revised and delivered”**

Reviewers noted that “The report contains only jellyfish data and no other biogeographic plankton data at different scales”. This is indeed true. During the first annual meeting, it was proposed to reorganise the work planned in Tasks 1.3.2 and 1.3.3 in order to match the breakdown of manuscripts for the EURO-BASIN special issue in ESSD. As a consequence, the compilation of “plankton biogeographic data” was moved from Task 1.3.2 to Task 1.3.3. Since this modification did not change the proposed work, only its presentation, we did not see the need to modify the DoW. The re-submitted version of D1.2 corresponds to the ESSD manuscript entitled “Biogeography of jellyfish in the North Atlantic, by traditional and genomic methods”. We apologise for the confusion.

**Task 1.3.3 (D1.3)** Consolidate historical data on abundance of key zooplankton species. DTU-AQUA (Nielsen)

**Status (month 26) was “delivered, rejected, pending revisions”**

**Current status (month 36) is “revised and delivered”**

Reviewers noted that “The work presented has nothing to do with a consolidation of historical data at decadal time scales (as envisioned in DoW), but presents data rescue for two sampling sites and two short periods”. The deliverable was indeed largely incomplete and has been corrected accordingly. The re-submitted version of D1.3 corresponds to the ESSD manuscript entitled “Biogeography of key mesozooplankton species in the North Atlantic, by manual counting Methods”.

**Task 1.3.4** Rescue historical data with respect to abundance and biomass of plankton and fish in the North Atlantic. UNI-HB (Pesant); VLIZ (Vandepitte)

**Status (month 26) was “delivered & accepted”**

No additional comment.

**Task 1.3.5 (D1.5)** Rescue historical data on abundance, size-spectra, biovolume and provide estimates of biomass for key zooplankton groups. CNRS (Stemmann) & MRI-HAFRO (Gisslasson)

**Status (month 26) was “delivered & pending revisions”**

**Current status (month 36) is “pending revisions” until June 2014**

Reviewers noted that “Here very good work was performed for the Norwegian Sea, however the geographical coverage is for the moment limited to the Norwegian Sea only and thus does not yet fully comply with the DoW”. The task is a joint responsibility of MRI-HAFRO and CNRS. The deliverable submitted at month 25 included only data from MRI, while CNRS is responsible for collating data from European, Canadian and USA labs that used the ZOOSCAN method to process samples from the North Atlantic

Ocean. The revised version of D1.5 will correspond to an ESSD manuscript that presents a compilation of abundance, size-spectra, biovolume and biomass for key zooplankton groups. Unfortunately, this work is showing delays and we expect the manuscript (and hence D1.5) to be submitted in June 2014 (see Section 3 Deviations & Problems)

**Task 1.3.6 (D1.6)** Rescue historical data on catch and effort of North Atlantic fisheries. UNI-HB (Pesant); ICES (Holdsworth)

**Status (month 26) was “delivered & pending revisions”**

**Current status (month 36) is “revised and delivered”**

Reviewers noted that the deliverable “is rather a consolidation activity than a rescue activity focusing on adding new data recovered from published reports, presumably old and not readily available”. The task was indeed modified during the first annual meeting of EURO-BASIN in order to better address the needs of WP5. ICES provided at that time an overview of old published reports that are not yet available in digital format, but these no longer met the needs of WP5. Rather than digitising old reports, ICES was asked to consolidate data on catch and effort of North Atlantic fisheries. The re-submitted version of D1.6 includes a note explaining this change. Data from D1.6 is published along with data from D1.8 in the ESSD manuscript entitled “Spatially explicit estimates of stocks sizes, structure and biomass of Herring, blue Whiting and Mackerel.”

**Task 1.3.7** Consolidate historical data to provide spatially explicit estimates of stocks sizes, structure, biomass and diet of Tuna in the North Atlantic. CLS (Senina, Lehodey); DTU-AQUA and MRI-HAFRO

**Status (month 26) was “delivered & accepted”**

No additional comment.

**Task 1.3.8 (D1.8)** Consolidate historical data to provide spatially explicit estimates of stocks sizes, structure, biomass and diet of Herring, blue Whiting and Mackerel in the North Atlantic. IMR (Melle, Nøttestad); IFREMER, CEFAS, IMI, MRI-HAFRO, AZTI

**Status (month 26) was “delivered, rejected, pending revisions”**

**Current status (month 36) is “revised and delivered”**

Reviewers noted that “It is unclear where the consolidation work is done as it seems that the report contains just an evaluation of trends based on data extracted from ICES databases and no other databases specified in the task are mentioned”. The deliverable was indeed largely incomplete and has been corrected accordingly to include trawl and acoustics data from ICES, IFREMER, CEFAS, IMI and MRI-HAFRO. The re-submitted version of D1.8 corresponds to the ESSD manuscript entitled “Spatially explicit estimates of stocks sizes, structure and biomass of herring and blue whiting, and catch data of bluefin tuna.”

**Further comments from reviewers:**

Reviewers noted that the approval of deliverables (both in content and format) by modellers (WP6) is essential. This is indeed a good suggestion and it was decided at the last annual meeting that WP6 Leader (Icarus Allen) will contribute to the introduction paper of the EURO-BASIN special issue in ESSD, thus including an assessment of the usefulness of data compilations conducted as part of Task 1.3. Nevertheless, we wish to specify that data from Task 1.3 (except D1.5) are already archived at PANGAEA in a format that can be easily used by modellers.

Reviewers noted that data deposition in PANGAEA and Genbank is warranted. Indeed, all data from Task 1.3 are archived/ published at PANGAEA and at Genbank/ENA in the case of jellyfish genomic sequences.

#### ***Task 1.4 Data Management: Safeguarding***

Responsible: UNI-HB (Stéphane Pesant, Janine Felden);

Start: Month 1; End Month 48

***Task 1.4.1*** Define ontologies and standard vocabularies required to harmonise data

This task is part of standard services provided by PANGAEA during data archiving.

***Task 1.4.2*** Quality check, harmonise and archive historical data from T1.3

The full citations of data compilations published at PANGAEA are listed in Appendix II. In most cases, data compilations result from the harmonisation of several source datasets from the literature, most of which were not yet archived in a database. All source datasets that were harmonised as part of T1.3 and published at PANGAEA are listed in Appendix III. By archiving source datasets individually in addition to the data compilation, we ensure that scientists who collected/generated source data get proper citations and bibliometrics from data archaeology.

***Task 1.4.3*** Quality check, harmonise and archived experimental and observational data

This task is progressing well given the time frame generally required to analyse and quality check field data. Cruise reports and lists of sampling activities have been delivered for all cruises led by EURO-BASIN partners. So far, 13 datasets from EURO-BASIN cruises and mesocosm experiments have been submitted and published at PANGAEA (see Appendix IV). The progress of this task has improved considerably following the 2013 annual meeting and will require strong encouragements from the project coordinator. In any case, it is customary for PANGAEA to archive cruise data beyond the duration of a project.



**Task 1.4.4** Quality check and archive key ecosystem parameters and proxies for fisheries management generated by meta-analyses and modelling.

Key ecosystem parameters and proxies for fisheries management will be submitted to and archived at PANGAEA as soon as meta-analyses and modelling runs are completed by WP6. We propose to publish a detailed description of these parameters and proxies in the ESSD special issue in June 2014.

**Task 1.5 Data Management: Publishing & Dissemination**

Responsible: UNI-HB (Stéphane Pesant, Janine Felden);

Start: Month 4; End Month 48

**Task 1.5.1** Publish data that were archived as part of T1.4.2 to T1.4.4 into the digital library of PANGAEA® to ensure dissemination to EURO-BASIN partners (T1.5.2) and to the wider public (T1.5.3)

**Task 1.5.2** Disseminate harmonised data from T1.5.1 to partners of EURO-BASIN and relevant partners in U.S.A. and Canada, using password protected access to PANGAEA® data warehouse.

**Task 1.5.3** Disseminate EURO-BASIN metadata and datasets to the wider community, using google-like information systems PANGAEA® (environmental, biogeochemical and trophic data), OBIS (presence/absence data), NMFS-COPEPOD (zooplankton data) and MegX (genomics).

This task is part of standard services provided by PANGAEA following data archiving. Each data publication is attributed a full citation and registered with a Digital Object Identifier (doi), which facilitates its discovery and dissemination. In the case of EURO-BASIN, costs for data publication and dissemination were subsumed in the salary of the data curator (FELDEN). In future projects, these costs will be budgeted separately to provide a metric of open access costs.

All data publications from EURO-BASIN can be discovered using PANGAEA's "google-like" portal and extracted using PANGAEA's data warehouse at the following URL: <http://www.pangaea.de/search?All&q=euro-basin>

## 2.3 Deliverable progress

**D1.1-D1.8** With the exception of D1.5 which is still in preparation, all “data archaeology” deliverables have been revised and submitted. Each revised deliverable consists in a manuscript submitted to ESSD, which describes in details the data compiled as part of Tasks 1.3.1-1.3.8 and published in Open Access (OA) at PANGAEA (Table 1).

**Table 1. Progress of deliverables from Task 1.3 Data Archaeology.**

TASK	Status of related Deliverable (EC)	Status of related data Publication (PANGAEA)	Status of related paper Publication (ESSD)
T1.3.1	D1.1 - Accepted	Published in OA	Manuscript submitted
T1.3.2	D1.2 - Delivered	Published in OA	Manuscript submitted
T1.3.3	D1.3 - Delivered	Published in OA	Manuscript submitted
T1.3.4	D1.4 - Accepted		
T1.3.5	D1.5 - Pending	In preparation	Manuscript in prep.
T1.3.7	D1.7 - Accepted	Published in OA	Manuscript submitted
T1.3.6	D1.6 - Delivered	Published in OA	Manuscript submitted
T1.3.8	D1.8 – Delivered		

**D1.9** The “First data management & integration report” was delivered in 2012 and accepted.

**D1.10** Following a first submission in 2013, reviewers proposed to “postpone the evaluation of this deliverable until the manuscripts are submitted”. The deliverable “Submission of data manuscripts to ESSD” was revised and delivered.

**D1.11** The “Second year data management & integration report” is delivered. In response to the reviewers’ comments about the first year report, this report (D1.11) explains “content related deviations in the deliverables with respect to the DOW”. **Please note that D1.11 is identical to the present WP1 report.**

**D1.12** This deliverable is the “Submission of data manuscripts to a second ESSD special issue”. We propose a deviation in the content of the deliverable (see details in Section 3) and a delay of 2 months in the delivery of D1.12, i.e. month 42 instead of month 40.



### SECTION 3: Deviations & Problems:

<b>DEVIATION&amp; PROBLEMS</b>	<b>CORRECTIVE ACTION</b>	<b>IMPACT on other tasks</b>
<p><b>Task 1.3.5 (Deliverable 1.5)</b> Rescue historical data on abundance, size-spectra, biovolume and provide estimates of biomass for key zooplankton groups. Responsible: CNRS (Lars Stemmann)</p> <p>CNRS is responsible for collating data from European, Canadian and USA labs that used the ZOOSCAN method to process samples from the North Atlantic Ocean. This is a lengthy process. The deliverable is very late and is expected to be completed in June 2014.</p>	<p>Progress is closely monitored by PESANT</p> <p>We propose to publish this data compilation in ESSD as part of a second wave of submission (see corrective actions below for D1.12)</p>	<p>None</p>
<p><b>Deliverable 1.12</b> Submission of data manuscripts to a second ESSD special issue</p> <p>The plan for the second special issue was to compile data from all EURO-BASIN cruises into manuscripts that are specific to certain types of data (e.g. biogeochemistry, phytoplankton, grazing, etc), so to have basin scale estimates using comparable methods.</p> <p>Given that we have only very recently completed the submission of manuscripts to the “first ESSD special issue” it is not realistic from the point of view of ESSD editors to organise a second special issue while the first special issue is not yet completed. From the point of view of EURO-BASIN’s progress in submitting cruise data (Task 1.4.3), it is not realistic to expect the preparation of a second special issue before the end of the project.</p>	<p>We propose to merge the first and second ESSD special issues. A second wave of manuscripts will be submitted to ESSD. We propose to delay the delivery date from month 40 to month 42 (June 2014).</p> <p>Candidate manuscripts are:</p> <ol style="list-style-type: none"> <li>1. Overview of special issue, incl. assessment of data compilations by WP6</li> <li>2. Biogeography of key zooplankton groups in the North Atlantic, by semi-automated optical methods</li> <li>3. Grazing rate experiments from all EURO-BASIN cruises</li> <li>4. Key metrics for ecosystem functioning and key indicators/proxies for fisheries management emerging from basin scale models</li> </ol>	<p>None</p>

## Appendixes

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## Appendix I - Manuscripts published in ESSD from Task 1.1 Data Integration

1. Le Moigne, Frédéric AC; Henson, Stephanie A; Sanders, Richard J; Madsen, Esben (2013) **Global database of surface ocean particulate organic carbon export fluxes diagnosed from the 234Th technique.** [Earth System Science Data, 5, 295-304, doi:10.5194/essd-5-295-2013](#)
2. Torres-Valdes, Sinhue; Painter, Stuart; Martin, Adrian; Sanders, Richard J; Felden, Janine (2013) **Fluxes of sedimenting material from sediment traps in the Atlantic Ocean.** [Earth System Science Data Discussion, 6, 541-595, doi:10.5194/essdd-6-541-2013](#)
3. Sailley, Sevrine; Rivkin, Richard; Buitenhuis, Erik (2014) **Microzooplankton functional responses in the lab and in the field.** Earth System Science Data Discussion (submitted)
4. Licandro, Priscilla (2014) **Biogeography of jellyfish in the North Atlantic, by traditional and genomic methods.** Earth System Science Data Discussion (submitted)
5. Webjørn Melle, Jeffrey A. Runge, Erica Head, Stéphane Plourde, Claudia Castellani, Priscilla Licandro, James Pierson, Sigrun H. Jonasdottir, Catherine Johnson, Cecilie Broms, Høgni Debes, Tone Falkenhaus, Eilif Gaard, Astthor Gislason, Michael R. Heath, Barbara Niehoff, Torkel Gissel Nielsen, Pierre Pepin, Erling Kaare Stenevik, Guillem Chust (2014) **Biogeography of key mesozooplankton species in the North Atlantic, by manual counting Methods.** Earth System Science Data Discussion (submitted)
6. Geir Huse, Brian MacKenzie, Verena Trenkel, Leif Nøttestad, Gudmundur Oskarsson (2014) **Spatially explicit estimates of stocks sizes, structure and biomass of herring and blue whiting, and catch data of bluefin tuna.** Earth System Science Data Discussion (submitted)
7. Patrick Lehodey, Haritz Arrizabalaga (2014) **Spatially explicit estimates of stocks sizes, structure and biomass of Albacore Tuna.** Earth System Science Data Discussion (submitted)
8. John K. Pinnegar, Verena M. Trenkel, Nicholas Goni, Haritz Arrizabalaga, Webjørn Melle, James Keating, Guðmundur Óskarsson (2014) **Stomach contents of herring, blue whiting, mackerel, albacore and bluefin tuna in the North Atlantic - outputs from an integrated database.** Earth System Science Data Discussion. (submitted)

## ESSD - EURO-BASIN data compilations for an integrated analysis of living resources in the North Atlantic Ocean

The following table shows all manuscripts submitted to the special issue until 11 February 2014.

<p>essd-2013-7 Submitted on 15 Mar 2013</p> <p>Title: Global Database of Surface Ocean Particulate Organic Carbon Export Fluxes Diagnosed from the 234Th technique Authors: F.A.C. Le Moigne, S.A. Henson, R.J. Sanders, and E. Madsen</p> <p>Handling Topical Editor: Dr. Robert Key, key@princeton.edu Status: Published (ESSD)</p>
<p>essd-2013-23 Submitted on 14 Aug 2013</p> <p>Title: Fluxes of Sedimenting Material from Sediment Traps in the Atlantic Ocean Authors: S. Torres Valdés, S. C. Painter, A. P. Martin, R. Sanders, and J. Felden</p> <p>Handling Topical Editor: Ya-Wei Luo, ywluo@xmu.edu.cn Status: Referee Acceptance (ESSD) Iteration: Revised Submission</p>
<p>essd-2014-1 Submitted on 09 Jan 2014</p> <p>Title: A new compilation of stomach content data for commercially-important pelagic fish species in the Northeast Atlantic. Authors: J.K. Pinnegar, N. Goñi, V.M. Trenkel, H. Arrizabalaga, W. Melle, J. Keating, and G. Óskarsson</p> <p>Handling Topical Editor: Dr Gary Melvin, gary.melvin@dfo-mpo.gc.ca Status: File Upload (ESSD Discussions) Iteration: Minor Revision</p>

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<p>essd-2014-3 Submitted on 31 Jan 2014</p> <p>Title: Microzooplankton functional responses in the lab and in the field Authors: S.F. Sailley and E.T. Buitenhuis</p> <p>Handling Topical Editor: Ya-Wei Luo, ywluo@xmu.edu.cn Status: Initial Topical Editor Decision (ESSD Discussions) Iteration: Initial Submission</p>
<p>essd-2014-4 Submitted on 04 Feb 2014</p> <p>Title: Biogeography of key mesozooplankton species in the North Atlantic, by manual counting methods, and egg production of <i>Calanus finmarchicus</i> Authors: W. Melle, J. A. Runge, E. Head, S. Plourde, C. Castellani, P. Licandro, J. Pierson, S. H. Jonasdottir, C. Johnson, C. Broms, H. Debes, T. Falkenhaus, E. Gaard, A. Gislason, M. R. Heath, B. Niehoff, T. G. Nielsen, P. Pepin, E. K. Stenevik, and G. Chust</p> <p>Handling Topical Editor: Ya-Wei Luo, ywluo@xmu.edu.cn Status: File Upload (ESSD Discussions) Iteration: Minor Revision</p>
<p>essd-2014-5 Submitted on 04 Feb 2014</p> <p>Title: Spatially explicit estimates of stocks sizes, structure and biomass of herring and blue whiting, and catch data of bluefin tuna Authors: G. Huse, B. MacKenzie, V. Trenkel, M. Doray, L. Nøttestad, and G. Oskarsson</p> <p>Handling Topical Editor: Dr Gary Melvin, gary.melvin@dfo-mpo.gc.ca Status: Initial Topical Editor Decision (ESSD Discussions) Iteration: Initial Submission</p>
<p>essd-2014-6 Submitted on 05 Feb 2014</p> <p>Title: Spatially explicit estimates of stock size, structure and biomass of North Atlantic albacore Tuna (<i>Thunnus alalunga</i>)</p>

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Authors: P. Lehodey, I. Senina, A-C. Dragon, and H. Arrizabalaga

Handling Topical Editor: Dr Gary Melvin, [gary.melvin@dfo-mpo.gc.ca](mailto:gary.melvin@dfo-mpo.gc.ca)

Status: Initial Topical Editor Decision (ESSD Discussions)

Iteration: Initial Submission

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## Appendix II - DATA COMPILATIONS published at PANGAEA from Task 1.4.2 Quality check and harmonise historical data

1. Belail, Robert; Leaute, Jean-Pierre; Mahe, Jean-Claude; Pawlowski, Lione; Poulard, Jean-Charles; Salaun, Michèle; Trenkel, Verena (2013): Survey bottom trawl data of *Micromesistius poutassou* (blue whiting) in Bay of Biscay and Celtic Sea from the EVHOE time series (1997-2011). Institut français de recherche pour l'exploitation de la mer, doi:10.1594/PANGAEA.817175
2. Castellani, Claudia; Licandro, Priscilla (2013): Spatial distribution of key zooplankton species using continuous plankton recorder (CPR) data from the North Atlantic (2000-2009). doi:10.1594/PANGAEA.824423
3. Doray, Mathieu; Massé, Jacques; Bellois, Pierre; Duhamel, Erwan (2013): *Micromesistius poutassou* (blue whiting) abundance and biomass data in Bay of Biscay estimated from acoustic surveys (2000-2012). Institut français de recherche pour l'exploitation de la mer, doi:10.1594/PANGAEA.819117
4. Goñi, Nicolas (2014): Stomach content records of albacore (*Thunnus alalunga*) and bluefin tuna (*Thunnus thynnus*) in the North Atlantic Drift Region focusing on the Bay of Biscay between 2004 and 2011. doi:10.1594/PANGAEA.826992
5. Huse, Geir (2014): Spatially explicit estimates of length and biomass of *Clupea harengus* (Norwegian spring spawning herring) from acoustic and trawl surveys in the North-East Atlantic in May 2004. Institute of Marine Research, Bergen, doi:10.1594/PANGAEA.827190
6. Huse, Geir (2014): Spatially explicit estimates of length and biomass of *Clupea harengus* (Norwegian spring spawning herring) from acoustic and trawl surveys in the North-East Atlantic in May 2005. Institute of Marine Research, Bergen, doi:10.1594/PANGAEA.827191
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## Appendix IV - Datasets published at PANGAEA from Task 1.4.3 Quality check and harmonise experimental and observational data

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