

Agenda Item 6.2

Project Funding through ASCOBANS

Prioritization of Project Proposals and Other  
Activities

Document 6.2.a

## Project Proposals Received for Future Funding

### Action Requested

- Review proposals
- Take note of the results of the rating undertaken in advance of the meeting, to be presented by the Secretariat at AC20
- Provide advice to Institutional Session for overall priority rating of internal and external projects and activities

Submitted by

Secretariat



**NOTE:  
DELEGATES ARE KINDLY REMINDED TO BRING THEIR OWN COPIES OF DOCUMENTS  
TO THE MEETING**



## Project Proposals Received for Future Funding

1. Following a call for project proposals issued to ASCOBANS Parties and partner organizations in January 2013, the attached funding applications were received by the Secretariat.
2. In line with the wishes of the Advisory Committee, the Secretariat compiled all proposals received by the deadline (15 July) into this document and made them available to Parties and Partners for their consideration and rating. For the rating, an [online survey](#) has been created in the ASCOBANS Advisory Committee Workspace. The guidelines specify that only projects with a direct benefit for the conservation objectives of the Agreement can be supported. Projects covering more than one ASCOBANS Party should be favoured.
3. As in past years, each country or observer organization represented on the 20<sup>th</sup> Advisory Committee Meeting should only fill in the questionnaire once. Therefore, please consult within your delegation and then assign one user to communicate your overall ranking to us. Also, please note that you should not evaluate any proposals that were submitted by an organization you are affiliated with.
4. All valid responses will be analysed in advance of the AC20 Meeting and we will present the resulting ranking to the meeting.
5. A tabular overview of the nine proposals received, numbered in no particular order, can be found below. The detailed proposals and CVs of researchers, if provided, are attached in the annexes to this document.

Annex	Title	Applicant	Funding Requested
1	Mapping small cetacean mortality by analyzing the drift of stranded carcasses	Vincent Ridoux / Observatoire <i>PELAGIS</i>	15,000 EUR
2	Distribution, habitat use and health status of harbour porpoises ( <i>Phocoena phocoena</i> ) in the Elbe and Weser rivers	Denise Wenger / Society for Dolphin Conservation & Ursula Siebert / ITAW	14,950 EUR
3	Did you know? All about the harbour porpoise. An education kit for a species in danger.	Annika Winter / WDC	9,300 EUR
4	A Pilot Study for Long-term Acoustic Monitoring of the Baltic and Danish Harbour Porpoises (LAMBADAH)	Julia Carlström / AquaBiota Water Research	15,000 EUR
5	Preparation for SCANS-III	Claire Lacey / SMRU, University of St. Andrews	15,000 EUR
6	Conservation of a small population in a big scenario: An integrative approach to understand the status of the bottlenose dolphin from the Sado estuary (Portugal)	Inês Carvalho / Instituto Gulbenkian Ciência	15,000 EUR
7	The Value of Citizen Science to assess the relative abundance and distribution of small cetaceans in the ASCOBANS region	Sally Hamilton / ORCA	14,740 EUR
8	Factors affecting the abundance and distribution of harbour porpoises in the German Baltic Sea	Ursula Verfuss & Cormac Booth / SMRU Marine Ltd.	14,998 EUR
9	Effects of underwater explosions on habitat use of porpoises and research on bottom-set gill net exclusion zones	Ursula Siebert & Michael Dähne / ITAW	14,708 EUR

## ASCOBANS Project Proposal Format 2013

### FORMAT FOR PROJECT PROPOSALS FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee at its next meeting, foreseen for autumn of 2013, will consider the proposals made available to its review and select those that are a priority for funding. Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported. Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received by 15 July 2013 will be made available to the Committee for their review. Funding applications received later will not be considered. Please submit your proposal in Word format.

Title: <b>CETACEANS ADRIFT</b> Mapping small cetacean mortality by analyzing the drift of stranded carcasses	Justification: Conservation and Management Plan Res.6.1 (esp. North Sea Plan)	Project ID: 2013/01
Implementing Agency / Applicant	Observatoire <i>PELAGIS</i> , UMS 3462, University of La Rochelle/CNRS 5, allées de l'océan 17000 LA ROCHELLE, FRANCE  Pr Vincent RIDOUX  <a href="mailto:vridoux@univ-lr.fr">vridoux@univ-lr.fr</a>	

## ASCOBANS Project Proposal Format 2013

Collaborating Agencies / Other Sponsors	<p>Dr Helene PELTIER Observatoire <i>PELAGIS</i>, UMS 3462, University of La Rochelle/CNRS 5, allées de l'océan 17000 LA ROCHELLE, FRANCE <a href="mailto:hpeltier@univ-lr.fr">hpeltier@univ-lr.fr</a></p> <p>French Ministry in charge of Environment Grande Arche Tour Pascal A et B 92055 PARIS-LA-DEFENSE Cedex, FRANCE</p> <p>Dr Paul D. JEPSON Institute of Zoology, Zoological Society of London Regent's park London NW1 4RY, UNITED KINGDOM <a href="mailto:paul.jepson@ioz.ac.uk">paul.jepson@ioz.ac.uk</a></p> <p>Rob DEAVILLE Institute of Zoology, Zoological Society of London Regent's park London NW1 4RY, UNITED KINGDOM <a href="mailto:Rob.Deaville@ioz.ac.uk">Rob.Deaville@ioz.ac.uk</a></p> <p>Dr Jan HAELTERS Management Unit of the North Sea Mathematical Models Royal Belgian Institute of Natural Sciences Oostende, BELGIUM <a href="mailto:j.haelters@mumm.ac.be">j.haelters@mumm.ac.be</a></p> <p>Pr Ursula SIEBERT Institute for Terrestrial and Aquatic Wildlife Research of the University of Veterinary Medicine Hannover, GERMANY <a href="mailto:Ursula.Siebert@tiho-hannover.de">Ursula.Siebert@tiho-hannover.de</a></p> <p>Dr Andrea GRÖNE Department of Pathobiology Utrecht University Yalelaan 1 3584 CL Utrecht, THE NETHERLANDS <a href="mailto:A.Grone@uu.nl">A.Grone@uu.nl</a></p> <p>Dr Lasse Fast JENSEN Fisheries and Maritime Museum Esbjerg, DENMARK <a href="mailto:lfj@fimus.dk">lfj@fimus.dk</a></p>
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## ASCOBANS Project Proposal Format 2013

Background / Problem	<p>In the eastern North Atlantic, bycatch in fishing gears is the main cause of death for delphinids and porpoises. Improving knowledge and understanding of interactions between small cetaceans and fisheries ranks high in priorities set by most conservation agreements and fisheries regulations in Europe.</p> <p>A number of international, European Union (EU) and national regulations highly prioritize the assessment of man induced mortality but do not always provide recommended protocols or methods.</p> <p>Accidental causes of death, anthropogenic (bycatch, oil spills, decompression accidents, ship strikes...) or environmental (inter-specific interactions, earthquakes...), are very hard to characterize, mostly because information are collected on carcasses stranded ashore. Mapping location of cetacean death could reveal areas of critical importance for their conservation.</p> <p>For protected species like cetaceans, stranding events are the most important source of biological samples.</p> <p>In this context, improving the representativity of strandings as a source of cetacean population indicators could provide cost-effective information on spatial and temporal dynamics of interactions between small cetaceans and human activities.</p> <p>This project will continue a recent PhD thesis (Peltier 2011) funded by CNRS and the Ministry in charge of the environment and subsequent actions funded by the Endowment Fund for Biodiversity (<a href="http://www.saveyourlogo.org/programmes/dauphin/dauphin-commun-et-marsouin-commun-atlantique/">http://www.saveyourlogo.org/programmes/dauphin/dauphin-commun-et-marsouin-commun-atlantique/</a>) that were aimed at improving the monitoring value of stranding data sets and developing a new interpretation framework (Peltier et al., 2012; Peltier et al., 2013).</p>
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## ASCOBANS Project Proposal Format 2013

Objectives	<p>The aim of this work is to model the back trajectories of small cetaceans found stranded with evidences of human induced mortality, in order to map critical areas of interactions with anthropogenic activities. The correction of these mortality areas by the probability of stranding in the whole ASCOBANS area including its recent extension (Peltier et al., 2013) will provide relative numbers of dead cetaceans at sea, even if they were not found stranded in order to estimate human induced mortality.</p> <p>The ultimate aim of this work is to provide indicators of unusual mortalities for small cetaceans in the North Sea, English Channel and Bay of Biscay in order to identify key areas for future conservation actions. Two case studies will be considered: the small delphinids (common dolphins <i>Delphinus delphis</i>, striped dolphins <i>Stenella coeruleoalba</i>, bottlenose dolphins <i>Tursiops truncatus</i>) and the harbour porpoise (<i>Phocoena phocoena</i>) mostly in relation to by-catch in fisheries and beaked whales (Cuvier's beaked whales <i>Ziphius cavirostris</i>, bottlenose whales <i>Hyperoodon ampullatus</i>, Sowerby's beaked whales <i>Mesoplodon bidens</i>).</p>
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## ASCOBANS Project Proposal Format 2013

Relevance to ASCOBANS	<p>In general, interactions between cetaceans and environmental or anthropogenic disturbances are very difficult to map. Necropsies of stranded carcasses provide relevant information on causes of death, in particular during unusual mortality events. The present project is an original attempt to mapping these pressures. Estimating relative numbers of dead animals at sea would provide new relevant information on small cetacean incidental mortality which constitutes a <b>major concern in ASCOBANS and ongoing resolutions</b>.</p> <p>These indicators relate to actions proposed in <b>the harbour porpoise conservation plan of ASCOBANS</b>. Among twelve indicators dedicated to harbour porpoise conservation, four of them aimed to evaluate the effect of fishery activities on porpoise populations based on data collected on boats and collected in strandings. These indicators would map critical areas for small cetaceans with high level of interactions with human activities: harbour porpoises and small delphinids impacted by fishery activities and beaked whales with specific attention to sound disturbances within <b>ASCOBANS area and its extension</b>.</p> <p>This collaborative work also tests new cartographic indicators as tools for future management strategies, which is very relevant for stakeholders. In this respect, the <b>EU Marine Strategy Framework Directive (MSFD)</b> aims to restore and maintain <b>Good Environmental Status (GES)</b> in European waters. Several descriptors are to be considered, including biodiversity and the impact of anthropogenic activities. In this context, the use of long term and spatially explicit indicators dedicated to cetaceans could provide relevant information on the spatial patterns of causes of death and their impact on marine populations, to restore Good Environmental Status.</p>
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## ASCOBANS Project Proposal Format 2013

Activities	<p>This study will be carried out collaboratively with experts from several European countries: Great-Britain, Denmark, Germany, the Netherlands, Belgium and France that are ASCOBANS member states. Previous collaborative work on porpoise strandings across Europe highlighted the relevance of working at large regional scale and ensured good scientific relationships (Peltier et al, 2013).</p> <p>The first step will be to predict the back trajectories of stranded small cetaceans along the coasts of the Bay of Biscay, Channel and the North Sea coasts. We will therefore delineate areas at sea with specific interactions between small cetaceans and human activities. Data compilation and trajectory modeling will require four months.</p> <p>Then these areas will be corrected by the probability that a cetacean dying in the ASCOBANS area drift, reach the coast and get stranded. This will provide distribution of dead cetaceans inferred from strandings and irrespective of drift conditions, whether or not cetaceans are found stranded. These analyses will also provide time series of dead small cetacean relative numbers, for the main anthropogenic cause of death from 1990 to 2012. This step should be realized in two months.</p> <p>These indicators will provide cartographic and numerical indicators of the impact of human activities on small cetaceans in the whole ASCOBANS area and its extension. The indicator development will require two months.</p> <p>The scientific valorization of the project through reports and publications will need four months.</p>
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## ASCOBANS Project Proposal Format 2013

Outputs	<p>The project outcomes will be presented in a final report associated with interpretation guidelines. These results will be presented at international conference (e.g. European Cetacean Society annual meeting) following the end of the work plan and subsequently submitted for publication in an international peer reviewed journal. Dissemination towards relevant conservation and management bodies and stakeholders will be ensured by appropriate means, yet to be identified collaboratively.</p> <p>The scientific validation and valorization will be obtained through publications in peer-reviewed international journals.</p> <p>Publication 1: Subject: Mapping mortality areas of beaked whales in eastern North Atlantic over the period 1990-2012 with special attention to unusual mortality events.</p> <p>Publication 2: Cause specific mortality areas inferred from strandings of small cetaceans (harbour porpoises and delphinids) in the eastern North Atlantic over the period 1990-2012 and implication for the development of the E.U. Marine Strategy Framework Directive.</p>																		
Work Plan and Timetable	<p>The project will be carried out over one year. (September 2013 to September 2014)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Task</th> <th>Duration</th> <th>Date of beginning</th> </tr> </thead> <tbody> <tr> <td>Data compilation and first analyses</td> <td>1 month</td> <td>September 2013</td> </tr> <tr> <td>Trajectory modelling</td> <td>3 months</td> <td>October 2013</td> </tr> <tr> <td>Trajectory spatial and temporal analyses</td> <td>2 months</td> <td>January 2014</td> </tr> <tr> <td>Indicator development</td> <td>2 months</td> <td>March 2014</td> </tr> <tr> <td>Scientific valorisation</td> <td>4 months</td> <td>May 2014</td> </tr> </tbody> </table>	Task	Duration	Date of beginning	Data compilation and first analyses	1 month	September 2013	Trajectory modelling	3 months	October 2013	Trajectory spatial and temporal analyses	2 months	January 2014	Indicator development	2 months	March 2014	Scientific valorisation	4 months	May 2014
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Scientific valorisation	4 months	May 2014																	

## ASCOBANS Project Proposal Format 2013

Project Personnel	<p><b>Scientific supervision</b> Pr Vincent RIDOUX UMS Pelagis 3462, University of La Rochelle/CNRS 5, allées de l'océan 17000 LA ROCHELLE, FRANCE <a href="mailto:vridoux@univ-lr.fr">vridoux@univ-lr.fr</a></p> <p>Dr Paul D. JEPSON Institute of Zoology, Zoological Society of London Regent's park London NW1 4RY, UNITED KINGDOM <a href="mailto:paul.jepson@ioz.ac.uk">paul.jepson@ioz.ac.uk</a></p> <p><b>Perform Analysis</b></p> <p>Dr Helene PELTIER UMS Pelagis 3462, University of La Rochelle/CNRS 5, allées de l'océan 17000 LA ROCHELLE, FRANCE <a href="mailto:hpeltier@univ-lr.fr">hpeltier@univ-lr.fr</a></p> <p><b>Provide data from ASCOBANS area and its extension</b></p> <p>Rob DEAVILLE Institute of Zoology, Zoological Society of London Regent's park London NW1 4RY, UNITED KINGDOM <a href="mailto:Rob.Deaville@ioz.ac.uk">Rob.Deaville@ioz.ac.uk</a></p> <p>Willy DABIN UMS Pelagis 3462, University of La Rochelle/CNRS 5, allées de l'océan 17000 LA ROCHELLE, FRANCE <a href="mailto:wdabin@univ-lr.fr">wdabin@univ-lr.fr</a></p> <p>Dr Jan HAELTERS Management Unit of the North Sea Mathematical Models Royal Belgian Institute of Natural Sciences Oostende, BELGIUM <a href="mailto:j.haelters@mumm.ac.be">j.haelters@mumm.ac.be</a></p> <p>Pr Ursula SIEBERT Institute for Terrestrial and Aquatic Wildlife Research of the University of Veterinary Medicine Hannover, GERMANY <a href="mailto:Ursula.Siebert@tiho-hannover.de">Ursula.Siebert@tiho-hannover.de</a></p> <p>Dr Andrea GRÖNE Department of Pathobiology Utrecht University Yalelaan 1 3584 CL Utrecht, THE NETHERLANDS <a href="mailto:A.Grone@uu.nl">A.Grone@uu.nl</a></p> <p>Dr Lasse Fast JENSEN Fisheries and Maritime Museum Esbjerg, DENMARK <a href="mailto:lfj@fimus.dk">lfj@fimus.dk</a></p>
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### ASCOBANS Project Proposal Format 2013

Budget Estimates	Nature of funding	Origin of funding	Status	Amount
	Post doc salary	French ministry in charge of Environment	<b>Acquired</b>	25 000 €
	Post doc salary	ASCOBANS funding	Pending	15 000 €
	<b>TOTAL</b>			<b>40 000 €</b>
	The total budget is estimated at 40 000€			

For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org).

REFERENCES

Peltier, H., 2011. Cétacés et changements environnementaux: Développement et tests d'indicateurs d'état de conservation en vue d'établissement de stratégies de surveillance. Université La Rochelle, La Rochelle.

Peltier, H., Baagøe, H.J., Camphuysen, K.C.J., Czeck, R., Dabin, W., Daniel, P., Deaville, R., Haelters, J., Jauniaux, T., Jensen, L.F., Jepson, P.D., Keijl, G.O., Siebert, U., Van Canneyt, O., Ridoux, V., 2013. The Stranding Anomaly as Population Indicator: The Case of Harbour Porpoise *Phocoena phocoena* in North-Western Europe. Plos One 8, e62180.

Peltier, H., Dabin, W., Daniel, P., Van Canneyt, O., Dorémus, G., Huon, M., Ridoux, V., 2012. The significance of stranding data as indicators of cetacean populations at sea: Modelling the drift of cetacean carcasses. Ecol. Indic. 18, 278–290.

APPENDIX

- 1- CV Vincent Ridoux
- 2- CV Helene Peltier
- 3- CV Paul Jepson
- 4- CV Jan Haelters
- 5- CV Ursula Siebert
- 6- CV Andrea Gröne
- 7- CV Lasse Fast Jensen

## ASCOBANS Project Proposal Format 2013

### Vincent Ridoux - Curriculum Vitae

#### PERSONAL DETAILS

Address: UMS 3419 - Université de La Rochelle

Telephone: + 33 (0) 5 46 50 76 38

5 allée de l'Océan, 17000 La Rochelle, France

Email: vridoux@univ-lr.fr

LIENSs (LIttoral, ENvironnement et Sociétés)

Date of birth: 15/08/1960

UMR 6250, Université de La Rochelle

La Rochelle, France

Nationality: French

#### MAIN SKILLS AND EXPERIENCE

Professional activities centred around three main axes: fundamental research in the ecology of marine

predators; coordination of a monitoring scheme for marine mammals in the French coasts; and provision of technical advice and expertise to policy makers charged with the conservation of marine mammals and the management of their habitats.

#### ACADEMIC CAREER

##### Director

Centre de Recherche sur les Mammifères Marins, UMS 3419 Université de La Rochelle, La Rochelle, France. 2001-

Professor (Professeur des Universités)

Teaching: Département de Génie Biologique, l'Institut Universitaire de Technologie de La Rochelle, Université de la Rochelle, France.

Research: LIENSs (LIttoral, ENvironnement et Sociétés), UMR 6250, Université de La Rochelle, La Rochelle, France. 1998-

Adjoint au Directeur Scientifique OCEANOPOLIS, Centre de Culture Scientifique et Technique de la Mer, Brest, France. 1990-1998

Contract "French Austral and Antarctic Land" (Terres Australes et Antarctiques Françaises; TAAF) de dépouillement de contrat de Volontaire de l'Aide Technique 1981-1983

#### HIGHER EDUCATION AND QUALIFICATIONS

PhD, Biological Oceanography Université de Bretagne Occidentale, Brest 1992

Diplôme d'Etudes Approfondies, Biological Oceanography Université de Bretagne Occidentale, Brest 1984

Maîtrise, Oceanography Université de Bretagne Occidentale, Brest 1981

Licence, Biology of Organisms and Populations Université de Bretagne Occidentale, Brest 1980

DEUG, Sciences of Nature and of Life Université de Rennes I, Rennes, France 1979

#### SELECTED MOST RELEVANT PEER-REVIEWED ARTICLES

{Bibliography} Certain, G., Massé, J., Van Canneyt, O., Petitgas, P., Dorémus, G., Santos, M.B., Ridoux, V. (2011). Investigating the coupling between small pelagic fish and marine top predators using data collected from ecosystem-based surveys. *Marine Ecology Progress Series*, 422: 23–39. doi: 10.3354/meps08932

Pusineri, C., Chancollon, O., Ringelstein, J., Ridoux, V. (2008) Feeding niche segregation among the northeast Atlantic community of oceanic top predators. *Marine Ecology Progress Series*, 361: 21-34.

Certain, G., Ridoux, V., Van Canneyt, O., Bretagnolle, V. (2008). Delphinid spatial distribution and abundance estimates over the shelf of the bay of biscay. *ICES Journal of Marine Science*, 65: 656-666.

Kiszka, J., Van Canneyt, O., Macleod, K., Walker, D., Ridoux, V. (2007). Distribution, encounter rates and habitat characteristics of toothed cetaceans in the Bay of Biscay and adjacent waters from platform of opportunity data. *ICES Journal of Marine Science*, 64: 1033 - 1043.

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**Hélène Peltier**

13/10/ 1984 in Toulouse, French

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5 allées de l'océan  
17000 La Rochelle  
+ 33 5 16 49 67 82  
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EDUCATION

**Ph.D in Marine Environment 2008-2011:** Supervised by Vincent Ridoux. University of La Rochelle, France.  
**Master degree in Marine Ecology 2006-2007:** with distinction (rank 2/12): *Improving the representativity of marine mammal stranding data.* Supervised by Vincent Ridoux, University of La Rochelle, France.  
**Bachelor's degree equivalent 2002 :** ecosystems and organisms biology, with distinction. University of Toulouse, France

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RESEARCH ACTIVITIES

**Project « Cetaceans and anthropogenic activities: establishment of fishery interaction indicators » 2012-2013** –*Scientific design of the project, analyses and valorisation. UMS Pelagis, Fond de Dotation pour la Biodiversité*

**Ph.D in Marine Environment 2008-2011:** Cetacean and environmental change: development of population status indicators in the context of establishing a monitoring strategy. Supervised by Vincent Ridoux. University of La Rochelle, France.

**Environmental engineer February-May 2008-UMS 3462 CNRS-ULR**

Research activities on the development of cetacean population indicators based on stranding data.

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EXPERTISE

**Expert in the redaction of the E.U. Marine Strategy Framework Directive-since 2009.**

**Evaluating the conservation status of marine mammals in France for the evaluation of Habitat Directive (Natura 2000)-February – July 2012**

**Report on the impacts of wind farms on marine mammals in France (EDF-Energies Nouvelles)-November 2007-February 2008**

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SCIENTIFIC PRODUCTION

*-Articles in international journals*

**Peltier, H.,** W. Dabin, P. Daniel, O. Van Canneyt, G. Dorémus, M. Huon, and V. Ridoux. 2012. The significance of stranding data as indicators of cetacean populations at sea: Modelling the drift of cetacean carcasses. *Ecological Indicators* 18:278–290.

**Peltier, H.,** H. J. Baagøe, K. C. J. Camphuysen, R. Czeck, W. Dabin, P. Daniel, R. Deaville, J. Haelters, T. Jauniaux, L. F. Jensen, P. D. Jepson, G. O. Keijl, U. Siebert, O. Van Canneyt, and V. Ridoux. 2013. The Stranding Anomaly as Population Indicator: The Case of Harbour Porpoise *Phocoena phocoena* in North-Western Europe. *PLoS ONE* 8:e62180.

**Peltier, H.,** P. D. Jepson, W. Dabin, R. Deaville, O. Van Canneyt, P. Daniel, and V. Ridoux. (n.d.). Patterns of stranding anomalies as indicators for common dolphin, *Delphinus delphis*, population in the Channel and the Bay of Biscay. *Ecological Indicators* submitted.

*-Oral communications in international conferences: 5 as first authors*

*- Posters in international conferences: 2 as first authors*

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SKILLS

**Data analyses and modelling** (R, MOTHY, SIG)

**Fieldwork** (Marine Mammal Observer, Seal telemetry, boating license, photography)

**Languages** (English, oral and written; German, scholar).

**Paul David JEPSON**

**Personal Details**

Date of Birth: 12<sup>th</sup> May 1968  
Present Appointment: Senior Research Fellow  
Date of Appointment: October 2006  
Address: Institute of Zoology  
Zoological Society of London  
Regent's Park  
London  
NW1 4RY  
tel: +44 (0)20 7449 6691  
email: [paul.jepson@ioz.ac.uk](mailto:paul.jepson@ioz.ac.uk)

**Education & Qualifications**

June 2010 – European Veterinary Specialist in Wildlife Population Health  
July 2003 - PhD, University of London  
July 1991 - Member, Royal College of Veterinary Surgeons  
July 1991 - Bachelor of Veterinary Medicine & Surgery, University of Glasgow

**Recent Professional History**

January 2007-present: appointed to Senior Research Fellow (Institute of Zoology)  
September 2007-August 2012: PhD Graduate Tutor (Institute of Zoology)  
August 2007-present: appointed to internal examiner (MSc Wild Animal Health/Wild Animal Biology) co-taught by the Royal Veterinary College (University of London) and the Institute of Zoology  
July 2006: awarded a 5-year EPSRC (RCUK) Fellowship in Marine Mammal Epidemiology at the Institute of Zoology (start date: 1<sup>st</sup> October 2006).  
July 2003-December 2006: Post Doctoral Researcher (Institute of Zoology) and Technical Co-ordinator (Defra-funded UK Cetacean Strandings Investigation Programme).

**Selected publications**

- Davison, N.J., Barnett, J.E.F., Perrett, L.L., Dawson, C.E., Perkins, M.W., Deaville, R.C. and **Jepson, P.D.** First case of meningitis and arthritis associated with *Brucella ceti* in a short-beaked common dolphin (*Delphinus delphis*) *Journal of Wildlife Diseases* (in press).
- Jepson P.D.**, Deaville R., Acevedo-Whitehouse K., Barnett, J., Brownlow A., Brownell Jr, R.L., Clare F.C., Davison N.C., Law R.J., Loveridge J., Macgregor S.K., Morris S., Murphy S., Penrose R., Perkins M.W., Pinn E., Seibel, H., Siebert, U., Sierra E., Simpson V., Tasker M.L., Tregenza N., Cunningham A.A. and Fernández A. What caused the UK's largest common dolphin (*Delphinus delphis*) mass stranding event? *PLoS ONE* 8(4): e60953. doi:10.1371/journal.pone.0060953
- Murphy, Sinead, Pinn, E., and **Jepson, P.D.** A review of the short-beaked common dolphin (*Delphinus delphis*) in the North-east Atlantic: distribution, ecology and conservation status. *Oceanography and Marine Biology: An Annual Review* (in press)
- Peltier, H., Dabin, W., Daniel, P., Deaville, R., Haelters, J., Jensen, L.F., **Jepson P.D.**, Keijl, G.O., Siebert U., Van Canneyt, O., Ridoux, V. The null hypothesis and the analysis of stranding anomalies of harbour porpoise, *Phocoena phocoena*, in the North Sea and the Bay of Biscay *PLOS ONE* (in press)
- Law RJ; Bersuder P; Barry J; Barber J; Deaville R; Barnett J; **Jepson PD** (2013) Organochlorine pesticides and chlorobiphenyls in the blubber of bycaught female common dolphins from England and Wales. *Marine Pollution Bulletin* 69: 238-242.
- Fernandez, A., Arbelo, M., Deaville, R., Patterson, I.A.P., Castro, P., Baker, J.R., Degollada, E., Ross, H.M., Herráez, P., Pocknell, A.M., Rodriguez, E., Howie, F.E., Espinosa, A., Reid, R.J., Jaber, J.R., Martin, V., Cunningham, A.A., and **Jepson, P.D.** (2004) Whales, sonar and decompression sickness (reply). *Nature*, doi:10.1038/nature02528
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## Jan Haelters

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Date, place of birth 12 February 1965 at Elsene, Belgium

### **Current occupation**

**1995 - now:** Scientist at the Royal Belgian Institute of Natural Sciences (RBINS), Department Management Unit of the North Sea Mathematical Models (MUMM)

### **Selection of current professional activities**

- Belgian contact point at OSPAR COBAM (Coordination of Biodiversity Assessment and Monitoring in the framework of the MSFD - European Marine Strategy Framework Directive), and lead for marine mammals
- Belgian contact point at the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) for scientific matters
- Belgian member of the ICES Marine Mammal Ecology Working Group
- Coordination of the scientific activities of the Belgian marine mammal strandings network
- Environmental impact assessment of offshore wind farms (underwater noise, marine mammals)
- National coordination of the monitoring of the effects of the construction and operation of offshore wind farms on marine mammals

### **Selection of relevant publications**

Haelters, J., Jauniaux, T., Kerckhof, F., Ozer, J. & Scory, S., 2006. Using models to investigate a harbour porpoise bycatch problem in the southern North Sea–eastern Channel in spring 2005. ICES CM 2006/L:03. 8p.

Haelters, J. & Camphuysen, K., 2009. The harbour porpoise in the southern North Sea: abundance, threats and research- & management proposals. Royal Belgian Institute of Natural Sciences (RBINS/MUMM) and the Royal Netherlands Institute for Sea Research (NIOZ); report commissioned by the International Fund for Animal Welfare (IFAW); 56 p.

Haelters, J., Kerckhof, F., Jacques, T.G. & Degraer, S., 2011. The harbour porpoise *Phocoena phocoena* in the Belgian part of the North Sea: trends in abundance and distribution. Belgian Journal of Zoology 141: 75-84.

Haelters, J., Kerckhof, F., Jauniaux, T. & Degraer, S., 2012. The grey seal (*Halichoerus grypus*) as a predator of harbour porpoises (*Phocoena phocoena*)? Aquatic Mammals 38(4): 343-353. DOI 10.1578/AM.38.4.2012.343

## ASCOBANS Project Proposal Format 2013

### CV Professor Dr. Ursula Siebert

#### EDUCATIONAL QUALIFICATIONS

- 1986-1992 Study of Veterinary Medicine  
at the Justus-Liebig-Universität Giessen, Germany,  
at the Ecole Vétérinaire de Nantes, France (funded by the DAAD and EU-Erasmus-Program)
- 1992-1995 Doctoral thesis  
at the Free University of Brussels, Belgium (funded by the European Science Foundation) and  
at the Justus-Liebig-Universität Giessen, Germany,
- 1992-1996 Training in  
1.) Veterinary Pathology  
2.) Wild Animal Medicine  
3.) Aquaculture
- 2007 Habilitation in Zoology at the Christian-Albrechts-University of Kiel
- Practical courses Texas Marine Mammal Stranding Network, Galveston  
at the Institute for Pathology at University of Montreal, Canada,  
Beluga Pathology  
University of Delft Image Processing  
Ultrasound: Dolphinarium, Paris, France, Dolphinarium Brugge, Belgium  
IFREMER Nantes and Rennes for Aquaculture
- 2011 Habilitation approved by the University of Veterinary Medicine Hannover, Foundation
- 2012 Diplomate of European College of Zoological Medicine (Wildlife Populations Health)

#### CURRENT EMPLOYMENT

- since July 2011 Director of the Institute for Terrestrial and Aquatic Wildlife Research (ITAW) of the University of Veterinary Medicine Hannover, Foundation, Germany

#### PREVIOUS EMPLOYMENT

- May 1996-June 2011 Leader of the section "Ecology of marine mammals and birds" at the Forschungs- and Technologiezentrum Westküste (FTZ), Büsum, University of Kiel, Germany
- 1997-2004 Veterinarian in charge for Fjord-and Belt Center porpoises and seals
- 1992-1994 Research associate at the Institute of Veterinary Pathology at the Justus-Liebig-Universität Giessen, Germany, in the research project „Investigations on the abundance, health status and migration of small cetacean population in German waters“, funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
- 1994-1996 Research associate at the Institute for Veterinary Pathology at the Justus-Liebig-Universität Giessen, Germany, in the research project „Investigation on small cetaceans as basis of a monitoring“, funded by the German Federal Ministry for Research and Technology

## ASCOBANS Project Proposal Format 2013

Andrea Gröne

Department of Pathobiology  
Utrecht University  
Yalelaan 1  
3584 CL Utrecht  
The Netherlands

### Studies

1983 - 1989                      Veterinarian Medicine, Justus-Liebig-Universität, Gießen, Deutschland

July 1989                        Final Exams (Tierärztliche Prüfung)

### Professional degrees

July 1994                        Dr.med.vet., Institut für Veterinär-Pathologie, Justus-Liebig-Universität, Gießen:  
"Lichtmikroskopische Untersuchung des Analbeuteldrüsenkarzinoms des Hundes und  
Ultrastruktur der Parathyreoideae der Nacktmaus nach experimenteller Übertragung  
des Tumors" (Magna cum laude)

September 1996                Diplomate, American College of Veterinary Pathologists

November 1996                Doctor of Philosophy (Ph.D.), The Ohio State University, Columbus, OH, USA:  
"Parathyroid hormone-related protein (PTHrP) and the PTHrP receptor in humoral  
hypercalcemia of malignancy: Investigations on genetic regulation and protein  
expression *in vivo* and *in vitro*"

February 1999                 Diplomate, European College of Veterinary Pathologists

May 2000                        Fachtierärztin für Pathologie (German Specialisation as Veterinary Pathologist)

June 2003                        Habilitation, Institut für Tierpathologie, Universität Bern, Switzerland:" Canine  
distemper virus - cellular consequences of infection")

### Work Experience

1989 - 1990                      Veterinarian small animal practice, St.Leonards, England

1990 - 1991                      Research Fellow, Department of Veterinary Pathobiology, The Ohio State  
University, Columbus, OH, USA,

1991 - 1996                      Combined Residency/PhD-programme, Department of Veterinary Pathobiology, The  
Ohio State University, Columbus, USA,

1997 - 1998                      Post-doc, Institut für Veterinär-Pathologie der Justus-Liebig-Universität, Gießen,  
Deutschland

1998 - 2003                      Oberassistentin (Assistent professor equivalent), Institut für Tierpathologie,  
Universität Bern, Switzerland

2003 - 2005                      Wissenschaftliche Mitarbeiterin (Assistent professor equivalent), Institut für  
Pathologie, Stiftung Tierärztliche Hochschule Hannover, Hannover, Germany

2005 -                              now Full professor, Department of Pathobiology, Utrecht University, Utrecht, The  
Netherlands

## CV Lasse Fast Jensen

### Personal details

Date of birth: 10<sup>th</sup> August 1977  
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### Education

2007 PhD, biology, University of Aarhus and Technical University of Denmark.  
2004 M.Sc., biology, University of Aarhus.

### Other appointments and affiliations

Assistant Research Professor, Centre for Maritime and Regional Studies  
Member of the Trilateral Seal Expert Group, Common Wadden Sea Secretariat  
Member of the Natural History advisory board, Danish Agency for Culture

### Peer review recent publications

Peltier, H., Baagøe, H.J., Camphuysen, K.C.J., Czeck, R., Dabin, W., Daniel, P., Deaville, R., Haelters, J., Jauniaux, T., Jensen, L.F., Jepson, P., Keijl, G.O., Siebert, U., Van Canneyt, O. & Ridoux, V. (2013) The stranding anomaly as population indicator: The case of harbour porpoise *Phocoena phocoena* in North-Western Europe. *PLoS ONE*, 8(4): e62180.

Wright, A.J., Maar, M., Mohn, C., Nabe-Nielsen, J., Siebert, U., Jensen, L.F., Baagøe, H.J. & Teilmann, J. (2013) Possible Causes of a Harbour Porpoise Mass Stranding in Danish Waters in 2005. *PLoS ONE*, 8(2): e55553.

Pertoldi, C., Jørgensen, B.H., Randi, E., Jensen, L.F., Kjærsgaard, A., Zachos, F.E. & Faurby, S. (2012) Implementation of mixture analysis on quantitative traits in studies of neutral *versus* selective divergence. *Evolutionary Ecology Research*, **14**, 881-895.

Poulsen SB, Jensen LF, Schulz C, Deacon M, Meyer KE, Jäger-Kleinicke T, Schwarten H & Svendsen JC (2012) Ontogenetic differentiation of swimming performance and behaviour in relation to habitat availability in the endangered North Sea houting (*Coregonus oxyrinchus*). *Aquatic Living Resources*, **25**, 241-249.

Poulsen SB, Jensen LF, Nielsen KS, Malte H, Aarestrup K & Svendsen JC (2011) Behaviour of rainbow trout *Oncorhynchus mykiss* presented with a choice of normoxia and stepwise progressive hypoxia. *Journal of Fish Biology*, **79**, 969-979.

Poulsen SB, Svendsen JC, Jensen LF, Schulz C, Jäger-Kleinicke T & Schwarten H (2010) Effects of food deprivation on refuge use and dispersal in juvenile North Sea houting (*Coregonus oxyrinchus*) under experimental conditions. *Journal of Fish Biology*, **77**, 1702-1708.

Jensen LF, Hansen, MM, Pertoldi C, Holdensgaard G, Mensberg K-LD & Loeschcke V (2008) Local adaptation in brown trout early life-history traits: implications for climate change adaptability. *Proceedings of the Royal Society of London, Ser B*, **275**, 2859-2868

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee at its next meeting, foreseen for autumn of 2013, will consider the proposals made available to its review and select those that are a priority for funding. *Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported.* Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received **by 15 July 2013** will be made available to the Committee for their review. Funding applications received later will not be considered. Please submit your proposal in Word format.

<p><b>Title</b> <b>Distribution, habitat use and health status of harbour porpoises (<i>Phocoena phocoena</i>) in the Elbe and Weser rivers</b></p>	<p><b>Justification:</b> (to be completed by the Secretariat)</p>	<p><b>Project ID:</b> (to be completed by the Secretariat) 2013/02</p>
<p><b>Implementing Agency / Applicant</b></p>	<p><b>Denise Wenger, Dipl.-Biol.</b> Society for Dolphin Conservation Kornwegerstr. 37 81371 München Phone: 089/74160412; 0176-22208271 Wenger@delphinschutz.org</p> <p><b>Prof. Dr. Ursula Siebert</b> Institute for Terrestrial and Aquatic Wildlife Research Foundation, (ITAW) University of Veterinary Medicine Hannover, Foundation Werftstr. 6 25761 Büsum Phone: 0511-8568158 Ursula.Siebert@tiho-hannover.de</p>	
<p><b>Collaborating Agencies / Other Sponsors</b></p>	<p><b>Dr. Veit Hennig</b> Department of Biology Biocenter Grindel University of Hamburg Phone: 040/42838-4235 Veit.Hennig@uni-hamburg.de</p>	

	<p><b>Dr. Klaus Janke</b>  Hamburg Agency for Urban Development and the Environment  (bsu Hamburg)  klaus.janke@bsu.hamburg.de  Neuenfelder Straße 19  21109 Hamburg</p> <p>County Administration Wesermarsch  Poggenburger Str. 15  26919 Brake</p> <p><b>Krishna Das</b>  F.R.S. - FNRS Research Associate  University of Liege  Laboratory for Oceanology - MARE Research Center  Allée de la Chimie 17 , B6C, Institut de Chimie  4000, Liege (Sart-Tilman), Belgium  Tel: (+32) 4 366 3321  Email: krishna.das@ulg.ac.be</p>
<p><b>Background / Problem</b></p>	<p>After many decades of apparent absence, harbour porpoises have been increasingly entering the German Jade, Weser, and Elbe rivers every springtime. A sightings scheme that was implemented by the Society for Dolphin Conservation (GRD) in 2007 has shown this regular occurrence of harbour porpoises in the estuaries and lower courses of the Weser (Wenger &amp; Koschinski 2012) and Elbe rivers up to the cities of Bremen and Hamburg during the months from March through June. The spatial-temporal pattern of the sightings corresponds to the pattern of the occurrence of anadromous fish species, especially smelt (<i>Osmerus eperlanus</i>) and twaite shad (<i>Alosa fallax</i>), swimming from the North Sea to their spawning grounds in the rivers.</p> <p>Based on the data analysis harbour porpoises must be considered as part of the biocenosis of these rivers. Especially in Hamburg harbour, they have been observed hunting prey in particularly large groups with as many as 10 individuals over weeks. Nowadays, the harbour porpoises in these rivers no longer represent vagrant individuals as previously stated.</p> <p>Harbour porpoises in the high-traffic waterways of Weser and Elbe are exposed to a high number of anthropogenic activities including ship traffic, recreational activities, chemical and noise pollution. Especially fast watercraft may pose a threat. Those activities are of potential threat to harbour porpoises causing impairment of the health status and death (Review by Siebert et al. 2012).</p>

	<p>The rivers were severely polluted in the last century due to industrialization. Fish species and numbers declined severely. Today the water quality has improved and fish species have returned, although the ecology of the river beds has dramatically changed (Thiel et al. 2003).</p> <p>But pollutants such as heavy metals or pesticides (e.g. persistent organic pollutants, POPs) are still present in river sediments. Environmentally dangerous substances like cadmium, mercury and organic substances such as lindane, dioxin, pentachlorobenzene, DDT, alpha-HCH and HCB are still found in the sediments of the Elbe river (<a href="http://www.fgg-elbe.de/dokumente/messprogramme.html">http://www.fgg-elbe.de/dokumente/messprogramme.html</a>). These pollutants may also pose a threat to the harbour porpoises' health. Container ship traffic, tide water currents, excavating for river bed deepening and other anthropogenic activities swirl up these pollutants which dissolve and attach to suspensions in the water, while feeding harbour porpoises may possibly ingest these substances not only along with their prey but also with small particles in the water and therefore may be highly contaminated.</p> <p>Harbour porpoises are top predators and heavy metals as well as persistent organic pollutants (POPs) are bio-accumulated in their tissues (Bruhn et al. 1999, Siebert et al. 1999, Thron et al. 2004,). Harbour porpoises from higher polluted waters showed lymphoid depletion in the thymus and spleen and increase of connective tissue in the thyroid (Beineke et al. 2007, Das et al. 2007). Those contaminant-induced lesions are contributing to disease susceptibility in harbour porpoises from the North and Baltic Seas (Jepson et al. 1999, Siebert et al. 1999, Pierce et al. 2007).</p> <p>Also, high underwater noise levels especially in Hamburg harbour may affect the harbour porpoises' health. Ambient sound pressure levels of the port environment and rivers are unknown. Harbour porpoises use their acoustic capability to navigate in their underwater environment, and to locate and identify suitable prey which makes them highly susceptible to effects of sound (Ketten et al. 2000, Verfuß et al. 2005). The effects can range from mild disturbance to auditory impairment, hearing loss and even death (Richardson et al. 1995, Southall et al. 2007). Therefore passive measurements of sound pressure level are highly recommended (Merchant et al. 2013; Sousa-Lima et al. 2013).</p> <p>In 2013, 20 dead animals were found along the shore of the Elbe river from the area of Hamburg harbour to the city of Wedel.</p> <p>The abundance of the harbour porpoise in the lower courses of the rivers is a new phenomenon. Systematic research is needed on habitat use and on the importance of anadromous fish species</p>
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	<p>in the Weser and Elbe rivers as prey for harbour porpoises. Necropsies are required to obtain information about the health status, cause of death, contamination burdens, age structure and reproduction status and population genetics.</p>
<p><b>Objectives</b></p>	<p><b>The objectives of this study are:</b></p> <ol style="list-style-type: none"> <li>1. Estimate of total numbers of harbour porpoises frequenting the Elbe and Weser</li> <li>2. Identification of habitat preferences and areas of higher risk of conflicts with anthropogenic activities</li> <li>3. Assessment of the age structure and reproduction status of harbour porpoise observed and found dead in the Elbe and Weser</li> <li>4. Identification of background noise in important habitats of harbour porpoise in the Weser and Elbe</li> <li>5. Genetic investigations for the identification of relation with other harbour porpoises in the North Sea. Identification of adequate conservation and management measures</li> <li>6. Studies on feeding ecology (observations, stomach content). Determining the importance of given areas in the rivers and of anadromous fish schools to the harbour porpoise groups.</li> <li>7. Health assessment, determination of cause of death and body load of chemical pollutants</li> <li>8. Increasing awareness about Germany's only resident whale</li> <li>9. Creating/ organising (a) special public harbour porpoise watching day/s at which the public is informed via the media to look out for harbour porpoises in the rivers or in North and Baltic Sea. Possibly, these could be organized to coincide with the International Day of the Baltic Harbour Porpoise (IDBHP) organized annually by ASCOBANS or similar sightings days carried out in the framework of the ASCOBANS North Sea Conservation Plan or the Jastarnia Plan.</li> </ol>
<p><b>Relevance to ASCOBANS</b></p>	<p><b>The study will contribute to implementing and promoting</b></p> <ol style="list-style-type: none"> <li>1. the ASCOBANS Conservation Plan for harbour porpoises in the North Sea             <ul style="list-style-type: none"> <li>-- the work plan dated Oct. 2012 concerning</li> <li>- general developments with respect to other issues at stake</li> <li>- new information on pollution,</li> <li>- the extent of negative effects of sound and vessels,</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>- the distribution and causes of changes in the ASCOBANS area</li> <li>- and emerging issues posing a potential threat to cetaceans</li> </ul> <p>2. ASCOBANS and the ASCOBANS Conservation and Management Plan, among others in the following areas:</p> <ul style="list-style-type: none"> <li>- surveys and research</li> <li>- identifying threats and causes of death</li> <li>- education and awareness raising</li> <li>- reviewing new information on harbour porpoise distribution, population structures, and needs, and obtaining baseline data for further recommendations to relevant authorities</li> </ul> <p><b>The project will support the conservation objectives of ASCOBANS by</b></p> <ul style="list-style-type: none"> <li>- identifying the southernmost distribution area and frequented limnic habitats of harbour porpoises (habitat preferences) in Germany</li> <li>- giving information about seasonal movements (migration) at least of special stocks or subgroups, and their group composition</li> <li>- providing information on population structures through genetic tests</li> <li>- locating areas of special importance, documenting food composition</li> <li>- providing information about habitat requirements, special areas of feeding and their importance to the subgroups</li> <li>- identifying threats</li> <li>- helping to raise awareness by providing new information to the general public for further support of conservation agreements and measures</li> <li>- supporting any efforts to prevent the introduction of polluting substances which are a potential threat to the health of the animals (as required also under the EU Water Framework Directive)</li> <li>- providing guidelines for FFH conservation measures and management, suggesting measures like temporary speed limits, temporary restrictions to construction or ramming work during the times when porpoises are known to occur in the rivers</li> </ul>
<p><b>Activities</b></p>	<p><b>A. Systematic data sampling in regard to the abundance and occurrence (seasonal and spatial distribution) of harbour porpoises in the rivers using different methods:</b></p> <p><b>1. Visual: collecting sighting data during daylight hours</b></p>

	<p>(recording date, time, position, group composition, behaviour)</p> <ul style="list-style-type: none"> <li>- Continuation of existing opportunistic sighting scheme</li> <li>- Line transect surveys/ boat surveys from the beginnings of the estuaries at the coasts (ports of Bremerhaven, Weser-Km 68/ Cuxhaven or Otterndorf, Elbe-Km 726) to the cities of Bremen (Weser-Km 0) and Hamburg (Elbe-km 620), or at least of Wedel (Elbe-km 640) with one (or better two) observer(s) aboard recording the GPS position data and time of sightings.</li> <li>- Additional boat surveys covering the Elbe from Wedel (Elbe-km 640) to Hoopte (Elbe-km 599) and the secondary branches, channels and small port basins.</li> <li>- Observations to be made by students from the lighthouse in Wittenbergen from end of January to mid-June to get more information about the migration movements at the beginning and end of the 'harbor porpoise season'</li> <li>- Observations with binoculars made by volunteers/students/or ferry staff from the ferries, weekly from the end of January until mid-June during regular ferry trips (cf. below) ideally taking place along two or three ferry routes in both directions at the same times of day</li> <li>- Additional special boat trips along the specific sites where the harbour porpoises are regularly seen for studies on their behaviour.</li> </ul> <p><b>2. Acoustic Monitoring:</b></p> <ul style="list-style-type: none"> <li>-</li> <li>-</li> <li>- <b>2.1. Stationary: Installation of 16 CPODs (Continuous Porpoise Detectors, Chelonia)</b> at different sites in the Elbe (8) and Weser (8) rivers. These acoustic click detectors are hydrophones with fully automated logger units, manufactured by Chelonia Limited, London. The CPODs will provide additional data concerning the presence of porpoises and some of their behaviour correlated with acoustic signals, like feeding or communication, whose click trains can be distinguished by experts. For data analyses the newest version of the C-POD.exe PC software will be used which is available to users free of charge. Detailed information about CPODs can be found at <a href="http://www.chelonia.co.uk">www.chelonia.co.uk</a>.</li> <li>- <b>2.2 Ship surveys with hydrophones:</b> kind of special hydrophones will be used during ship surveys to support visual data collection and give additional information during behavioural observations</li> <li>- <b>2.3. Detection of environmental noise:</b> To record sound pressure levels and frequencies of ambient noise, emitted by port facilities and ships, one SM2M Marine Recorder (<a href="http://www.wildcareshop.com/sm2m-marine-recorder.html">http://www.wildcareshop.com/sm2m-marine-recorder.html</a>)</li> </ul>
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	<p>will be installed. The location will be modified, to get different levels of noise impacts, varying between days of the week and tide cycles in parts of the POD positions.</p> <p><b>B. Postmortem examinations</b></p> <p>Harbour porpoises carcasses in the area of the river Elbe and Weser will be collected. Depending on the state of preservation further investigations will be conducted. This includes age determination reproduction status and necropsies (Lockyer &amp; Kinze 2003, Siebert et al. 2001). Special focus will be given to impacts of boats and underwater noise. Microbiological, parasitological and serological studies will take place according to methods described by Müller et al. 2000, Lehnert et al. 2005 and Siebert et al. 2009). POPs and heavy metals will be analysed in different tissues of the animals (Thron et al. 2004, Das et al. 2006, van Vijver et al. 2004).</p> <p>Genetic analyses are planned regarding relatedness, population genetics and other questions (Wiemann et al. 2010).</p> <p><b>C. Analyses of temporal and spatial patterns of predator and prey; Identifying harbour porpoises' main prey species in the rivers</b></p> <ol style="list-style-type: none"> <li>1. Underlying causes governing harbour porpoise distribution in the rivers are explored by reviewing available information on possible prey. Analyses of available fish data of the last five years for different fish species (including smelt (<i>Osmerus eperlanus</i>) and twaite shad (<i>Allosa fallax</i>)) will be made. Is there a correlation between the spatial-temporal distribution of these fish species and abundance of the harbor porpoises in the estuaries and lower river courses? Such data could be obtained from different sources, for example from the 'Institut für Fischereiökologie' Hamburg, University of Hamburg, Zoological Institute, consulting agencies such as Bioconsult Bremen; beam trawl ('Hamen') fish sampling/ <i>Allosa fallax</i> monitoring WSA.</li> <li>2. Additional new data will be taken by fish samplings at locations along the Elbe river (also in areas known to be preferred harbour porpoise habitats) in cooperation with the department of fisheries, University of Hamburg, and fishermen and/or other institutes. (bachelor thesis)</li> <li>3. Research and analysis of historical data about harbour porpoise abundance in the Elbe and Weser rivers.</li> </ol>
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	<p>4. Examination of the stomach contents of harbour porpoises          In 2012, more than 30 dead harbour porpoises were recorded for both rivers, but only two were available for examinations. Collection of carcasses for examination will be improved to obtain at least n=8 dead harbour porpoises which can be examined regarding stomach contents (see below)</p> <p><b>Stomach content analyses</b></p> <ul style="list-style-type: none"> <li>- Analyses of stranded animals:</li> <li>- Esophagus and stomach will be removed to be examined for prey contents. For example otoliths (commonly known as "earstones", hard calcium carbonate structures in the inner ear of all vertebrates, used as gravity, balance, movement, and directional indicators): findings of otoliths in the stomachs of harbour porpoises can help to determine the consumed fish species as different fish species have otoliths of different shapes and sizes (Gilles 2009).</li> </ul>
<p><b>Outputs</b></p>	<p><b>Expected outputs of the project:</b></p> <ul style="list-style-type: none"> <li>- Information on habitat use and health status of harbour porpoises in the rivers Elbe and Weser.</li> <li>- Identification of areas of high conflict between habitat use and anthropogenic activities.</li> <li>- Establishment of a monitoring program of this FFH-species for both areas</li> <li>- Advice for management measures in the areas of both rivers</li> <li>- Reports and working papers for ASCOBANS</li> <li>- Presentation of results at meeting such as ASCOBANS, ECS, SMM, IWC</li> <li>- Posters and brochures for interested museums and general public</li> <li>- Publication of results in international peer-reviewed journals.</li> </ul> <p>Indicate the specific products or services (e.g. reports, publications) produced by the activities to achieve the project objectives, including scientific, conservation and management and educational outputs.</p>
<p><b>Work Plan and Timetable</b></p>	<p>The duration of the project is planned for two years.  <b>See Annex 1</b></p>

ASCOBANS Project Proposal Format 2013

<b>Project Personnel</b>	<p>Denise Wenger will conduct and be involved in all parts of the project which is her Dissertation.</p> <p>Dr. Veit Hennig will supervise and conduct the field work (POD, sightings, countings, noise loggers, observation of behavior).</p> <p>Health assessment and further investigations will be under the responsibility of Prof. Dr. Ursula Siebert and partners.</p> <p>Pollutants will be analysed by Dr. Krishna Das.</p> <p>Stomach content investigations are analysed with PD Dr. Ralf Thiel (Univ. Hamburg).</p> <p>Public relation will be achieved by the Society for Dolphin Conservation.</p> <p>All parts of the projects are performed in cooperation with Hamburg Agency for Urban Development and the Environment and the County Administration Wesermarsch.</p> <p>The projects will involve students from the University of Hamburg and University of Veterinary Medicine Hannover.</p>
<b>Budget Estimates</b>	See Annex 2

For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org).



## Annex 2

### Budget Estimate

Expenses for Personnel	9,800 €
Consumables	750 €
Necropsies and toxicological analyses	3,200 €
Travel expenses	1,200 €
Total	14,950€

Some parts of the equipment (e.g., CPODs, noise loggers) will be made available for use by various institutions (e.g. by the Federal Agency for Nature Conservation (BfN)); other parts of the equipment and other costs will be covered by own funds of the Hamburg University; University of Veterinary Medicine Hannover, Foundation; and GRD. To cover the remaining costs, other foundations will be contacted for support. It is in any case ensured that the activities planned under the ASCOBANS project can be performed without applying for further funds.

## Annex 3

### References

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**ASCOBANS Project Proposal Format 2013**

<p><b>Title</b></p> <p>Did you know? All about the harbour porpoise. An education kit for a species in danger.</p>	<p><b>Justification:</b></p> <p>Conservation and Management Plan CEPA – Res.7.2</p>	<p><b>Project ID:</b></p> <p>2013/03</p>
<p><b>Implementing Agency / Applicant</b></p>		
<p>The project implementing agency is Whale and Dolphin Conservation, WDC. Annika Winter Education Manager Implerstrasse 55 81371 Munich E: Annika.winter@whales.org</p>		
<p><b>Collaborating Agencies / Other Sponsors</b></p>		
<p>WDC will develop a range of educational resources aimed at children and young people to raise awareness about the harbour porpoise. WDC will collaborate with ASCOBANS Secretariat to ensure that the content of these materials is in line with ASCOBANS requirements and fulfils the CEPA plan. The technical and design side of this project will be supported by an e-learning designer and developer.</p>		
<p><b>Background / Problem</b></p>		
<p>Harbour porpoises inhabit waters of the Baltic and North Seas. Yet, the majority of people, even those living within close proximity to the shore, do not realise that this small, elusive cetacean is an integral part of Europe’s marine environment. At the same time, ever-increasing human activities lead to disturbance-related threats and habitat degradation, limiting space where harbour porpoises can safely and successfully feed, breed, travel and rest.</p> <p>The need to support conservation efforts by increasing public awareness of small cetaceans in the region has already been highlighted by ASCOBANS in its conservation plans and resolutions. The Agreement’s Communication, Education and Public Awareness (CEPA) Plan explicitly recommends a development of accessible information on the biology and ecology of small cetaceans in the ASCOBANS area, as well as materials relating to threats and conservation.</p> <p>In order to raise the profile of small cetaceans and the threats they face, and furthermore educate a selected target group, this project aims to develop educational tools which will focus on harbour porpoises, their environment, threats, ways to protect them as well as promoting conservation efforts already undertaken by ASCOBANS and its Parties. These educational resources will be made available to ASCOBANS Parties to help them fulfil their commitment to the objectives of the Agreement’s Communication, Education and Public Awareness (CEPA) Plan, the implementation of which has been referred to in the ASCOBANS Resolution 7.2, Annex 1, Activity 31.</p>		

These new resources will target school-age children in all Parties of the Agreement. Educating children is known to have an additional beneficial impact in influencing and changing attitudes towards conservation and environment among adults. Using the harbour porpoise as an emblematic species, these resources will inform teachers, children and potentially a wider audience on the importance of and threats to the species, and motivate people to take supportive action.

Our resources will include an XL size educational poster (A2) for display in schools, for use by Youth groups and individual children (with 4 black and white photocopiable activity worksheets on the reverse side) (see an example of a similar poster attached), an interactive map and games, and a video/podcast (please see the outputs section for more details). They will complement and add value to resources which are already in place particularly the ASCOBANS kid's zone website, the development of which WDC is already assisting the Secretariat with.

WDC has taken into consideration the cost factor and the function of these resources in the implementation of the targets set out in the CEPA plan and moved away from costly booklets and brochures. Instead, these new materials will be inexpensive to produce or download and easy to distribute. They will be practical and easy to use by teachers. The content of these materials will be agreed with ASCOBANS and relevant to Parties. Downloadable versions of each resource will be hosted on the ASCOBANS website. All materials will be initially available in English and German. WDC will create additional electronic versions, at no additional cost, once translations have been provided by ASCOBANS.

## **Objectives**

The project's overall aim is to raise the profile of harbour porpoises and to protect from further decline due to anthropogenic threats and safeguard their survival into the future.

1. Increase awareness of harbour porpoises through dissemination of educational resources to promote the marine heritage of ASCOBANS' Parties.
  - a. To develop engaging materials which will increase young people's knowledge and understanding of marine environments and small cetaceans.
  - b. To inform and engage children in how they can protect marine environments by encouraging them to take part in environmental projects at schools and practical conservation (e.g. litter disposal and beach cleans) in their countries.
  - c. Using fun and interactive online content, motivate children to take an interest and engage their parents, teachers and friends in conservation activities.
2. Support ASCOBANS' commitment to fulfil recommendations set out in the Agreement's conservation plans and highlight issues concerning the conservation of harbour porpoises.
  - d. To provide educational resources to ASCOBANS to help the Parties; governments deliver the educational programme which underpins the Agreement's conservation efforts.

- e. Assist ASCOBANS Parties in promoting harbour porpoise conservation and enable the governments to implement the CEPA plan.

### Relevance to ASCOBANS

The educational resources will reflect conservation issues affecting harbour porpoises which have been addressed by:

1. Recovery Plan for Baltic Harbour Porpoises (Jastarnia Plan)
2. Conservation Plan for Harbour Porpoises (*Phocoena phocoena L.*) in the North Sea
3. Conservation Plan for the Harbour Porpoise Population in the Western Baltic, the Belt Sea and the Kattegat

This important requirement to raise public awareness has also been highlighted in all three of the above ASCOBANS plans.

This project directly supports the ASCOBANS CEPA Plan 2010 - 2012 Section 2. Objectives and Recommended Action. The recommendations directly address the following points outlined in this plan:

- 1.1 Website development, to include more species information and games for children
- 4.3 Develop the website (...) to include educational material, where fact sheets, materials used in schools and species guides are recommended.

Furthermore, Resolution No.2 "Activities of the ASCOBANS Advisory Committee And Work Plan (MOP 7 2012)" lists the following activity:

**Goal 31.** Implement CEPA to raise awareness of issues related to cetacean conservation in the Agreement Area, with a particular focus on outreach to relevant stakeholders, and where possible in collaboration with partner organisations.

### Activities

The project will include the following activities:

1. Concept development – materials will be age-appropriate with high visual impact. They will reflect a concept of learning through play and enquiry. All materials will fulfil the criteria of the UNESCO Education for Sustainable Development. All resources will be designed to primarily engage children in schools and other learning environments. Children will also be encouraged to share them in and outside school, and involve their peers and parents in environmental-themed games and online activities (hosted on ASCOBANS kid's zone website, as well as WDC's and others partners' sites also). Paper materials will provide ideas for creative activities that children and or / teachers can carry out. **(1-2 months)**
2. Content development – will be based on a solid educational concept and WDC's expertise in education. Content will be developed by WDC's Team then agreed with and approved by the ASCOBANS Secretariat to ensure they are in accordance with the objectives of the Agreement. **(4-5 months)**
3. Design and production – once the content has been developed, WDC's Education Team will develop a detailed design specification. WDC design staff will undertake

the creative aspect of the project. Online resources will be developed with an e-learning designer. The podcast will be produced with the support of a professional film team. **(6 - 8 months)**

4. Dissemination of resources – Physical resources, developed in English and German, will be shared with the ASCOBANS Secretariat to be offered to focal points, who will be responsible for the further translation and printing of these materials. WDC will input the translated text into the templates so no additional design costs will be incurred by the governments. Online resources will be added to the ASCOBANS and WDC kid's zone website and promoted by ASCOBANS and WDC. **(ongoing starting the resources have been completed)**

## Outputs

The educational pack will help promote the need to protect Europe's marine environment and its small cetaceans, and implement the CEPA Plan by the Parties. This fulfils both the education and conservation objectives of the Agreement.

Paper-based and electronic resources will promote different teaching mechanisms and learning experience, and appeal to children of different ages and interests.

The following will be produced through this project:

1. Large, double-sided educational poster for display and photocopiable **activity sheets on the reverse**:
  - featuring the ecology and biology of the harbour porpoises
  - introducing other small cetaceans inhabiting the Agreement area
  - including colourful images and detailed, age-appropriate information
  - with photocopiable, interactive ideas for educational activities which will be printed on the back of the poster
  - including interdisciplinary worksheets that can be used during science, geography, numeracy, literacy and other lessons
  - available as a pdf to be used as a printed resource in all languages for download from the ASCOBANS kid's zone website, as well as WDC's and others to increase outreach. Target age: 8-12 years
2. An interactive educational **online animated map and games**:
  - showing where harbour porpoises can be found and threats they face in these areas
  - showing where they are protected by law and where they are not
  - what can to be done to help (games will be designed in such a way as to allow users to check how much they know about threats and to learn more via instructional feedback).
  - available on the new children's area of the ASCOBANS website (Teaching materials and Games section) and hosted on other partner websites / governmental education platforms to increase potential audience, where possible
  - Target age: 8-12

3. **Video / podcast:** “May we Introduce? The Harbour Porpoise”

- the recordings will be created by children for their peers featuring kids as educators using creative and entertaining ways of getting the conservation message across
- produced in German or English with subtitles in the other language
- with a length of around 2 minutes
- available on the new children’s area of the ASCOBANS website (Teaching materials and Games) plus might be hosted on other partner websites / governmental education platforms to increase potential audience
- Age of target: 8-12 years
- 

**Work Plan and Timetable**

Activity	Start date	End date
Develop concept and content development	October 2013	March 2014
Produce design specification	March 2014	April 2014
Design and produce materials	Poster :April 2014 Online resources: April 2014	May 2014  Dec 2014
Distribute materials	Summer 2014	ongoing

**Project Personnel**

In 2007, WDC Germany’s educational expertise was recognised and WDC’s Dolphin Diploma project won an award from the UNESCO Decade for Education and Sustainable Development.

Annika Winter, Education manager  
WDC, Implersstr.55, München  
[Annika.winter@whales.org](mailto:Annika.winter@whales.org)

Role: development of concept and content, coordination of the project.

Annika Winter – approved teacher and former leader of the international WDC education programme - is now responsible for the development of educational material in German (latest “Die Wale, das Meer und das Klima. Aktionen und Ideen für Kindergarten und Grundschule” 2013). She also creates and coordinates conservation activities for children like awards (e.g. the dolphin diploma) as well as offline and web related activities for kids.

She is author of the multilingual educational manual “All about dolphins” produced by UNEP/CMS and TUI – 2007.

Jess Feghali-Brown, UK Youth Engagement Officer  
WDC, Brookfield House, 38 St Paul Street, Chippenham, UK  
[jess.feghali-brown@whales.org](mailto:jess.feghali-brown@whales.org)

Role: development of poster design/activities alongside Education Manager; English

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translation; manage development of online resource.

WDC's Youth Engagement Officer in the UK was involved in the production and dissemination of the Dolphin Diploma during 2007/8. She has previously worked with designers and developers to create online animations and games for WDC's website, as well as a variety of educational resources used by schools. She has also provided input, help and advice into the recent development of ASCOBANS' kid's zone website.

**Budget Estimates**

Budget item	Requested from ASCOBANS	Requested/secured from other sources	Total in Euros
Design and production (electronic version) of the poster (includes inputting translated text into resource templates)	<b>3000</b>		3000
Development of an interactive animated map and a game	<b>3800</b>	1470  (in-kind support from e-learning designer)	5270
Development of the podcast	<b>2500</b>	1000  (in kind support from film production company)	3500
<b>Total in Euros</b>	<b>9300</b>	2470	11770

For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org).

## Record breakers: Fact sheet 1 - Toothed whales and dolphins

### Harbour porpoise

Length: 1.2m  
Weight: 100kg  
Adult lifespan: 15-20 years  
Blow height: 1m  
Blow shape: 2-3m diameter  
Blow sound: 100-150 Hz  
Blow frequency: 10-15 Hz  
Blow duration: 1-2 seconds  
Blow interval: 1-2 seconds  
Blow pattern: 1-2 seconds on, 1-2 seconds off



### Orca

Adult length: 3-7m  
Adult weight: 3-10 tonnes  
Blow height: 1-2m  
Blow shape: 2-3m diameter  
Blow sound: 100-150 Hz  
Blow frequency: 10-15 Hz  
Blow duration: 1-2 seconds  
Blow interval: 1-2 seconds  
Blow pattern: 1-2 seconds on, 1-2 seconds off



### Sperm whale (Cachalot)

Length: 25m  
Weight: 35 tonnes  
Adult lifespan: 60-90 years  
Blow height: 10m  
Blow shape: 2-3m diameter  
Blow sound: 100-150 Hz  
Blow frequency: 10-15 Hz  
Blow duration: 1-2 seconds  
Blow interval: 1-2 seconds  
Blow pattern: 1-2 seconds on, 1-2 seconds off



### Bottlenose dolphin

Length: 2.5m  
Weight: 1.5 tonnes  
Adult lifespan: 25-30 years  
Blow height: 1m  
Blow shape: 2-3m diameter  
Blow sound: 100-150 Hz  
Blow frequency: 10-15 Hz  
Blow duration: 1-2 seconds  
Blow interval: 1-2 seconds  
Blow pattern: 1-2 seconds on, 1-2 seconds off



## Maths questions

### level 1

- Calculate how much more a minke whale weighs than an adult harbour porpoise. (1 mark)
- What is the difference in length between a sperm whale and an adult minke whale? (1 mark)
- Calculate the difference in length between a sperm whale and a minke whale. (1 mark)
- How much longer does a humpback whale live than a minke whale? (1 mark)
- If a sperm whale is 25m long, how long would an orca have to be to have the same length as a sperm whale? (1 mark)
- What is the difference in weight between a sperm whale and a minke whale? (1 mark)

### level 2 (You can use a calculator)

- Calculate the mass of a sperm whale as a percentage of the mass of a minke whale. (2 marks)
- What is the longest blow of any whale? (1 mark)
- How much longer does a sperm whale live than a minke whale? (1 mark)
- What is the difference in length between a sperm whale and a minke whale? (1 mark)

236 decibels

34

100

## Record breakers True or False?

- The harbour porpoise is probably the smallest toothed whale.
- The bottlenose dolphin has more teeth than any other cetacean.
- The loudest noise made by a living thing is the song of a humpback whale.
- An adult minke whale can live for 20 years.
- An orca's dorsal fin can be as tall as a man.
- A new-born sperm whale can weigh half as much as a new-born humpback whale.
- Male and female orcas are the same length.
- Sperm whales only have teeth in their lower jaw.
- Blue whales are bigger than any of the dinosaurs ever.

### Multiple choice

- Which is heaviest?  
a) the sperm whale  
b) the minke whale  
c) the harbour porpoise  
d) the sperm whale
- Which of these can hold their breath longest?  
a) the humpback whale  
b) the minke whale  
c) the bottlenose dolphin  
d) the fin whale
- Which new-born calf is the longest?  
a) the minke whale  
b) the bottlenose dolphin  
c) the sperm whale  
d) the fin whale

### Fill in the gaps

- The \_\_\_\_\_ sometimes gives birth to twins.
- The blue whale eats about \_\_\_\_\_ in a day.
- The \_\_\_\_\_ whale has the longest lifespan of any cetacean.

# record breakers

The whale that sings the loudest and most complex song is the sperm whale. A humpback whale's song can last for 24 hours. The loudest noise made by a living thing is the song of a humpback whale.



Sperm whale (Cachalot)



Humpback whale

Males sing the loudest and most complex song in the animal kingdom. A humpback whale's song can last for 24 hours. The loudest noise made by a living thing is the song of a humpback whale.

### Fin whale

The fin whale is the second largest animal ever to have lived (the blue whale being the largest).



Scientists believe that bowhead whales can live for 200 years or more. And they have the longest baleen of any whale - it can be 4 or 5m long!

### Harbour porpoise

The harbour porpoise is probably the shortest-lived cetacean. Their maximum lifespan is 20 years.



In the wild, female orcas have been known to live to 80-90 years old.

### Blue whale

An adult blue whale's tongue is so big that a football team could stand on it!



The bottlenose dolphin has up to 54 teeth in each jaw.

### Bottlenose dolphin

## The world of whales & dolphins



## The world of whales & dolphins

WDCS

voice for the protection of whales, dolphins and their environment [www.wdcs.org](http://www.wdcs.org)

WDCS  
Whale and Dolphin Conservation Society

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee at its next meeting, foreseen for autumn of 2013, will consider the proposals made available to its review and select those that are a priority for funding. *Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported.* Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received **by 15 July 2013** will be made available to the Committee for their review. Funding applications received later will not be considered. Please submit your proposal in Word format.

<p><b>Title</b> A Pilot Study for Long-term Acoustic Monitoring of the Baltic and Danish Harbour Porpoises (LAMBADAH)</p>	<p><b>Justification:</b> Conservation and Management Plan Res.6.1 (part. JP) Res.7.2</p>	<p><b>Project ID:</b> 2013/04</p>
<p><b>Implementing Agency / Applicant</b></p>	<p>AquaBiota Water Research, Löjtnantsgatan 25, SE-115 50 Stockholm, Sweden Julia Carlström, e-mail: <a href="mailto:julia.carlstrom@aquabiota.se">julia.carlstrom@aquabiota.se</a>, phone: +46 8 552 302 46</p>	
<p><b>Collaborating Agencies / Other Sponsors</b></p>	<p><b>Collaborating and sponsoring projects</b> Baltic Information on the Acoustic Soundscape (BIAS). BIAS is financed by LIFE+ Environment (~50%) and national contribution (~50%). The total budget is 4,577,315 EUR. In LAMBADAH, BIAS carries most of the costs for field work in all countries but Russia, although there is no funding for CPOD anchoring consumables or for handling of CPODs and CPOD data. Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise (SAMBAH). SAMBAH is financed by LIFE+ Nature (~50%) and national contribution (~50%). The total budget is 4,244,013 EUR. In LAMBADAH, SAMBAH carries most of the costs for CPODs in all countries but Russia. Russian Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise (RUMBAH). RUMBAH has received 440 000 SEK (approximately 50,500 €) in funding from the Swedish Institute and is sponsored with CPODs by Chelonia Ltd. RUMBAH carries approximately half of the costs for field work and CPODs in Russia.</p> <p><b>Collaborating Agencies</b> The following organisations own and/or have the practical knowledge of handling CPODs and CPOD data in SAMBAH or RUMBAH, and/or are involved in the BIAS field work: Sweden: Swedish Defence Research Agency (FOI), Swedish Agency for</p>	

## ASCOBANS Project Proposal Format 2013

	<p>Marine and Water Management (SwAM)</p> <p>Denmark: National Environment Research Institute/ Aarhus University (AU), University of Southern Denmark (SDU)</p> <p>Germany: German Oceanographic Museum (GOM), Institute for Technical and Applied Physics (ITAP), German Maritime and Hydrographic Agency (BSH)</p> <p>Poland: Hel Marine Station of University of Gdańsk (UG), Foundation of the Development of University of Gdańsk (FRUG)</p> <p>Russia: SPb CPO "Biologists for nature conservation"/ Baltic Fund for Nature</p> <p>Lithuania: Coastal Research and Planning Institute of Klaipeda University (KU CORPI)</p> <p>Estonia: Tallinn University of Technology (TUT), Pro Mare</p> <p>Finland: Finnish Environment Institute (SYKE), Turku University of Applied Sciences (TUAS)</p>
<p><b>Background / Problem</b></p>	<p>Currently there is no long-term monitoring of the Baltic Sea harbour porpoise, despite that the population is listed as critically endangered by the IUCN, in Annex II and Annex IV of the EU Habitats Directive, and is a good candidate for monitoring of marine biodiversity in accordance with the Marine Strategy Framework Directive (MSFD) descriptor 1. Further, with increasing awareness of the environmental problem with underwater noise, there is a high demand of accurate measurements of the impact of underwater noise on marine mammal behaviour. In collaboration with the ongoing trans-Baltic projects BIAS, SAMBAH and RUMBAH, LAMBADAH presents a unique opportunity to collect data for (1) the development and evaluation of a methodology for cost-efficient long-term monitoring of the Baltic Sea harbour porpoise, and (2) investigation of fine-scale impact of underwater noise on harbour porpoise echolocation behaviour.</p> <p>Please see "Activities" below for how the new LAMBADAH project take advantage of the opportunity to cooperate with the ongoing BIAS, SAMBAH and RUMBAH projects.</p>
<p><b>Objectives</b></p>	<p>The main objective of LAMBADAH is to ensure that data on harbour porpoise echolocation activity is collected in conjunction with BIAS data on underwater noise, and if possible that the RUMBAH data collection is extended to cover the entire BIAS period. The LAMBADAH data will cover a full year at approximately 25-30 positions within the SAMBAH area and approximately 10-15 positions in adjacent seas.</p> <p>Due to limitations in funding, the high number of collaborators and the need for a full year of data collection, this application for LAMBADAH only covers consumables and a few working hours for the crucial data collection. Additional funding will be applied for from other agencies for analyses of the collected data with the following aims:</p> <ul style="list-style-type: none"> <li>• Develop and evaluate a methodology for cost-efficient long-term acoustic monitoring of harbour porpoise density in the Baltic region</li> <li>• Investigate fine-scale impact of underwater noise on harbour porpoise echolocation behaviour (only applicable in the south-west part of the Baltic region)</li> </ul>
<p><b>Relevance to ASCOBANS</b></p>	<p>LAMBADAH is directly relevant to the following ASCOBANS conservation objectives and recommendations:</p>

	<p>Conservation Actions in the ASCOBANS [Triennium] [Quadrennium] Work Plan 2013–20[15][16]:</p> <ol style="list-style-type: none"><li>4. Develop guidelines which Parties and stakeholders may use to reduce disturbance by noise, where possible in collaboration with ACCOBAMS and other partners.</li><li>6. Review new information on cetacean population size, distribution, structure and causes of any changes in the ASCOBANS area and make appropriate recommendations to Parties and other relevant authorities.</li></ol> <p>Objectives of the ASCOBANS Recovery Plan for Baltic Harbour Porpoises – Jastarnia Plan:</p> <ol style="list-style-type: none"><li>2. improve knowledge in key subject areas as quickly as possible; and</li><li>3. develop more refined (quantitative) recovery targets as new information becomes available on population status, bycatch and other threats.</li></ol> <p>Recommendations of the ASCOBANS Recovery Plan for Baltic Harbour Porpoises – Jastarnia Plan:</p> <ol style="list-style-type: none"><li>6. Develop and apply new techniques (e.g. acoustic monitoring) for assessing trends in abundance</li><li>8. Investigate possible detrimental effects of various types of sound and disturbance (including pinger signals, noise from vessels, wind parks or constructions and seabed exploration for oil and gas) on harbour porpoises</li></ol> <p>Objectives and recommendations of the ASCOBANS Conservation Plan for the Harbour Porpoise Population in the Western Baltic, the Belt Sea and the Kattegat:</p> <p>Objective a. Involvement of all stakeholders in the implementation of the plan and its evaluation</p> <p>Recommendation 2: Cooperate with and inform other relevant bodies about the Conservation Plan</p> <p>Objective d. Monitoring the status of the population Recommendation 7: Estimate trends in abundance of harbour porpoises in the Western Baltic, the Belt Sea and the Kattegat</p> <p>Objective e. Ensuring habitat quality favourable to the conservation of the harbour porpoise</p> <p>Recommendation 11: Restore or maintain habitat quality</p> <p>LAMBADAH will support the achievement of these objectives and recommendations by:</p> <ul style="list-style-type: none"><li>• Providing data for development and evaluation of a methodology for cost-efficient long-term monitoring of harbour porpoise density and distribution in the Baltic region</li><li>• Providing data for fine-scale analyses of the impact of underwater shipping noise on harbour porpoise echolocation behaviour and activity, the latter as an approximate measurement of harbour porpoise density</li><li>• Collaborating with the BIAS and SAMBAH projects, providing information on harbour porpoises and the impact of underwater noise that can be promoted through the BIAS and SAMBAH dissemination actions</li><li>• Providing information on monitoring for implementation the MSFD descriptor 1 (biodiversity) and 11 (noise) in all EU Member States.</li></ul>
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<b>Activities</b>	<p>In the ongoing SAMBAH project, the methodology for static passive acoustic monitoring has been developed for large-scale monitoring and adjusted to the conditions in the Baltic Sea. The knowledge of handling CPODs and CPOD data has been shared among the project collaborators in EU countries bordering the Baltic Sea, as well as with the Russian joint project RUMBAH. By the end of year 2014, SAMBAH and RUMBAH will provide a harbour porpoise density map for the project area (5-80 m depth in the Baltic Sea up to the Åland and Archipelago Seas). This density map can be used for future comparisons of potential changes in the density and distribution of the Baltic Sea harbour porpoise. However, full-scale surveys such as the SAMBAH and SCANS projects are costly and therefore only carried out with long time intervals. Thanks to the methodology of static acoustic monitoring in SAMBAH and RUMBAH, a cost-efficient way of a more continuous surveillance is to monitor the echolocation activity at a lower number of stations, calculate the local density at these stations and compare the output to the prediction in the SAMBAH density map. As the map covers the entire SAMBAH and RUMBAH project areas, the monitoring stations do not have to be located at the same positions as in the SAMBAH and RUMBAH projects. Such low intense monitoring do not replace the need for full scale monitoring completely, but it prolongs the time interval needed for full scale surveys and it gives highly important information on population changes in between the snapshots given by the full scale surveys. From an economic perspective, low intense monitoring of harbour porpoises can be combined with other marine monitoring such as that required for underwater noise according to the MSFD descriptor 11.</p> <p>In the BIAS project, underwater noise will be monitored at approximately 38 stations in the Baltic Sea from 1 December 2013 to 30 November 2014 (Figure 1). Based on the data on underwater noise, AIS ship traffic and environmental conditions, an initial assessment of underwater noise will be modelled for the Baltic Sea to fulfil the requirements of the MSFD descriptor 11. Of the BIAS positions, approximately 25 are located within the SAMBAH project area. In joint projects, Denmark and Sweden will monitor underwater noise in the Skagerrak and Kattegat Seas at approximately 5 positions and Lithuania at 1 position in the SAMBAH area. The infrastructure of these projects and the RUMBAH project will constitute the core of the data collection platforms in the LAMBADAH project. Additional potential data collection platforms are the extension of the RUMBAH data collection period at a few positions so they cover the entire BIAS field season, and any data from national acoustic monitoring of harbour porpoises obtained by the same methodology and covering the same time period.</p> <p>LAMBADAH aims at taking the opportunity of collecting data on harbour porpoise echolocation for very low additional costs in conjunction with the BIAS data collection. This will not only yield a large data set on harbour porpoise echolocation excellent for the development and evaluation of a methodology for monitoring of harbour porpoise density and distribution in accordance with MSFD descriptor 1, but also a large and highly detailed dataset for investigation of effects of shipping noise on harbour porpoise echolocation behaviour. Such information is highly demanded for national and international regulations of underwater noise to minimise negative impact on marine mammals, including further development of the MSFD descriptor 11.</p>
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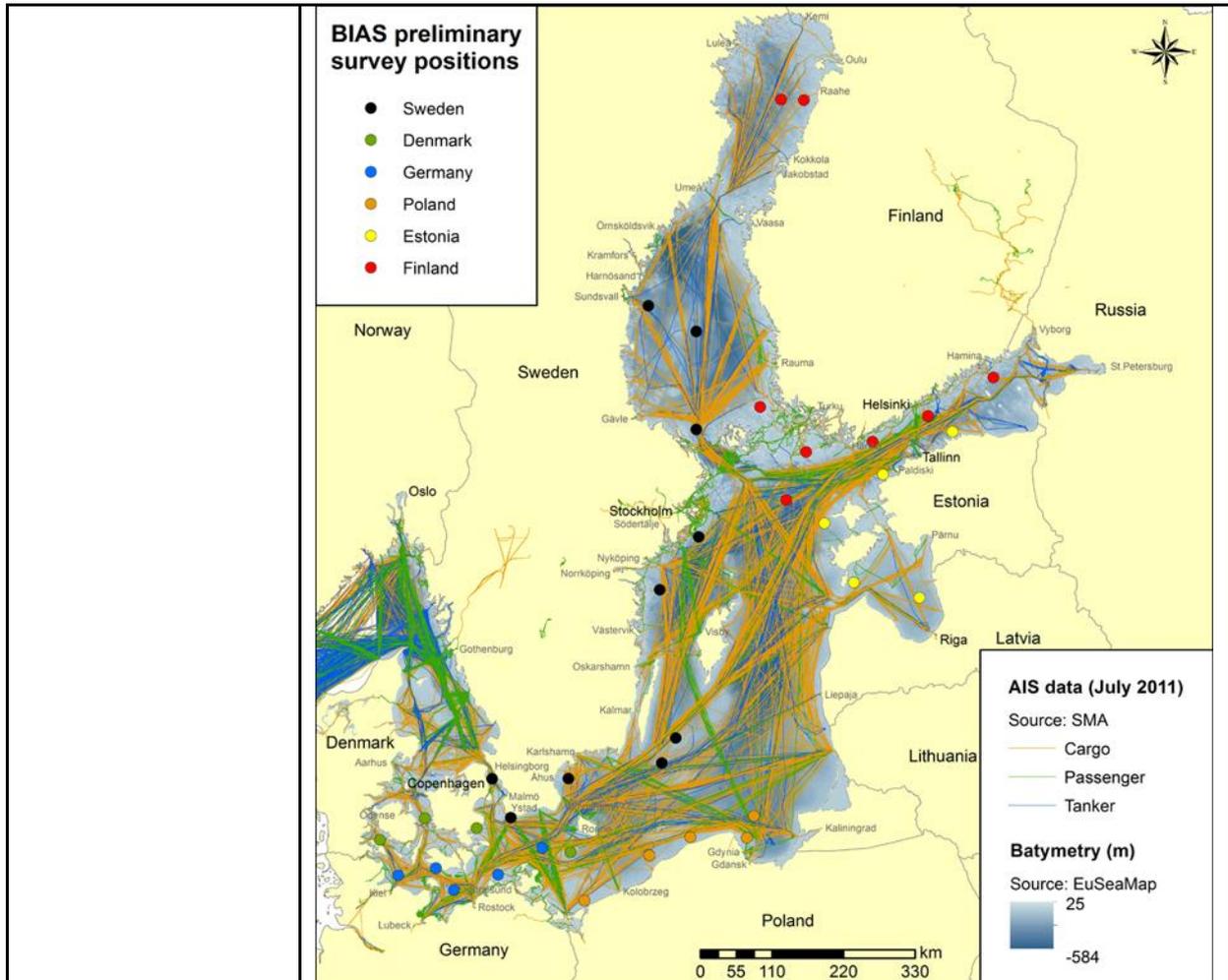


Figure 1. Preliminary positions of BIAS underwater noise loggers to be deployed December 2013 – November 2014. In the Skagerrak and Kattegat Seas, an additional 5 noise loggers are planned to be deployed in the BIAS joint projects.

**Outputs**

LAMBADAH will provide the following outputs:

- A quality assured 1-year dataset on harbour porpoise echolocation at approximately 25-30 positions within the SAMBAH area and approximately 10-15 positions in adjacent seas, available for future analyses.
- A brief report describing the methodology for simultaneous monitoring of underwater noise and harbour porpoise echolocation activity, and the data on harbour porpoise echolocation obtained by the project. Note that the report will not overlap with the more detailed standards on monitoring of underwater noise that are to be developed by the BIAS project.

Given that further funding is achieved for analyses, the data and information above will serve as a basis for the following outputs:

- Data layers with local porpoise density to be publicly accessible through e.g. the HELCOM Map and Data Service.
- A scientific paper on the potential for cost-efficient long-term acoustic monitoring of high frequency cetaceans occurring at low density, such as harbour porpoises in the Baltic region.
- A scientific paper on fine-scale impact of underwater shipping noise

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	<p>on harbour porpoise echolocation behaviour and activity</p> <ul style="list-style-type: none"> <li>• A non-technical report on the methodology for cost-efficient long-term monitoring of harbour porpoises in the Baltic region, with advantages of and important aspects for international cooperation. The report is to be distributed to all authorities responsible for the monitoring of biodiversity and underwater noise in accordance with the MSFD descriptors 1 and 11 in the Baltic region, as well as other relevant organisations.</li> </ul>
<p><b>Work Plan and Timetable</b></p>	<p>Project start: 1 September 2013. Project end: 30 April 2015.</p> <p>September 2013 – November 2013</p> <ul style="list-style-type: none"> <li>• Logistic planning and preparation of field protocols and equipment.</li> </ul> <p>December 2013 – November 2014</p> <ul style="list-style-type: none"> <li>• Data collection on harbour porpoise echolocation activity using CPODs attached to data collection platforms in the BIAS project, the BIAS joint project in the Skagerrak and Kattegat Seas, and other available platforms.</li> <li>• Upload and quality control of CPOD data on harbour porpoise echolocation activity, following the SAMBAH format.</li> </ul> <p>December 2014 – April 2015</p> <ul style="list-style-type: none"> <li>• Finalisation of upload and quality control of CPOD data on harbour porpoise echolocation activity, following the SAMBAH format.</li> <li>• Preparation of the project report.</li> </ul> <p>Delivery of outputs: 30 April 2015.</p>
<p><b>Project Personnel</b></p>	<p>LAMBADAH project coordinator and SAMBAH scientific project manager: Julia Carlström Deputy Managing Director AquaBiota Water Research Löjtnantsgatan 25 SE-115-50 Stockholm Sweden Email: <a href="mailto:julia.carlstrom@aquabiota.se">julia.carlstrom@aquabiota.se</a> Phone: +46 8 522 302 46</p> <p>BIAS project coordinator: Peter Sigray Research Director Swedish Defence Research Agency Gullfossgatan 6 SE-164 90 Stockholm Sweden E-mail: <a href="mailto:peter.sigray@foi.se">peter.sigray@foi.se</a> Phone: +46 8 5550 3640</p>

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	<p>Dr Carlström has been working on harbour porpoise conservation since 1995. Her research interest is focused on bycatch, echolocation and conservation management. She has been centrally involved in research projects on harbour porpoise bycatch assessment and mitigation, population modelling, echolocation behaviour, and acoustic monitoring. Working at the Swedish Board of Fisheries and the Swedish Environmental Protection Agency for approximately (SEPA) 2.5 years, Dr Carlström wrote the Swedish Action Plan for Harbour Porpoises. Commissioned by SEPA and the Swedish Authority for Marine and Water Management (SwAM), she has also written a proposal for a national guidance to minimise disturbance of marine mammals by underwater noise. In addition to research projects on harbour porpoises, Dr Carlström is also project and regional manager of national and international projects on marine spatial planning. Thereby she has well acquaintance with national and international management of harbour porpoises in particular and marine spatial management in general.</p> <p>Professor Sigray has a thorough research experience in electromagnetic fields, underwater noise propagation and measurements, and impact of underwater noise on fish. He shares his working time between the roles of professor at the Department of Meteorology at Stockholm University and research director at the Swedish Defence Research Agency. Professor Sigray is a member of the MSFD Task Group 11 on underwater noise, developing the indicators for how good environmental status shall be measured. Commissioned by SwAM, he has lead the Swedish working group for the MSFD descriptor 11.</p> <p>We are glad to provide CV's upon request.</p>																												
<p><b>Budget Estimates</b></p>	<p><b>Requested funding from ASCOBANS: 15,000 EUR</b></p> <p>Budget breakdown for ASCOBANS funding:</p> <table border="1"> <thead> <tr> <th><b>Task</b></th> <th><b>Amount (EUR)</b></th> </tr> </thead> <tbody> <tr> <td><i>Coordination, reporting and data compilation</i></td> <td></td> </tr> <tr> <td>AquaBiota Water Research (22 working hrs)</td> <td>2,300</td> </tr> <tr> <td>Swedish Defence Research Agency (~6 working hrs)</td> <td>700</td> </tr> <tr> <td><i>CPOD data collection, quality assurance and upload</i></td> <td></td> </tr> <tr> <td>Sweden</td> <td>2,545</td> </tr> <tr> <td>Finland</td> <td>2,182</td> </tr> <tr> <td>Estonia</td> <td>1,818</td> </tr> <tr> <td>Lithuania</td> <td>364</td> </tr> <tr> <td>Russia</td> <td>727</td> </tr> <tr> <td>Poland</td> <td>1,818</td> </tr> <tr> <td>Germany</td> <td>727</td> </tr> <tr> <td>Denmark</td> <td>1,818</td> </tr> <tr> <td><i>Sum</i></td> <td><i>15,000</i></td> </tr> </tbody> </table> <p>The budget for CPOD data collection, quality assurance and upload follows the preliminary number of LAMBDAH positions per country, i.e. positions within the SAMBAH and RUMBAH areas and further west. The budget will primarily cover costs for consumables such as ropes, buoys and other</p>	<b>Task</b>	<b>Amount (EUR)</b>	<i>Coordination, reporting and data compilation</i>		AquaBiota Water Research (22 working hrs)	2,300	Swedish Defence Research Agency (~6 working hrs)	700	<i>CPOD data collection, quality assurance and upload</i>		Sweden	2,545	Finland	2,182	Estonia	1,818	Lithuania	364	Russia	727	Poland	1,818	Germany	727	Denmark	1,818	<i>Sum</i>	<i>15,000</i>
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	<p>anchoring material needed for the CPOD data collection. As the CPODs will be anchored together with the BIAS noise loggers, there are further requirements on the anchoring setup than in the SAMBAH project. If any country would not need the entire budget for anchoring consumables, e.g. if material is available from the SAMBAH project, the funding will be used to cover some of the working time for handling of CPODs and CPOD data, i.e. the extra working time that is not covered by the BIAS or BIAS joint projects.</p> <p><b>Existing additional financial resources</b></p> <p>BIAS and the BIAS joint projects will carry most of the costs for field work within the BIAS and BIAS collaborating countries. In the BIAS project, the total cost for data collection and management thereof is approximately 2,700,000 EUR.</p> <p>SAMBAH will provide CPODs and thereby carry the costs for these in the SAMBAH countries. The current market price for 50 CPODs (40 positions + 10 spare devices) is approximately 174,000 EUR (2970 GBP per device).</p> <p>RUMBAH will carry the costs for approximately 6 months of CPOD data collection overlapping with the BIAS project. In RUMBAH, the CPODs are sponsored by Chelonia Ltd.</p> <p><b>Potential additional financial resources</b></p> <p>Additional funding for Sweden, Denmark, Finland, Lithuania and Russia is planned to be applied for from the Nordic Council of Ministers. The aim of that application is to receive funding to cover some of the costs for the working time for preparation of environmental GIS layers needed for the analyses, and some of the extra working time to handle CPODs and CPOD data, primarily in the Skagerrak and Kattegat Seas where current funding is insufficient.</p> <p>In addition to this, national funding will be applied for to cover LAMBADAH costs exceeding those carried by the BIAS and SAMBAH projects and potential financial support by ASCOBANS and the Nordic Council of Ministers.</p> <p><b>Estimated total budget</b></p> <table border="1"> <thead> <tr> <th><i>Financial source</i></th> <th><i>Sum (EUR)</i></th> </tr> </thead> <tbody> <tr> <td>ASCOBANS</td> <td>15,000</td> </tr> <tr> <td>BIAS project</td> <td>2,700,000</td> </tr> <tr> <td>SAMBAH project</td> <td>174,000</td> </tr> <tr> <td>RUMBAH project</td> <td>25,250</td> </tr> <tr> <td>Nordic Council of Ministers*</td> <td>53,600</td> </tr> <tr> <td>National funding*</td> <td>Currently unknown</td> </tr> <tr> <td><i>Total</i></td> <td><i>29,905,750+unknown</i></td> </tr> </tbody> </table>	<i>Financial source</i>	<i>Sum (EUR)</i>	ASCOBANS	15,000	BIAS project	2,700,000	SAMBAH project	174,000	RUMBAH project	25,250	Nordic Council of Ministers*	53,600	National funding*	Currently unknown	<i>Total</i>	<i>29,905,750+unknown</i>
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For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org).

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee at its next meeting, foreseen for autumn of 2013, will consider the proposals made available to its review and select those that are a priority for funding. *Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported.* Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received **by 15 July 2013** will be made available to the Committee for their review. Funding applications received later will not be considered. Please submit your proposal in Word format.

<p><b>Title</b> Preparation for SCANS-III</p>	<p><b>Justification:</b> Conservation and Management Plan Res.6.1 (part. NSP) Res.7.2</p>	<p><b>Project ID:</b> 2013/05</p>
<p><b>Implementing Agency / Applicant</b></p>	<p><i>Indicate the organization/institution or individual making the proposal, which would be responsible for the implementation of the project, if approved. Full contact details of the responsible individual should be provided.</i></p> <p>This proposal is being put forward by the Sea Mammal Research Unit, University of St Andrews, UK.</p> <p>Contact details: Claire Lacey Room B9, Bute Building Westburn Lane St Andrews Fife KY16 9TS UK</p> <p>+447841037545 Cl20@st-andrews.ac.uk</p>	
<p><b>Collaborating Agencies /</b></p>	<p><i>Indicate possible other organizations/institutions or individuals collaborating with the implementing agency in the conduct of the</i></p>	

<p>Other Sponsors</p>	<p><i>project.</i></p> <p>Whilst this proposal itself does not include other organisations, should the preparation work be successful, the SCANS-III project will involve collaboration from seven organisations and ten countries within the ASCOBANS area.</p> <p>Initial financial support was provided for the start-up stages of this work by the Department for Energy and Climate Change (DECC), UK</p>
<p><b>Background / Problem</b></p>	<p><i>Briefly describe issues/problems to be addressed by the project. Please indicate whether the proposed project is a new activity and its possible linkages with already ongoing/planned initiatives.</i></p> <p>A series of large scale surveys for cetaceans in European Atlantic waters was initiated in 1994 (SCANS; Hammond et al. 2002) and continued in 2005 (SCANS-II; Hammond et al. 2013) and 2007 (CODA 2009) with the purpose of providing estimates of abundance needed to put bycatch in a population context and to allow EU member States to discharge their responsibilities under the Habitats Directive. The frequency of these surveys is intended to be approximately decadal; a third survey is now due.</p> <p>In the mid-1990s, the primary need was for comprehensive abundance estimates but, increasingly, there has been an additional need for robust assessments of the impact of human activities and for consistent Europe-wide monitoring and reporting.</p> <p>SCANS-II and CODA incorporated work to develop management frameworks for determining safe limits to harbour porpoise and common dolphin bycatch to meet specified conservation objectives. SCANS-II also included work to inform methods for monitoring abundance at temporal and spatial scales smaller than covered by the large-scale surveys. This work has only partially been utilised and it is now imperative to make significant progress to enable EU Member States together to achieve Good Environmental Status under the Marine Strategy Framework Directive.</p> <p>The current project, SCANS-III, will estimate current abundance of cetaceans in the European Atlantic, use these results and additional information to assess the impact of direct mortality caused by human activities, and use a focused comparison of methods to create a best practice guide for monitoring to inform European Directives. It is hoped that this initiative will be funded via the EU Life + funding stream and a proposal will be submitted in 2014. Preparing a proposal of this magnitude and number of stakeholders is, however, a significant undertaking. This application to ASCOBANS is for funding to pay the part-time salary of a coordinator to lead the proposal preparation and drive this project forward.</p>

	<p>References</p> <p>- CODA (2009). Cetacean Offshore Distribution and Abundance in the European Atlantic. <a href="http://biology.st-andrews.ac.uk/coda/">http://biology.st-andrews.ac.uk/coda/</a>.</p> <p>-Hammond, PS, Berggren, P, Benke, H, Borchers, DL, Collet, A, Heide-Jørgensen, MP, Heimlich, S, Hiby, AR, Leopold, MF &amp; Øien, N (2002). Abundance of harbour porpoises and other cetaceans in the North Sea and adjacent waters. <i>Journal of Applied Ecology</i> 39: 361-376.</p> <p>-Hammond, PS, Macleod, K, Berggren, P, Borchers, DL, Burt, ML, Cañadas, A, Desportes, G, Donovan, GP, Gilles, A, Gillespie, D, Gordon, J, Hiby, L, Kuklik, I, Leaper, R, Lehnert, K, Leopold, M, Lovell, P, Øien, N, Paxton, CGM, Ridoux, V, Rogan, E, Samarra, F, Scheidat, M, Sequeira, M, Siebert, U, Skov, H, Swift, R, Tasker, ML, Teilmann, J, Van Canneyt, O &amp; Vázquez, JA (2013). Cetacean abundance and distribution in European Atlantic shelf waters to inform conservation and management. <i>Biological Conservation</i>. 164:107-122</p>
<p><b>Objectives</b></p>	<p><i>Briefly specify the project objective as the overall intended achievement. This part should include one or two main objectives, possibly supplemented by more specific objectives, which could provide more structure to the design of the project. Objectives are intended goals and should be clearly distinguished from outputs and activities.</i></p> <p>The overall objective of this application is to obtain sufficient funding to pay the part-time salary of a coordinator to lead the SCANS-III Life+ bid to the EU, which will be submitted for consideration in 2014.</p> <p>The objectives of the overall SCANS-III project, should it be funded, are as follows:</p> <ol style="list-style-type: none"> <li>1. Estimate the abundance of cetacean species in shelf and oceanic waters of the European Atlantic</li> <li>2. Create a common European Atlantic database for cetacean abundance data</li> <li>3. Collate data and create “threat layers” for bycatch and shipping for cetaceans in the European Atlantic</li> <li>4. Assess the impact of and determine safe limits to mortality due to bycatch and shipping for cetacean populations in the European Atlantic</li> <li>5. Test existing and emerging methods to create best practice guidance for monitoring cetacean populations under European Directives</li> </ol>
<p><b>Relevance to ASCOBANS</b></p>	<p><i>Only projects directly relevant to the conservation objectives of ASCOBANS will be supported. Briefly explain the pertinence of the project for the attainment of ASCOBANS goals and justify by explaining how the project helps to address the relevant Activities in the Agreement’s Triennium Work Plan. Include references to other decisions or documents/instruments produced within the Agreement, such as the Agreement’s Conservation and Management Plan, Resolutions or actions recommended by the Advisory Committee as appropriate.</i></p> <p>As stated, this proposal is for funds to prepare a proposal for</p>

	<p>funding for SCANS-III. The work to be carried out as part of the SCANS-III project following successful application for funding is of direct relevance to the conservation objectives of ASCOBANS. Data collected under SCANS-III objective 1 (see box above) relates directly to Action 7 of the ASCOBANS Conservation Plan for harbour porpoises (<i>Phocoena phocoena</i> L.) in the North Sea. Additionally, Objectives 3 and 4 of SCANS-III will inform Actions 6, 11 and 12 of the harbour porpoise Conservation Plan. The large scale of the SCANS-III project will allow these Actions to be informed throughout European Atlantic waters and for multiple cetacean species, in addition to harbour porpoises.</p>
<p><b>Activities</b></p>	<p><i>Briefly describe the work or the tasks to be performed. As the main element of the project's design, this section should outline the methodologies to be employed, personnel and equipment needs, location and expected duration of individual actions. Actions should be clearly related to the outputs described below.</i></p> <p>Whilst the primary output of this work is to prepare the SCANS-III proposal for submission to LIFE+, this will encompass several composite tasks, all contributing to the primary objective.</p> <ul style="list-style-type: none"> <li>• Establish a focal point for organisation and communication at SMRU, St Andrews</li> <li>• Co-ordinate all administrative and technical preparatory work on behalf of project partners</li> <li>• Organise and support workshop to discuss and finalise project work (administrative and technical)</li> <li>• Undertake analysis of existing data to determine how much survey effort (and therefore resources) are required</li> <li>• Secure support (financial and in-kind) from range states</li> <li>• Liaison with other survey initiatives (T-NASS 2015; ACCOBAMS Mediterranean survey)</li> <li>• Draft and submit proposals to the European Commission, Eurofleets and other bodies, as appropriate</li> </ul>
<p><b>Outputs</b></p>	<p><i>Indicate the specific products or services (e.g. reports, publications) produced by the activities to achieve the project objectives, including scientific, conservation and management and educational outputs.</i></p> <p>The output of this work will be a robust, thorough and well constructed proposal, submitted to the EU for consideration under the 2014 round of LIFE+ funding.</p>

<p><b>Work Plan and Timetable</b></p>	<p><i>As a general rule, small-scale projects funded by ASCOBANS should be completed within one year, and their expected duration should not exceed 2-3 years. Indicate proposed beginning and end dates.</i></p> <p><i>The work plan sets out the timetable for carrying out project activities and the delivery of outputs. The timetable should include start and end dates for each activity and indicate who is responsible for its implementation. The information is best presented as a table.</i></p> <p>Preparation work for all actions will commence in January 2014 and responsibility for completion of each will rest with the SCANS-III Coordinator, Claire Lacey</p> <table border="1"> <thead> <tr> <th>Action</th> <th>End Date</th> </tr> </thead> <tbody> <tr> <td>Progress report</td> <td>31 March 2014</td> </tr> <tr> <td>G(0) Workshop to finalise aerial survey methodology</td> <td>Summer 2014 – date to be confirmed</td> </tr> <tr> <td>Report from G(0) workshop</td> <td>30 September 2014</td> </tr> <tr> <td>Submitted proposal to Eurofleets for ships for SCANS-III</td> <td>30 September 2014*</td> </tr> <tr> <td>Submitted proposal for SCANS-III</td> <td>30 September 2014*</td> </tr> <tr> <td>Final report of work undertaken, including coordination and technical activities</td> <td>30 September 2014*</td> </tr> </tbody> </table> <p>*estimated deadline – proposal deadline has not yet been announced.</p>	Action	End Date	Progress report	31 March 2014	G(0) Workshop to finalise aerial survey methodology	Summer 2014 – date to be confirmed	Report from G(0) workshop	30 September 2014	Submitted proposal to Eurofleets for ships for SCANS-III	30 September 2014*	Submitted proposal for SCANS-III	30 September 2014*	Final report of work undertaken, including coordination and technical activities	30 September 2014*
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<p><b>Project Personnel</b></p>	<p><i>Name, position, affiliation, contact details, role within the project and a brief profile should be given for at least the most prominent members of the project team. Succinct CV can be attached to the project proposal.</i></p> <p>The SCANS-III Coordinator will be Claire Lacey (CV attached), supervised by the SCANS-III project Principal Investigator, Prof. Phil Hammond.</p>														
<p><b>Budget Estimates</b></p>	<p><i>Every project proposal must include a detailed project budget. A breakdown of the expected costs of the project should be prepared. Purchase of non-expendable equipment through ASCOBANS funding is accepted only exceptionally, and the equipment will remain the property of UNEP/ASCOBANS, which will decide at the closure of the project on its disposal or retention.</i></p> <p><i>The budget should include not only the funds requested of ASCOBANS, but also possible other financial resources made available by other sponsors or collaborating agencies. The budget should be presented in a tabular format and, where applicable, should clearly indicate the expected source of the various amounts budgeted.</i></p> <p>The coordinator position is currently funded by DECC (UK Department of Energy and Climate Change) but funding will end at the end of December 2013. This proposal is for continuation funding from January 1st 2014 – End September 2014 by which time the EU Life proposal will have been submitted. Although the</p>														

	submission date is not yet available for this funding stream, early indications are that it will have an autumn submission deadline.	
	<b>Item</b>	<b>Total (Euros)</b>
	SCANS III Coordinator 10 days per month	Nine months required at 1,305 Euros per month  11,745
	<b>Aerial G(0) workshop</b>	
	Travel and subsistence for invited participants	Maximum of 10 participants estimated  2,700
	Room Hire	1 day  400
	Printing and additional expenses	  155
	<b>Aerial G(0) workshop Total</b>	
	<b>Total</b>	

For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org).

## Curriculum Vitae – Claire Lacey, C. Env

Surname:	<b>Lacey</b>	<b>Tel:</b> 01334 828866
First name(s):	Claire	<b>Mobile:</b> 07841037545
Address:	Braeview, Chance Inn, Cupar, Fife. KY15 5QJ	
Date of Birth:	6 September 1979	<b>Email:</b> clacey45@gmail.com
Nationality:	British	
<b>Full, clean UK Driving licence</b>		
Academic Training/ Education:	1998 - University of St Andrews 2002	<b>BSc (Hons) Marine and Environmental Biology:</b> <b>Thesis title:</b> Can acoustic analysis be used to study group-structure in sperm whales?
	2012 - University of Edinburgh (ongoing)	MSc: Biodiversity, Wildlife and Ecosystem Health. Distance Learning.
Current Appointments:	Sea Mammal Research Unit – Project Coordinator – Distribution of Small Cetaceans in the Atlantic Project (SCANS III)	Nov 2012 - to date
	Scottish Windfarm Bird Steering Group – Data and Research Coordinator	Jan 2013
Employment History	<ul style="list-style-type: none"> <li>• Research Scientist, SMRU Ltd, St Andrews</li> <li>• Research Assistant, Sea Mammal Research Unit, St Andrews</li> <li>• Program Assistant, Song of the Whale Research Team, International Fund for Animal Welfare</li> <li>• Marine Mammal Observer – SCANS-II</li> <li>• Field Assistant, University of St Andrews, Sea Mammal Research Unit</li> </ul>	2009 - 2012 2009 2002 – 2009  2005 2001
Membership of Professional Institutions:	<ul style="list-style-type: none"> <li>• Chartered Environmentalist Status achieved</li> <li>• Elected as Secretary of IEEM Scottish Section Committee</li> <li>• Elected to IEEM Scottish Section Committee</li> <li>• Member of the MMOA Executive Committee</li> <li>• Full member of the Institute Ecology and Environmental Management (IEEM)</li> <li>• Full member of the Marine Mammal Observers Association (MMOA)</li> </ul>	2013 2012 2011 2011 - 2013 2010 2010
Summary of Professional Experience	<p>Over 13 years extensive experience working on marine predators in both the research and commercial arenas. Experience includes the development of practical, management and analytical skills required to lead field based research programs and commercial contracts. Specialist areas include the use of passive acoustic techniques to monitor marine mammals and the implementation of a variety of different survey methodologies.</p> <ul style="list-style-type: none"> <li>• <b>Environmental Consultancy:</b> Thorough grounding in all aspects of marine fauna focussed consultancy work, including the production of ES chapters for EIA, technical reports, impact assessments, baseline characterisation and guidance documents. Sectors include SNCBs, civil engineering and oil &amp; gas with a primary focus on renewable energy developments.</li> <li>• <b>Ecological Surveys:</b> Extensive experience in conducting ecological surveys for a range of taxa including bird and mammal species</li> <li>• <b>Data Management:</b> Highly experienced in manipulating and maintaining large and complex datasets including those collected for acoustic and visual survey data and photo ID databases</li> <li>• <b>Development and application of novel technologies:</b> Published work on the development of photogrammetric techniques to remotely measure body size in both cetaceans and basking sharks using non-invasive techniques. Developed a novel application of passive acoustics to track the underwater movements of small odontocete relative to marine structures.</li> </ul>	
Geographic Experience:		
Europe	UK, Ireland, Iceland, Faroe Islands, France, Spain, Italy, Portugal, Denmark, Germany, Turkey, Greece, Azores, Canaries, Madeira.	
Global	US, Canada, Caribbean, Hong Kong, Morocco, Mauretania, Libya, Gabon, Sierra Leone	

**Specific Experience:****Environmental Consultancy**[Return to Key Qualifications](#)

**Research Scientist: SMRU Ltd. June 2009 – Dec 2012.** As one of a small team of scientists employed at SMRU Ltd, I have worked on a wide variety of different commercial projects for a range of clients, including renewable energy, Oil and Gas, Defence and Statutory Nature Conservation Bodies.

Specific projects include:

- Use of static acoustic equipment (C-PODS) to monitor cetacean activity for a variety of energy developments including nuclear power stations and renewable energy devices. Contributions included project management, array design, commissioning and specification of moorings, field work and data analysis.
  - Initial set-up of a PAM array, and training of PAM Operators to provide mitigation for Chinese white dolphins, Hong Kong, as part of mitigation strategy during near-shore construction operations.
- Conducting baseline surveys and related reporting for a gas pipeline in Gamba, Gabon;
- Quality assurance service for marine mammal aerial survey images;
- Passive Acoustic investigation of the potential for barrier effects of harbour porpoises within the Great Belt, forming part of the Fehmarnbelt Fixed Link EIA;
- Author of a report commissioned by Natural England to suggest conservation and recovery programmes for a specified list of marine species;
- Fieldwork coordinator and cruise leader for combined seabird and marine mammal surveys conducted at a proposed Scottish windfarm site, as well as data analysis and reporting
- Baseline review, data analysis and contribution to impact assessment for R3 Offshore wind development site in England.
- Significant contribution to production of *Scottish Natural Heritage Guidance on Survey and Monitoring in Relation to Marine Renewables Deployments in Scotland. Volume 2: Cetaceans and Basking Sharks*, and *Volume 3: Seals*.
- Extensive literature reviews for sites and developments ranging from renewable energy in the north of Scotland to harbour developments in Sierra Leone
- Work as a JNCC Marine Mammal Observer for Weidlinger Associates
  - Considerable experience using PAMGuard and C-POD software for both data collection and analysis.

**Associated Publications:**

- Hiscock, K., Bayley, D., Pade, N., Lacey, C., Cox, E., Enever, R. (2012). Prioritizing action for recovery and conservation of marine species: a case study based on species of conservation importance around England. *Aquatic Conserv: Mar. Fresw. Ecosyst.* Published online.
- Lacey, C., Gillespie, D., Quick, N. (In prep). Using novel passive acoustic techniques to study fine scale behaviour of odontocetes relative to marine structures.

**Ecological Surveys**[Return to Key Qualifications](#)

I have over 11 years' experience conducting ecological surveys covering a wide variety of taxa, habitats and survey protocols.

- I am currently working part time with the University of St Andrews, Sea Mammal Research Unit, co-ordinating the initiation phase of the SCANS-III project. The SCANS surveys are decadal marine mammal surveys of European waters involving a range of stakeholders and a large amount of international collaboration. This role covers aspects of project design, meetings with stakeholders, organisation of logistics and funding applications as well as the survey work itself which will follow in the future.
- I have conducted over 30,000 nautical miles of survey for marine mammals using both visual and acoustic methodologies whilst working with the Song of the Whale Research Team, International Fund for Animal Welfare. This covered a wide range of species including both national and international waters.
- 18 months of marine mammal and seabird surveys whilst working at SMRU Ltd collecting baseline data for a windfarm off the coast of Scotland.
- As well as participating as an observer on the surveys mentioned above, I also had the role of survey co-ordinator and was responsible for organising surveys, observers and survey vessels; co-ordinating acoustic and visual marine mammal data collection and seabird data collection; ensuring the correct adherence to survey protocols and overall responsibility for data.
- To improve my knowledge of estimating animal populations beyond participating on surveys, I have attended all three of the Distance Sampling workshops held by the Centre for Research into Ecological and Environmental Management (CREEM). This has provided me with a thorough understanding of the principles of survey design and analysis to compliment my previous knowledge

**Associated Publications:**

- Boisseau, O., Lacey, C., Lewis, T., Thorne, T., Moscrop, A., Gillespie, D., Aguilar de Soto, N. (In prep). Mid-Atlantic Surveys for beaked whales: the potential for acoustic prediction of critical habitats. Marine Ecology Progress Series
- Lewis, T., Matthews, J., Boisseau, O., Danbolt, M., Gillespie, D., Lacey, C., Leaper, R., McLanaghan, R., Moscrop, A. (In Prep). Abundance estimates for sperm whales in the Mediterranean Sea from passive acoustic line-transect surveys.
- Boisseau, O., Lacey, C., Lewis, T., Moscrop, A., Danbolt, M., McLanaghan, R. (2010). Encounter rates of cetaceans in the Mediterranean Sea and contiguous Atlantic area. *J. Mar. Biol. Ass. U.K.*, 90: Special Issue 08, 351583 - 1588
- Boisseau, O., Lacey, C., Lewis, T., Thorne, T., Moscrop, A., Gillespie, D. and Aguilar Soto, N. (2009). Mid-Atlantic surveys for beaked whales: The potential for acoustic prediction of critical habitats. *Poster presented to the 23<sup>rd</sup> Annual Conference of the European Cetacean Society*, Istanbul, Turkey
- T. Lewis, D. Gillespie, C. Lacey, J. Matthews, M. Danbolt, R. Leaper, R. McLanaghan and A. Moscrop. (2007). Sperm whale abundance estimates from acoustic surveys of the Ionian Sea and Straits of Sicily in 2003. *J. Mar. Biol. Ass. U.K.*, 87:1, 353-358
- Lewis, T., Gillespie, D., Lacey, C., Matthews, J., Danbolt, M., Leaper, R., Moscrop, A. and McLanaghan, R. (2006). Sperm whale abundance estimates from Acoustic surveys of the Ionian Sea and Straits of Sicily in 2003. *Poster presented to the 20<sup>th</sup> Meeting of the European Cetacean Society*. Gdynia, Poland; 02-07 April 2006
- Gillespie, D., Berggren, P., Brown, S., Kuklik, I., Lacey, C., Lewis, T., Matthews, J., McLanaghan, R., Moscrop, A. and Tregenza, N. (2005) The relative abundance of harbour porpoises *Phocoena phocoena* from acoustic and visual surveys in Baltic waters during 2001 and 2002. *Journal of Cetacean Research and Management*. 7:(1).51-57
- Lacey, C; Gordon, J. (2003). Can acoustic analysis be used to study group structure in sperm whales? *Poster presented to the 17th Meeting of the European Cetacean Society*, Las Palmas, Gran Canaria.

**Data Analysis and Management**[Return to Key Qualifications](#)

Conducting surveys inevitably results in the accumulation of very large datasets, and I have become very proficient at managing these accurately and effectively.

Whilst working with the Song of the Whale Research Team (2002 – 2009), I was responsible for maintaining the survey database containing all data collected during each field season. This comprised visual sightings data, acoustic data, recordings of observer effort, GPS locations and environmental data.

In addition to the survey database, I was also responsible for the maintenance of the archive of photographic material collected during field work and built up of over 5000 images and species specific photo identification catalogues.

Whilst at SMRU Ltd (2009 – to 2012) I was responsible for the maintenance of data collected during a wide range of fieldwork. I had responsibility for cleansing, maintaining and analysing data contained therein.

I currently do some part time work for the Scottish Windfarm Bird Steering Group maintaining their catalogue of onshore windfarm data

I am proficient with GIS software, Microsoft Access and Excel for interrogating large datasets.

**Novel Techniques**[Return to Key Qualifications](#)

I have a proven track record establishing novel research solutions to impact assessment questions. During my time at IFAW, I worked extensively on adapting the use of established video-tracking and photogrammetric techniques to allow the estimation of body length in basking sharks.

During the work on the Fehmarnbelt Fixed Link EIA, I, along with a colleague, utilised a novel technique of adapting conventional hydrophone arrays to track fine scale movements of harbour porpoises around underwater marine structure.

**Associated Publications:**

- Lacey, C; Leaper, R; Moscrop, A; Gillespie, D; McLanaghan, R; Brown, S (2010). Photo-grammetric measurements of swimming speed and body length of basking sharks observed around the Hebrides, Scotland. *J.Mar.Biol.Ass UK*. 90: (2): 361 – 366.
- Lacey, C., Gillespie, D., Quick, N. (2012). Introducing PAMLA: Using passive acoustic techniques to study fine scale behaviour of odontocetes. Poster presented to EIMR (Environmental Interactions of Marine Renewable Energy Technologies) International Conference – Orkney. Winner of Poster Competition.

<b>Recent CPD and other relevant certification</b>	<a href="#" style="color: white; text-decoration: none;">Return to Key Qualifications</a>
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Attained Chartered Environmentalist (C.Env) Status	Feb 2013
<b>Course:</b> Introduction to Density Estimation through Passive Acoustic Monitoring Centre for Research into Ecological and Environmental Modelling (CREEM)	August 2012
<b>Course:</b> Introductory Distance Sampling Workshop Centre for Research into Ecological and Environmental Modelling (CREEM)	August 2011
<b>Course:</b> Advanced Distance Sampling Workshop Centre for Research into Ecological and Environmental Modelling (CREEM)	September 2011
<b>Course:</b> Advanced Environmental Impact Assessment – Environmental Academy	April 2011
<b>Course:</b> Introduction to Environmental Impact Assessment - Environmental Academy	January 2011
<b>Course:</b> Statistical modelling Workshop Centre for Research into Ecological and Environmental Modelling (CREEM)	January 2011
<b>Course:</b> ArcGIS Foundation Training Course - ExeGesIS	November 2010
<b>Course:</b> PAMGuard course	August 2009
<b>Certification:</b> JNCC MMO certificate	July 2009
<b>Certification:</b> ENG-1 Seafarer medical certificate	Renewal date: 07/09/2013
<b>Certification:</b> Personal survival techniques (sea survival) (STCW Table A – VI/I-I)	February 2007
<b>Certification:</b> RYA Yachtmaster theory certificate	2007
<b>Certification:</b> RYA Powerboat certificate (level 2)	2000

<b>Other skills and interests</b>	<a href="#" style="color: white; text-decoration: none;">Return to Key Qualifications</a>
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I have a keen interest in ecology which persists outside of work. I am Secretary of Fife Bat Group and regularly participate in acoustic surveys, box checks and hibernacular trips at a variety of sites around Fife.

In terms of entirely non-ecology related interests, I run a small business making and selling wedding stationery, and love spending what time is left over walking with our dogs.

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee, which meets annually in March/April, will consider the proposals made available to its review and select those that are a priority for funding. *Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported.* Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received **by 15 July** of each year will be made available to the Committee for their review. Funding applications received later will not be considered until the following year.

<p><b>Title</b></p> <p><b>Conservation of a small population in a big scenario: An integrative approach to understand the status of the bottlenose dolphin from the Sado estuary (Portugal)</b></p>	<p><b>Justification:</b> Conservation and Management Plan Res.7.2</p>	<p><b>Project ID:</b> 2013/06</p>
<p>Implementing Agency / Applicant</p>	<p><b>Dr. Inês Carvalho</b> Population and Conservation Genetics Group Instituto Gulbenkian Ciência Rua da Quinta Grande, 6 2780-156 Oeiras, Portugal Phone: +351934253236 Email: <a href="mailto:icarvalho@igc.gulbenkian.pt">icarvalho@igc.gulbenkian.pt</a></p> <p><b>Dr. Lounés Chikhi</b> Population and Conservation Genetics Group Instituto Gulbenkian Ciência Rua da Quinta Grande, 6 2780-156 Oeiras, Portugal Email: <a href="mailto:chikhi@igc.gulbenkian.pt">chikhi@igc.gulbenkian.pt</a></p> <p><b>Prof. Graham J. Pierce</b> School of Biological Sciences (Zoology) University of Aberdeen Tillydrone Avenue Aberdeen, AB24 2TZ Aberdeen, UK Email: <a href="mailto:g.j.pierce@abdn.ac.uk">g.j.pierce@abdn.ac.uk</a></p>	

<p>Collaborating Agencies / Other Sponsors</p>	<p>Collaborating Agencies <b>Associação para as Ciências do Mar</b> Edifício ICAT - Campus FCUL 1749-016 Lisboa, Portugal</p> <p><b>Escola de Mar</b> Edifício ICAT - Campus FCUL 1749-016 Lisboa, Portugal</p> <p><b>Reserva Natural do Estuário do Sado</b> Instituto da Conservação da Natureza e Florestas (ICNF) Praça da República, 2900-587 Setúbal, Portugal</p> <p>Other Sponsor <b>Tróia Natura S.A.</b> Edifício Administrativo de Troia Ponta do Adoxe 7570-779 Carvalhal, Portugal</p>
<p><b>Background / Problem</b></p>	<p>Understanding population structure is a major issue for cetacean conservation and, particularly, identifying of management units (MUs) is crucial for monitoring and regulating the effects of human activity upon the abundance of populations and species. A broad variety of methodologies has been used to discriminate populations in cetaceans and each has its specific time scales: generations to evolutionary times for genetic and morphometric studies, days to life-time for ecological tracers (e.g. stable isotopes, organic contaminants) and vital rates (e.g. fecundity, survival), days to years for behavioural studies (e.g. telemetry, photo-id). The conservation of endangered species or populations therefore relies on the integration of information relevant over as many time scales as possible (Evans and Tielmann, 2007).</p> <p>Bottlenose dolphins (<i>Tursiops truncatus</i>) have a cosmopolitan distribution and are found both in coastal and offshore waters and throughout their range, coastal populations can occur in discrete locations either seasonally or year round (Wells and Scott, 2002) and their range in Europe covers the entire ASCOBANS region. This species is recorded in the EU Habitats Directive (Directive 92/43/EEC) as a Species of Special Interest, the protection of which requires the designation of Special Areas of Conservation (SACs) by the EU State Members under Annex II and IV.</p> <p>The bottlenose dolphin population inhabiting the Sado estuary region is one of the few resident populations of this species in Europe. This small population, presently with only 27 individuals, inhabits a degraded and polluted estuarine environment (Sequeira et al 2009). Dedicated boat surveys and photo-identification studies have been carried out in the Sado estuary since the 1980s have</p>

	<p>revealed year round long-term site fidelity, aging population, atypical social structure associations, high calf/juvenile mortality and a declining population in the last decades (Augusto et al 2011; Gaspar 2003). However the information related with Sado population structure and the interactions or genetic exchanges between the resident group and adjacent, sympatric non-resident groups of bottlenose dolphins is limited to just one work (Fernandez et al 2011) that used very few samples (only 5) from the Sado.</p> <p>In 2009, recognizing the uniqueness of the Sado population, the Portuguese Institute for Nature Conservation (ICNF), approved the <i>Action Plan for the Conservation and Monitoring of the Bottlenose dolphins Population of Sado Estuary</i> (Sequeira et al 2009). Under this conservation plan the ICNF defined several priorities actions, two of them are to understand the relationships between the resident and neighbouring populations and characterize them at the genetic, physiological and toxicological level with a stress on the Sado population. Therefore, insights into the population structure and health of this emblematic population is urgently required for implement appropriate management measures and definition of a Special Area of Conservation (SAC) for this population.</p>
<p><b>Objectives</b></p>	<p>This project aims at providing new data into the origins, evolution and conservation of the Sado population.</p> <p>This study will combine molecular, chemical tracers and environmental data to address fundamental questions regarding the population and social structure of both resident and non-resident populations of bottlenose dolphins along the central Portuguese coast and at a wider scale using collaborations to access samples from other regions. These integrative analyses offer an opportunity to investigate if and how fine-scale habitat variation and behavioural plasticity influence social and/or genetic population structuring.</p> <p>Specific aims are:</p> <ol style="list-style-type: none"> <li>1. Evaluate the genetic structure of bottlenose dolphins at different geographic scales to quantify the level of isolation of the Sado population and identify possible migrants between resident and non-resident populations using several multi-locus approaches.</li> <li>2. Use novel inferential methods to infer the demographic history of these populations.</li> <li>3. Study relatedness and social kin associations in resident and non-resident bottlenose dolphins.</li> <li>4. Use a “seascape genetics” approach combining high-coverage environmental information and genetic data to identify the environmental/habitat features that best explain genetic patterns.</li> <li>5. Examine the organochlorine profiles of individuals inhabiting different areas (resident and non-resident), to assess population structuring and potential geographical isolation between groups.</li> </ol>
<p><b>Relevance to ASCOBANS</b></p>	<p>Under the ASCOBANS Advisory Committee and Work Plan 2013-2016, the proposed project will be relevant in several ways:</p>

## ASCOBANS Project Proposal Format

	<ol style="list-style-type: none"> <li>1. It will help to promote effective conservation of the Sado population, and will help to elucidate the general processes that may explain population structure in similar environments, thus contributing to conservation of the species on a broader scale.</li> <li>2. It will address a key element to point 6 of the work plan activities to “Review and catalyse new information on small cetacean population size, distribution, structure...”.</li> <li>3. Since this project will combine genetic data with contaminants levels can add relevant information to point 2 - “Review new information on pollution, including marine debris, and its effects on small cetaceans that occur in the ASCOBANS area...”</li> <li>4. Since this project is under a National Conservation Plan for this population, information on the project itself, including information on bottlenose dolphins will be made public, and ASCOBANS will be mentioned.</li> <li>5. This study will also provide substantial support for the planned ASCOBANS activity, TURSIOPS SEAs project.</li> </ol>
<p><b>Activities</b></p>	<p>This project will be implemented under the above mentioned and ongoing <i>ICNF Action Plan</i>, funded by TroiaNatura S.A. It will be undertaken at the Population and Conservation Genetics (PCG) Group from <i>Instituto Gulbenkian Ciência</i> (IGC) that has a strong background in the conservation genetics of threatened mammals, and in the development of genomic markers (microsatellites and SNPs) and statistical and modeling approaches (e.g. Quéméré et al 2010; Parreira et al 2009; Sousa et al 2009). This project will also be developed in collaboration with the group of Evolution and Ecology from Institute of Biological and Environmental Sciences at University of Aberdeen. This research unit focus on the study of interactions that contribute to the understanding, management and conservation of marine populations, and has been involved in several projects related with bioaccumulation of contaminants in small cetaceans (e.g Pierce et al 2008; Murphy et al 2008; Lahaye et al 2006).</p> <p>- Sample collection</p> <p>Biological samples are been collected until the end of 2013 through the “<i>Bottlenose dolphins: Habitat and Sympatry</i>” project within the ICNF Action Plan. This project is developed by Escola de Mar and Associação para as Ciências do Mar organizations involved in cetacean research in the study area since 2007. Skin and blubber samples will be obtained from resident and non-resident bottlenose dolphins along the central coast of Portugal using a biopsy darting system for small cetaceans (Finn Larsen, Ceta-Dart) (ICNF permit nº83/2013/RECOL). In the resident population only the adults will be biopsied. Samples from stranded animals (75 samples) will also be used for genetic analyses, including samples stored in national museums, aquariums, particular collections and also in the ICNF stranding database. Additionally, samples from other regions: Madeira (Museu da Madeira), Azores (DOP - Azores University), Galiza (CEMMA) and Cádiz/Gibraltar (CIRCE) will also be use for the genetic analysis.</p> <p>- Genetic Markers</p>

	<p>a) Mitochondrial DNA control region - this highly variable marker has been widely exploited in a number of cetacean species hence providing useful information on female population structure</p> <p>b) Microsatellites - 20-30 microsatellites already available for bottlenose dolphins will be used</p> <p>c) Histocompatibility Complex (MHC) – This region is involved in the immune response (including reproductive success) and will provide information on the genetic health of the different populations. A lack of variation at the MHC may increase the susceptibility of an isolated population to infectious disease epidemics (Bowen et al 2002). Analysis of the MHC (especially the <i>DQB</i> or <i>DRB</i> genes) provides a mechanism to relate functionally important genetic diversity with environmental stresses (Cohen 2002).</p> <p>d) Genomic Single Nucleotide Polymorphism (SNPs) – Access to good quality samples will allow us to develop a RAD-seq (Miller et al. 2007; Hohenlohe et al. 2010) approach to identify genomic variable markers using a next generation sequencing platform as is currently done in the PCG for endangered mammals. SNPs represent an extraordinary source of information that can shed light on aspects of the biology of wildlife species relevant to conservation assessments, monitoring, and management (Allendorf et al 2010). Recent studies have highlighted their potential to infer population structure and to estimate the spatial scale of gene flow to examine population connectivity which was previously unidentified using traditional approaches. Given the fine scale pattern of differentiation observed in some regions for this species, including population structure among coastal and offshore populations (e.g. Sellas et al 2005), and sometimes in very small areas (e.g Fernandez et al 2011), additional resolution is expected to provide important information about stock structure in this particular region.</p> <p>Chemical markers:</p> <p>Organochlorine compounds concentrations (DDTs and PCBs) - Population structure may be investigated through the analysis of chemical tracers that reflect the ecosystem in which organisms live and feed. Because the principal source of organochlorine intake in mammals is diet, populations inhabiting different geographical areas accumulate in their tissues pollutant loads that are characteristic of such areas and that often differ qualitatively and quantitatively (Aguilar 1987). Differences in tracer signatures found between groups may reveal some degree of ecological differentiation. Differences between tracer values for a given tissue corresponding to long integration periods would suggest long periods of differentiation that may support the existence of separate demographical units.</p> <p>- Data analysis</p> <p>The genetic data will be used (i) to determine patterns of genetic diversity and differentiation within and between populations, (ii) to identify the main barriers to gene flow and (iii) to date demographic events such as changes in population size or gene flow patterns, using methods implemented in classical software or simulation programs developed within the group. Indeed, members of the PCG are</p>
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	<p>currently developing new simulation methods that can be specifically applied to structured or fragmented populations, in order to compare various demographic models for a wide range of parameter values using the framework of Approximate Bayesian Computation (ABC) methods.</p> <p>New analytical methods have been developed to exploit the information on short-term and fine-scale processes that can be extracted from individual genotypes based on hyper-variable markers. On the basis of genome wide SNPs, new inferential modelling approaches can be applied to elucidate their complex origin and infer their population demography. It will also help us to understand whether the species' population size has been influenced by factors, such as past climatic changes or recent anthropogenic events</p> <p>In order to identify genetic discontinuities (or breaks) and determine whether they are correlated with marine features and habitat heterogeneity, we will test for isolation by distance, using different geographic and environmental distances. This will allow us to select environmental predictors of genetic structure, and then associate genetic and environmental factors using Bayesian methods.</p> <p>Finally, differences in organochlorine concentrations or related ratios among populations will be assessed by an ANOVA analysis taking into account the sex and the age of individuals, and by Principal Component Analysis (PCA) to examine the chlorophenyl congener pattern in the bottlenose dolphins from the different habitats.</p>
<p><b>Outputs</b></p>	<p>A report will be presented to the ASCOBANS Advisory Committee in the end of the project.</p> <p>At least two scientific publications in international peer-reviewed journals are expected from this project, and results will be presented at the annual meeting of the European Cetacean Society meeting and other national and international scientific meetings.</p> <p>Besides this, regular reports it will be presented to ICNF in order to give information related directly to the Action Plan.</p> <p>Additionally, this work will be presented to wider audiences in popular publications (TV, journals and magazines) and in public talks in Portugal in order to create public awareness and enhance conservation of cetaceans and more specifically regarding to the resident bottlenose dolphin population.</p>
<p><b>Work Plan and Timetable</b></p>	<p>Until the end of this year the sample collection will be completed. And this sample collection is not considered in the project time, since the samples will be collected under other projects of the Action Plan from Escola de Mar and Associação para as Ciências do Mar.</p> <p>The proposed work is expected take approximately 14 months.</p> <p>Please see in the end of the document the <b>Table 1</b> with the work plan.</p>
<p><b>Project Personnel</b></p>	<p>Dr. Inês Carvalho          Population and Conservation Genetics Group          Instituto Gulbenkian Ciência          Email: <a href="mailto:icarvalho@igc.gulbenkian.pt">icarvalho@igc.gulbenkian.pt</a>          Role within the Project: Principal Investigator - overall responsibility for the samples collection, data generation and analysis, reporting and</p>

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	<p>paper writing</p> <p>Dr. Lounés Chikhi Population and Conservation Genetics Group Instituto Gulbenkian Ciência Email: <a href="mailto:chikhi@igc.gulbenkian.pt">chikhi@igc.gulbenkian.pt</a> Role within the Project: Co-investigator - Supervision of genetic data generation and analyses, reporting and paper writing</p> <p>Prof. Graham J. Pierce School of Biological Sciences (Zoology) University of Aberdeen Tillydrone Avenue Aberdeen, AB24 2TZ Aberdeen, UK Email: <a href="mailto:g.j.pierce@abdn.ac.uk">g.j.pierce@abdn.ac.uk</a> Role within the Project: Co-investigator - Supervision of contaminants data generation and analyses, reporting and paper writing</p> <p>Short CV of each member team is in the end of the proposal</p>
Budget Estimates	<p>Troia Natura S.A. is going to provide the core funding for this project. The partner organizations (Escola de Mar, Associação para as Ciências do Mar) are providing personnel, planning and logistical assistance for the sampling collection.</p> <p>However in the project funded by Troia Natura, the development of SNPs (library construction, sequencing, assembly and SNP calling) were not included, so this task need to be funded and this is the funds that we are requesting to ASCOBANS.</p> <p>Please see the end of the document <b>Table 2</b> for detailed budget.</p>
REFERENCES	<ul style="list-style-type: none"> <li>- Aguilar A (1987) Using organochlorine pollutants to discriminate marine mammal populations: a review and critique of methods. <i>Marine Mammal Science</i> 3: 242-262.</li> <li>- Augusto J, Rachinas-Lopes P, dos Santos M (2011) Social structures of the declining resident community of common bottlenose dolphins in the Sado estuary, Portugal. <i>Journal of the Marine Biological Association of the United Kingdom</i> 1-10. DOI: 10.1017/S0025315411000889.</li> <li>- Bowen L, Aldridge B, Gulland F, Woo J, Van Bonn W, DeLong R, Stott J, Johnson M (2002) Molecular characterization of expressed DQA and DQB genes in the California sea lion (<i>Zalophus californianus</i>). <i>Immunogenetics</i> 54: 332-347.</li> <li>- Cohen S (2002) MHC variation in natural populations of an estuarine fish: high levels of variation and relationship to severe environmental stress. <i>Molecular Biology and Evolution</i> 19: 1870-1880.</li> <li>- Fernández, R., Santos, M.B., <b>Pierce, G.J.</b>, Llavona, A., López, A., Silva, M.A., Ferreira, M., Carrillo, M., Cermeño, P., Lens, S. &amp; Piertney, S.B. 2011. Fine scale genetic structure of bottlenose dolphins (<i>Tursiops truncatus</i>) in Atlantic waters of the Iberian Peninsula. <i>Hydrobiologia</i> <b>670</b>, 111-125.</li> </ul>

	<ul style="list-style-type: none"><li>- Gaspar R, (2003) Status of the resident bottlenose dolphin population in the Sado Estuary: past, present and future. PhD thesis, University of St. Andrews, UK.</li><li>- Lahaye V, Bustamante P, Dabin W, Van Canneyt O, Dhermain F, Cesarini C, Pierce G, Caurant F (2006) New insights from age determination on toxic element accumulation in striped and bottlenose dolphins from Atlantic and Mediterranean waters. <i>Marine Pollution Bulletin</i> 52:1219-1230.</li><li>- Parreira B, Trussart M, Sousa V, Hudson R, Chikhi L (2009) SPAMs: A user-friendly software to simulate population genetics data under complex demographic models. <i>Molecular Ecology Resources</i> 9: 749–753</li><li>- Pierce G, Santos MB, Murphy S, Learmonth J, Zuur A, Rogan E, Bustamante P, Caurant F, Lahaye V, Ridoux V, Zegers B, Mets A, Addink M, Smeenk C, Jauniaux T, Law R, Dabin W, López, A, Alonso Farré J, González AF, Guerra A, García-Hartmann M, Reid R, Moffat C, Lockyer C, Boon J (2008) Bioaccumulation of persistent organic pollutants in female common dolphins (<i>Delphinus delphis</i>) and harbour porpoises (<i>Phocoena phocoena</i>) from western European seas: geographical trends, causal factors and effects on reproduction and mortality. <i>Environmental Pollution</i> 153, 401-415.</li><li>- Quéméré E, Crouau-Roy B, Rabarivola C, Louis E, E Jr, Chikhi L (2010) Landscape genetics of an endangered lemur (<i>Propithecus tattersalli</i>) within its entire fragmented range. <i>Molecular Ecology</i> 19: 1606-1621.</li><li>- Sequeira M, Matias S, Farinha JC, Gaspar R, Silva C, Augusto J, Ferreira CV, Fonseca MJ, Narra P, Luís AR (2009) Bases para o Plano de Acção para a Salvaguarda e Monitorização da População de Roazes do Estuário do Sado. 1st edition. Lisbon: Instituto da Conservação da Natureza e da Biodiversidade. [In Portuguese]</li><li>- Sousa V, Fritz M, Beaumont M, Chikhi L (2009) Approximate Bayesian Computation without summary statistics: the case of admixture. <i>Genetics</i> 181: 187-197.</li><li>- Hohenlohe PA, Bassham S, Etter PD, Stiffler N, Johnson EA, Cresko WA. (2010) Population genomics of parallel adaptation in threespine stickleback using sequenced RAD tags. <i>PLoS Genetics</i>. 6(2):e1000862</li><li>- Miller MR, Dunham JP, Amores A, Cresko WA, Johnson EA. (2007) Rapid and cost-effective polymorphism identification and genotyping using restriction site associated DNA (RAD) markers. <i>Genome Research</i>. 17(2):240-248.</li><li>- Sellas AB, Wells RS, Rosel PE (2005) Mitochondrial and nuclear DNA analyses reveal fine scale geographic structure in bottlenose dolphins (<i>Tursiops truncatus</i>) in the Gulf of Mexico. <i>Conservation Genetics</i> 6, 715–728</li></ul>
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For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org)

## Curriculum Vitae

### Inês Costa Carvalho

#### Current Position

Post Doctoral fellow at Instituto Gulbenkian Ciência  
Population and Conservation Genetics Group  
Instituto Gulbenkian Ciência  
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2780-156 Oeiras, Portugal  
Phone: +351934253236  
Email: [icarvalho@igc.gulbenkian.pt](mailto:icarvalho@igc.gulbenkian.pt)

### **Academic qualifications**

2012 **PhD in Population Biology**, Algarve University, Portugal, in collaboration with American Museum of Natural History, USA (graduated with Distinction)

2004 **Master's in Etology (MSc)**, ISPA University Institute, Portugal

2000 **Graduation in Biology Applied to Marine Animal Resources (BSc)**, University of Lisbon (four years of disciplines and one year of research project with thesis dissertation)

### **Professional activities**

2011-present: Scientific coordination - Whale watching et monitoring des Cétacés dans l'archipel de São Tomé et Príncipe, funded UICN-CARPE.

2011-present: Coordinator - ROAZES: GENÉTICA E TOXICOLOGIA: Implementação de um programa de caracterização genética, fisiológica e toxicológica da população de roazes", Plano de Salvaguarda e Monitorização dos Roazes do Estuário do Sado (RNES - ICNB), funded by Troia Natura SA.

2011-present: Investigator - ROAZES: HABITAT E SIMPATRIA: Estudo da utilização de habitat pela população residente de roazes do estuário do Sado (*Tursiops truncatus*) e das interações simpátricas intra-específicas na zona costeira adjacente, Plano de Salvaguarda e Monitorização dos Roazes do Estuário do Sado (RNES - ICNB), funded by Troia Natura SA.

2011: Research Assistant - CETACEA CENTRAL, Escola de Mar, funded by The Body Shop Portugal and The Body Shop International.

2004-2005: Coordinator - Occurrence and Conservation of cetaceans from São Tomé and Príncipe, funded Wildlife Conservation Society and ECOFAC.

2002-2004: Coordinator - Os cetáceos em São Tomé e Príncipe e perspectivas para actividades de Whale Watching, funded by Associação Projecto Delfim and Rolas Island Resort.

2001-2002: Coordinator - Os golfinhos-roazes no estuário do Sado: medidas de acção e de conservação", funded by Prémio Milénio Expresso Sagres 2001.

### **Scholarships, grants and awards**

2007 - Lerner-Gray Grants for Marine Research – American Museum of Natural History

2007 – Travel grant from Society for Marine Mammalogy to attend the 17<sup>th</sup> *Biennial Conference on the Biology of Marine Mammals* in Cape Town, South Africa

2004-2008 – PhD grant from Fundação para a Ciência e Tecnologia

2005 - Scientific grant *Espécies-Phares* (ECOFAC/EC, RAPAC – Le Réseau des Aires Protégées d' Africa Centrale)

2005 - Travel grant from Society for Marine Mammalogy to attend the 16<sup>th</sup> *Biennial Conference on the Biology of Marine Mammals* in San Diego, USA

2004 – Scientific grant *Espécies-Phares* (ECOFAC/EC, RAPAC – Le Réseau des Aires Protégées d' Africa Centrale)

2001 - Milénio Sagres Expresso 2001 Award – With the project “Golfinhos-roazes do Estuário do Sado: Medidas de Acção e Conservação”.

### **Supervisions**

Andreia Pereira (co-supervision). Master in Conservation Biology, Faculdade de Ciências da Universidade de Lisboa. Thesis: Behavioural ecology and habitat use of bottlenose dolphin (*Tursiops truncatus*) in São Tomé and Príncipe with remarks for cetacean conservation. (2011/2012).

### **Selected research outputs**

#### **Peer-reviewed journal articles**

**Carvalho I**, Loo J, Collins T, Barendse J, Pomilla C, Leslie M, Best P, Rosenbaum H (*in review*). Does temporal and spatial segregation explain the complex population structure of humpback whales on the coast of West Africa? *Marine Biology*.

Barendse J, Best P, **Carvalho I**, Pomilla C (*in review*). Mother Knows Best: Humpback Whales (Megaptera novaeangliae) Show Maternally Derived Fidelity to a Southern Hemisphere Feeding Ground. PlosOne.

Pereira A, Martinho F, Brito C, **Carvalho I** (*Accepted*). Bottlenose dolphin (*Tursiops truncatus*) in São Tomé (São Tomé and Príncipe) – Relative abundance, site fidelity and social structure. *African Journal of Marine Science*.

Barendse J, Best PB, Thornton M, Elwen S, Rosenbaum HC, **Carvalho I**, Pomilla C, Collins T, Meÿer M, Leeney, R (2011) Transit station or destination? Attendance patterns, movements, and abundance estimate of humpback whales off west South Africa from photographic and genotypic matching. *African Journal of Marine Science* 33: 353-373.

**Carvalho I**, Brito C, dos Santos ME, Rosenbaum HC (2011). Waters of São Tomé: a calving ground for West African humpback whales? *African Journal of Marine Science* 33: 91-97.

Weir CR, Collins T, **Carvalho I**, Rosenbaum HC (2010) Killer whales (*Orcinus orca*) in Angolan and Gulf of Guinea waters, tropical West Africa. *Journal of the Marine Biological Association of the United Kingdom*, 90: 1601-1611.

Barendse J, Best PB, Thornton M, Pomilla C, **Carvalho I**, Rosenbaum HC (2010). Migration redefined? Seasonality, movements and group composition of humpback whales *Megaptera novaeangliae* off the west coast of South Africa. *African Journal of Marine Science* 32: 1-22.

Brito C, Vieira N, Sá E, **Carvalho I** (2009). Cetaceans' occurrence off the west central Portugal coast: a compilation of data from whaling, observations of opportunity and boat-based surveys. *Journal of Marine Animals and Their Ecology*, 2(1): 4pp.

Picanço C, **Carvalho I**, Brito C (2009). Occurrence and distribution of cetaceans in Sao Tome and Principe tropical archipelago and their relation to environmental variables. *Journal of the Marine Biological Association of the United Kingdom*, 89: 1071-1076.

#### **Book editions**

Brito C & **Carvalho I** (2012) *Cetáceos de Portugal: Passado, Presente e Futuro*. Escola de Mar, Paleta natura, nº 2: 160 pp.

#### **Book Chapters**

**Carvalho I**, Brito C (2012) Introdução. In *Cetáceos de Portugal: Passado, Presente e Futuro* (Brito, C. & Carvalho, I., Eds.), Escola de Mar, Paleta natura, nº 2: 10-14.

Picanço C, **Carvalho I**, Sousa A, Vieira N (2012) Uso da Fotografia na Investigação de Cetáceos. In *Cetáceos de Portugal: Passado, Presente e Futuro* (Brito C. & Carvalho I. Eds.), Escola de Mar, Paleta natura, nº 2: 49-60.

Vieira N, Sá E, Ferreira C, Teixeira A, **Carvalho I** (2012) Ocorrência de Cetáceos Na Costa Centro de Portugal Continental. In *Cetáceos de Portugal: Passado, Presente e Futuro* (Brito, C. & Carvalho, I., Eds.), Escola de Mar, Paleta natura, nº 2: 77-88

#### **Reports and non-peer reviewed articles**

Brito C, Vieira N, Martinho F, **Carvalho I** (2012) Relatório de Atividades do Ano 2011: Investigação Científica de Cetáceos em Portugal Continental. *Relatórios de Investigação Científica*, nº 5. Escola de Mar, Lisboa: 7 pp.

Brito C, **Carvalho I**, Sousa A, Vieira N (2011) Relatório de Atividades do Ano 2010: Investigação Científica de Cetáceos em Portugal Continental. *Relatórios de Investigação Científica*, nº 4. Escola de Mar, Lisboa: 9 pp.

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Brito C, **Carvalho I**, Vieira N (2010) Relatório de Atividades do Ano 2009: Investigação Científica de Cetáceos em Portugal Continental. *Relatórios de Investigação Científica, nº 3*. Escola de Mar, Lisboa: 10 pp.

**Carvalho I**, Loo J, Pomilla C, Collins T, Barendse J, Best P, Leslie M, Hersch R, Thornton M, Rosenbaum H (2010) Temporal patterns of population structure of humpback whales in west coast of Africa (B stock). International Whaling Commission Report doc. SC/62/SH8.

Collins T, Cerchio S, Pomilla C, Loo J, **Carvalho I**, Ngouesso S, Rosenbaum HC (2010) Estimates of abundance for humpback whales in Gabon between 2001 - 2006 using photographic and genotypic data. International Whaling Commission Report doc. SC/62/SH11.

Barendse J, Best PB, Thornton M, Elwen S, Pomilla C, **Carvalho I**, Rosenbaum HC (2010) Photo identification of humpback whales *Megaptera novaeangliae* off West South Africa (Breeding Stock B2), and a preliminary (sub-) population estimate. International Whaling Commission Report doc. SC/62/SH2.

Loo J, Pomilla C, Mendez M, Leslie M, **Carvalho I**, Collins T, Cerchio S, Best PB, Engel M, Ersts P, Findlay K, Bonatto S, Kotze P, Meyer M, Barendse J, Thornton M, Razafindrakoto Y, Ngouesso S, Vely M, Kiszka J, Rosenbaum HC (2010) Update on the evaluation of genetic structure on the feeding grounds and their connectivity to Breeding Regions. International Whaling Commission Report doc. SC/62/SH15.

Brito C, Picanço C, **Carvalho I** (2010). Small cetaceans off São Tomé (São Tomé and Príncipe, Gulf of Guinea, West Africa): Species, sightings and abundance, local human activities and conservation. International Whaling Commission Report doc. SC/62/SM8.

**Carvalho I**, Loo J, Pomilla C, Leslie M, Collins T, Barendse J, Best PB, Rosenbaum HC (2009) Temporal patterns of population structure of humpback whales in west coast of Africa (B1-B2 sub-stocks) based on mitochondrial and microsatellites variation. International Whaling Commission Report doc. SC/61/SH6.

Vieira N, **Carvalho I**, Brito C (2009) Occurrence and relative abundance of common dolphins in three sites of the Portuguese shore. International Whaling Commission Report doc. SC/61/SM16.

**Carvalho I**, Loo J, Pomilla C, Leslie M, Collins T, Barendse J, Best P, Rosenbaum HC (2008) Preliminary analysis on temporal variation on mitochondrial DNA diversity of humpback whales on B1 and B2 sub-stocks. International Whaling Commission Report doc. SC/60/SH44.

Collins T, Cerchio S, Pomilla C, Loo J, **Carvalho I**, Ngouesso S, Rosenbaum HC (2008) Revised estimates of abundance for humpback whale breeding stock B1: Gabon. International Whaling Commission Report doc. SC/60/SH28.

### Lounés Chikhi

#### **Current position**

#### **Directeur de Recherche 2<sup>nd</sup> Class**

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### Academic qualifications

2001/2002: Post Doctoral Research Associate (PDRA) at University College, London. (BBSRC funding attributed to Prof. Z. Yang.)

01-03/2001: Short Research contract at University of Cardiff University.

(MAFF funding to Prof M. Bruford).

Data analysis on population (breed) data of sheep and cattle.

**1999-2000: PDRA at Queen Mary and Westfield College, London.** Small NERC grant (funding attributed to Drs. R.A. Nichols, M.A. Beaumont and myself).

Analysis and test of an admixture model.

**1997-1999: PDRA at the *Institute of Zoology*** in collaboration with Prof. M. Bruford and Dr. M.A. Beaumont. Funding attributed to Prof. M. Bruford.

Analysis of the genetic variability in breeds of cattle and sheep. Theoretical and practical approaches.

1996-1997: Post Doctoral Marie Curie Fellow at the University of Padua, Italy in the group of Prof. Guido Barbujani. Funding attributed to myself.

Evolutionary processes inferred from molecular diversity. Implications for conservation biology and fishery management.

1991-1995: Ph.D thesis in population genetics of two *Sardinella species*, University Paris VI (Pierre et Marie Curie) - ORSTOM. Mention très Honorable, Félicitations du Jury.

Genetic differentiation in *Sardinella aurita* and *S. maderensis*, allozymes and mitochondrial DNA.

1990-1991: DEA (Fifth year University diploma) in Population Biology and Eco-ethology in the University of Tours.

Analysis of the mtDNA restriction polymorphism in Tunisian populations of the house mouse (*Mus musculus domesticus*) with standard and Robertsonian karyotypes."

1988-1991: Grande Ecole diploma "Diplôme d'Ingénieur de l'Institut National Agronomique Paris-Grignon."

### Teaching and Supervisions

#### Teaching

Ecology and evolution DEA (5<sup>th</sup> year Univ.) in Montpellier in 1995-97

3<sup>rd</sup>Year course at Queen Mary and Westfield College, Univ. of London 1999

Population and Conservation Genetics, Masters Toulouse 2003-2010

#### Courses

Maputo Univ. (Mozambique): Basic population genetics and Conservation.

Instituto Gulbenkian de Ciências (co-organised with M. Beaumont)

\* Two-day Microsatellite data analysis course in 2001.

\* Four-day Genetic data analysis course in 2002.

\* Five-day Population Genetics 2003-05, 2007-2012

\* Workshop on the coalescent theory in 2006

Univ. of Sabah (Malaysia). Contributions to Conservation Genetics lectures in a five week course (B. Goossens).

### Supervisor

One "Laurea" student in Statistics (Bologna University).  
three ERASMUS students  
Eight Masters students  
Three post-docs 2003, 2009  
Five PhD students

### Grants

TMR (**Training and Mobility of Researchers**) Fellowship to work in Prof G. Barbujani's group (1996-1997).  
NERC (*Natural Environment Research Council*) with R. Nichols and M. Beaumont (dec. 1999 - august 2000).  
European Science Foundation, Exploratory Workshops, with Pr. S. Shennan.  
Institut Français de la Biodiversité  
European Science Foundation, ConGen programme,  
Programme Egide « Alliance » : with M. Beaumont (2006, 2007)  
Actions de Coop. ponctuelles Univ. P. Sabatier (Portugal, 2006)  
Actions Intégrées Luso-Françaises (2006, 2007)  
CEPA (ONG) : with E. Quéméré (2006)  
Idea Wild (ONG) : with E. Quéméré (2006)  
European Science Foundation : Workshop dans le cadre du programme ConGen (2007)  
Fundação para a Ciência e Tecnologia (2007) - "Fragmentation de l'habitat à Bornéo, impact sur les grands mammifères".  
Institut Français de la Biodiversité (2007) - "Fragmentation de l'habitat à Madagascar, impact sur les lémuriens".  
Fundação para a Ciência e a Tecnologia (2009) - "Habitat fragmentation in Madagascar".  
Fundação para a Ciência e Tecnologia (2012): "A vertebrate's eye view on habitat loss and fragmentation across time and space in Madagascar"

### Peer-reviewed journal articles

Richard-Yris, M.A., **Chikhi L.**, (1991). Maternal behaviour in domestic hens (*Gallus gallus domesticus*): cues from chicks and maintenance of maternal responsiveness. *Int. J. Comp.Psychology.*, **4 (4)**: 275-286.  
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Goossens, B., **Chikhi, L.**, Jalil, F., James, S., Lackman-Ancrenaz, I., Bruford, M.W. (2009) Taxonomy, geographic variation and population genetics of the Bornean and Sumatran orangutans. In: *Orangutans: geographic variation in behavioural ecology and conservation*. Ed: S. Wich, SSU Atmoko, TM Setia, and C van Schaik, Oxford University Press. **Chapter 1**, 1-14.

Thomas M.G., Kivisild, T., **Chikhi L.**, Burger, J. (2013). Europe and Western Asia: genetics and population history. In *The Encyclopaedia of Global Human Migration*, Ness I and P. Bellwood (eds) Malden, MA and Oxford: Wiley-Blackwell (forthcoming, 2013) **volume 1, chapter 18**, pp. 146-156.

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**Software related contributions**

**1997/99-1** Belkhir, K., Borsa, P., Goudet, J., **Chikhi, L.**, Bonhomme, F. GENETIX 3.0. Logiciel d'analyse de données de génétique des populations.

Site <http://www.univ-montp2.fr/~genetix/genetix.htm>.

**2000/01-2** Langella, O., **Chikhi L.**, Beaumont, M.A. LEA (Likelihood-based estimation of admixture). Software based on the admixture method developed in the paper Chikhi et al., (2001, Genetics). Site <http://www.cnrs-gif.fr/pge/bioinfo/lea/index.php?lang=en>.

**2009** Parreira, B., Trussart, M., Sousa, V., Hudson, R., **Chikhi, L., (2009)**. SPAMs : A user-friendly software to simulate population genetics data under complex demographic models. ***Molecular Ecology Resources.***

**2009** Bray TC, Sousa V, Parreira, B., Bruford M, **Chikhi L., (2009)** 2BAD: an application to estimate the parental contributions during two independent admixture events. ***Molecular Ecology Resources.***

**2009** Giovannini , A., Zanghirati, G., Beaumont, M.A., **Chikhi, L.**, Barbujani, G., **(2009)** A novel parallel approach to the likelihood-based estimation of admixture in population genetics. ***Bioinformatics.***

**Graham John Pierce**

**Current Position**

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**External duties**

Member of the ICES Working Group on Marine Mammal Ecology (since 2005).

Member (Chair 2007-10 and 1998- 2001) of the International Council for the Exploration of the Seas Working Group on Cephalopod Fisheries and Life History (since 1991).

Editorial Board of Journal of the Marine Biological Association of the United Kingdom (JMBA), recent guest editorials for ICES Journal of Marine Science, Hydrobiologia and JMBA

**Teaching and training:** I recently completed a 3-year posting as Marie Curie Chair at Instituto Español de Oceanografía (Centro Oceanográfico de Vigo) in Spain under which 50% of my time was devoted to postgraduate supervision and teaching, including PhD courses and contribution to a Masters programme in fisheries at the University of Vigo. I supervise or co-supervise over 20 postgraduate research students, mainly at the Universities of Aberdeen, Vigo (Spain) and Minho (Portugal). Twenty-nine of my previous research students have now graduated. I have co-ordinated two Marie Curie postgraduate training networks and co-organised the University of Aberdeen's MSc in *Marine & Fisheries Science* for 12 years. In Aberdeen, I teach ecology, marine biology, fisheries and applied statistics.

**Scholarships, grants and awards**

*Parasite Risk Assessment with Integrated Tools in EU fish production values chains (PARASITE). 2013-2016, Partner CEC €210K.*

*Age Determination of pilot whales. Scottish Agricultural College, 2012, £5k*

*Can essential habitat modelling for the lesser Octopus Eledone cirrhosa help to identify key areas for Risso's dolphin Grampus griseus in Scottish waters? Scottish Agricultural College, 2012, £5k*

*Aquaculture, Fisheries & Aquatic Resource Management (AQUAT-NET 3). CEC ERASMUS academic network, 2012-2014. Partner.*

*Proyecto Whale Watch Galicia: Investigacion De La Potencialidad Y Diseño Del Nuevo Producto Whale Watch En Galicia. Xunta de Galicia, 2010-2012. Partner.*

*Understanding harbour porpoise (Phocoena phocoena)-fishery interactions in the north-west Iberian Peninsula. UNEP/ASCOBANS, 2010-2011, 10,000 euros. Joint Grant-holder with Fiona Read*

*Forage Fish Interactions. CEC FP/ research project, KBBE-244966-FACTS, 2010-12. Member of research team at Instituto Español de Oceanografía*

*Vocational Aqualabs. EU Lifelong Learning Programme, 2010-2011, Partner.*

*Anthropogenic Impacts on the Atlantic marine Ecosystems of the Iberian Peninsula (Animate). CEC FP6 Marie Curie Chair, MEXC-CT-2006-042337, €287k, chair-holder, 2007-2010.*

*Monitoring and assessment of squid fishing in UK waters. SEAFISH, 2007-08, £60k.*

*Climate Change and Migratory species: Indicator Species and Protocols for Data Collection. British Trust for Ornithology/DEFRA, 2007-08, £15K.*

*Taxonomic marine plankton identification manual for North European seas. NERC, 2005-07, £145K. With FRS Marine Laboratory and other partners*

*Environmental Approach to Essential Fish Habitat Designation (EnviEFH). CEC FP6 research project, 2006-08.*

*ECOsysteem approach to SUsustainable Management of the Marine Environment and its living Resources. CEC Marie Curie Training Site, 2006-2009 Co-ordinator.*

*Investigation of the feeding habits of Monachus monachus. Hellenic Society for the study and Protection of the Monk Seal, 2006-2008, €13.5k*

*Integrating multiple demands on coastal zones with emphasis on aquatic ecosystems and Fisheries(INCOFISH) CEC INCO project 2005-08.*

*Bioaccumulation of persistent organic pollutants in small cetaceans in European waters: transport pathways and impact on reproduction (BIOCET). CEC Framework 5 project, Contract No EVK3-CT-2000-00027, 2001-03. Co-ordinator.*

*Cephalopod Stocks in European Waters: Review, Analysis, Assessment and Sustainable Management(CEPHSTOCK). CEC Framework 5 Concerted Action, Contract No QLRT-2001-00962, 2002-05. Co-ordinator.*

*Bio-diversity processes in heterogeneous environments. NERC, 2004-06, £127k. PI at University of Aberdeen. Project led by Dr Piran White (University of York).*

*Changing distribution patterns and behaviour of bottlenose dolphins off the North East coast of Scotland. TotalFinaElf Exploration UK, Talisman Energy (UK), Kerr-McGee North Sea (UK), 2002-05.*

*Anthropogenic Impacts on the Atlantic marine Ecosystems of the Iberian Peninsula (Animate). CEC FP6 Marie Curie Chair, MEXC-CT-2006-042337, €287k, chair-holder, 2007-2010.*

*Understanding harbour porpoise (Phocoena Phocoena)-fishery interactions in the north-west Iberian Peninsula. ASCOBANS, 2010-2011, 10,000 Euros. Joint Grant-holder with Fiona Read*

*ECOsysteem approach to SUsustainable Management of the Marine Environment and its living Resources. CEC Marie Curie Training Site, 2006-09. Co-ordinator.*

*Bioaccumulation of persistent organic pollutants in small cetaceans in European waters: transport pathways and impact on reproduction (BIOCET). CEC FP5 project, 2001-03, €350k. Co-ordinator.*

*Environmental Approach to Essential Fish Habitat Designation. CEC FP6 research project, 2006-08, €116K.*

*Investigation of the feeding habits of Monachus monachus*. Hellenic Society for the study and Protection of the Monk Seal, 2006-2008, €13.5k

#### **Papers Selected recent publications**

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**TABLE 1 – Work Plan and timetable for the 14 months**

	Task	Responsible person (s)
<b>Month 1</b> <b>Month 2</b>	- DNA extractions -Sexing, mtDNA and MHC sequencing -RAD-tag library construction and sequencing	I. Carvalho
<b>Month 3</b> <b>Month 4</b> <b>Month 5</b>	- Microsatellites -RAD-tag library construction and sequencing	I. Carvalho
<b>Month 6</b> <b>Month 7</b>	- PCBs determination levels - Assembly, SNP calling - ICNF report	I. Carvalho and G. Pierce I. Carvalho and L. Chikhi I. Carvalho
<b>Month 8</b> <b>Month 9</b> <b>Month 10</b> <b>Month 11</b> <b>Month 12</b>	- Data analysis	I. Carvalho, L. Chikhi and G. Pierce
<b>Month 13</b> <b>Month 14</b>	Final Report for ASCOBANS Scientific committee, ICNF report and paper writing for Scientific journals. Results dissemination.	I. Carvalho, L. Chikhi and G. Pierce

**TABLE 2 – Detailed Budget**

	Task	Price per unit (sample)	Unit number	Total Cost	Funded by
<b>Direct Costs</b>	DNA extraction	7.5€	~200	1500€	Troia Natura S.A.
	Mt DNA and MHC sequencing	12€	~200	2400€	
	Sexing	1€	~200	200€	
	Microsatellites	10€ (30loci)	~200	2000€	
	PCBs	100€	100	10000€	
	PI Investigator	14 months	1000€/month	14000€	
	SNPs Development	150€	100	<b>15000€</b>	<b>Request to ASCOBANS</b>
<b>Indirect Costs</b>	Institute Overheads	IGC (Portugal)	0	0	
<b>TOTAL COSTS</b>				<b>45100€</b>	

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee at its next meeting, foreseen for autumn of 2013, will consider the proposals made available to its review and select those that are a priority for funding. *Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported.* Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received **by 15 July 2013** will be made available to the Committee for their review. Funding applications received later will not be considered. Please submit your proposal in Word format.

<p><b>Title</b> The Value of Citizen Science to assess the relative abundance and distribution of small cetaceans in the ASCOBAN region</p>	<p><b>Justification:</b> Conservation and Management Plan Res.7.2</p>	<p><b>Project ID:</b> 2013/07</p>
<p><b>Implementing Agency / Applicant</b></p>	<p>Sally Hamilton ORCA, Brittany Ferries, Wharf Road, Portsmouth PO2 8RU</p>	
<p><b>Collaborating Agencies / Other Sponsors</b></p>	<p>Outcomes from this research will be incorporated into the work plan of the Atlantic Research Coalition. This European partnership includes the following ngos/research groups includes ORCA, Marinelife (UK), SeaTrust (Wales), Cornwall Wildlife Trust (UK), Rugvin (Holland), Oceamm (France), Northcet (Scotland) and Amber (Spain).</p>	
<p><b>Background / Problem</b></p>	<p>Briefly describe issues/problems to be addressed by the project. Please indicate whether the proposed project is a new activity and its possible linkages with already ongoing/planned initiatives.</p> <p>Over the last thirteen years ORCA has been conducting monthly offshore citizen science surveys. These surveys have been conducted by a volunteer work force, surveying on-board ferries recording the number of small cetaceans seen in the North Sea, Irish Sea, Celtic Sea and the North East Atlantic as well as effort related information. To date ORCA database holds 11167 records, 8585 sightings events and 93,468 animals identified. This complete dataset has yet to be analysed.</p> <p>Building on the recent developments arising from the UK Joint</p>	

**ASCOBANS Project Proposal Format 2013**

	<p>Cetacean Protocol analysis we would like to examine (<i>“stress test”</i>) the ORCA dataset for its precision and sensitivity to detect changes in relative abundance and distribution for small cetaceans in the ASCOBAN region.</p>
<p><b>Objectives</b></p>	<p>Briefly specify the project objective as the overall intended achievement. This part should include one or two main objectives, possibly supplemented by more specific objectives, which could provide more structure to the design of the project. Objectives are intended goals and should be clearly distinguished from outputs and activities.</p> <ol style="list-style-type: none"> <li>1) To test the reliability and robustness of a dataset arising from a structured “citizen science” monitoring programme.</li> <li>2) What type of changes can be detected with this type of dataset eg.the scale of the trend over what timescale?</li> <li>3) Based on the outcome, develop a standardise protocol to be used to across the Atlantic Research Coalition.</li> <li>4) Will the ARC citizen science dataset be good enough to become a credible data provider for cetacean monitoring in the future (if not), what type of conservation benefit can arise from this type of offshore citizen science survey work?</li> </ol>
<p><b>Relevance to ASCOBANS</b></p>	<p>Only projects directly relevant to the conservation objectives of ASCOBANS will be supported. Briefly explain the pertinence of the project for the attainment of ASCOBANS goals and justify by explaining how the project helps to address the relevant Activities in the Agreement’s Triennium Work Plan. Include references to other decisions or documents/instruments produced within the Agreement, such as the Agreement’s Conservation and Management Plan, Resolutions or actions recommended by the Advisory Committee as appropriate.</p> <p>This project has direct relevance to the overall aim of ASCOBAN “to promote close cooperation between countries with a view to achieving and maintaining a favourable conservation status for small cetaceans throughout the Agreement Area” and Activity 6 under the Triennium work plan (2013-2015) for the following reasons</p> <ol style="list-style-type: none"> <li>1) This project will investigate whether data collected through citizen science schemes can become a credible data provider for cetacean monitoring.</li> <li>2) If the project outcome is positive then this will promote wider cooperation amongst 8 ARC partners using this type of citizen science to monitor cetaceans. The ARC coalition represents NGOs from 5 different European countries all representative of the member states party to the ASCOBAN agreement.</li> </ol>
<p><b>Activities</b></p>	<p>Briefly describe the work or the tasks to be performed. As the main element of the project’s design, this section should outline the methodologies to be employed, personnel and equipment needs, location and expected duration of individual actions. Actions should be</p>

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	<p>clearly related to the outputs described below.</p> <p>Rigorous power analysis of the ORCA dataset. “Stress testing” to explore what type of changes these types of datasets can detect or have the potential to detect.</p>															
<p><b>Outputs</b></p>	<p>Indicate the specific products or services (e.g. reports, publications) produced by the activities to achieve the project objectives, including scientific, conservation and management and educational outputs.</p> <p>1) Peer reviewed paper of the suitability of the citizen science methodology for cetacean monitoring.</p> <p>2) Dependent of on the analysis outcome, the updating and standardising the survey protocol which will be integrated and adopted across the ARC partnership.</p> <p>3) Publication of ORCA’s decade of cetacean monitoring, highlighting key findings, facts and figures relevant to improving conservation benefit for small cetaceans in the ASCOBANS region.</p>															
<p><b>Work Plan and Timetable</b></p>	<p>As a general rule, small-scale projects funded by ASCOBANS should be completed within one year, and their expected duration should not exceed 2-3 years. Indicate proposed beginning and end dates.</p> <p>The work plan sets out the timetable for carrying out project activities and the delivery of outputs. The timetable should include start and end dates for each activity and indicate who is responsible for its implementation. The information is best presented as a table.</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Project activities</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>11/13</td> <td>Hire a post doctorate scientist</td> <td>Contract</td> </tr> <tr> <td>11/13 – 2/14</td> <td>Run analysis on the dataset to test for sensitivity and precision to detect a change</td> <td>Scientific Analysis report</td> </tr> <tr> <td>3/14-4/14</td> <td>Compile interesting finding facts and figure by species and regions arising from the research</td> <td>Publication highlighting 13 years of ORCA work</td> </tr> <tr> <td>4/14-5/14</td> <td>Preparation of a scientific article looking at whether citizen science can be used for cetacean monitoring.</td> <td>Paper ready for submission</td> </tr> </tbody> </table>	Date	Project activities	Output	11/13	Hire a post doctorate scientist	Contract	11/13 – 2/14	Run analysis on the dataset to test for sensitivity and precision to detect a change	Scientific Analysis report	3/14-4/14	Compile interesting finding facts and figure by species and regions arising from the research	Publication highlighting 13 years of ORCA work	4/14-5/14	Preparation of a scientific article looking at whether citizen science can be used for cetacean monitoring.	Paper ready for submission
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<p><b>Project Personnel</b></p>	<p>Name, position, affiliation, contact details, role within the project and a brief profile should be given for at least the most prominent members of the project team. Succinct CV can be attached to the project proposal.</p> <p>Sally Hamilton          Director of ORCA          Brittany Centre, Wharf Road, Portsmouth PO2 8RU  <a href="mailto:Sally.Hamilton@orcaweb.org.uk">Sally.Hamilton@orcaweb.org.uk</a>  <a href="http://www.orcaweb.org.uk">www.orcaweb.org.uk</a></p> <p><u>Brief Profile:</u> Over 20 years of conservation experience working in the charity and public sector. Qualifications include an MBA in Business Administration, MSc in Applied Animal Welfare and Behaviour specialising in cetaceans and BSc (Hons.) Marine Biology.</p> <p>Dr Simon Ingram &amp; Dr Clare Embling          Scientific Supervisors          School of Marine Science &amp; Engineering          University of Plymouth, PL4 8AA</p> <p><u>Brief Profile:</u> (Dr Simon Ingram) Lecture of Marine Conservation at Plymouth University, PhD, University College Cork 1996-2000. The ecology and conservation of bottlenose dolphins using the Shannon estuary, Ireland. MSc Ecology (taught) University of Aberdeen 1992-1993. Other cetacean projects include two years aboard IFAWs cetacean research vessel 'Song of the Whale' conducting acoustic and visual scientific surveys of cetaceans in the North Atlantic, Mediterranean and Caribbean waters. Worked at SMRU assisting with seal surveys and recently at the University of Aberdeen's Lighthouse Field Station managing a Scottish Government funded project examining the distribution abundance and ranging behaviour of coastal bottlenose dolphins.</p>
<p><b>Budget Estimates</b></p>	<p>Every project proposal must include a detailed project budget. A breakdown of the expected costs of the project should be prepared. Purchase of non-expendable equipment through ASCOBANS funding is accepted only exceptionally, and the equipment will remain the property of UNEP/ASCOBANS, which will decide at the closure of the project on its disposal or retention.</p> <p>The budget should include not only the funds requested of ASCOBANS, but also possible other financial resources made available by other sponsors or collaborating agencies. The budget should be presented in a tabular format and, where applicable, should clearly indicate the expected source of the various amounts budgeted.</p>

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	Activity	Budget
	Cost of analysis – employing a post graduate (3mths and supervision costs)	12,000 euro
	Publishing & design cost for the ORCA report	1,400 euro
	Project management costs @10%	1,340 euro
	Total	14,740 euro

For more information please contact the ASCOBANS Secretariat at [ascobans@ascobans.org](mailto:ascobans@ascobans.org).

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

Funding of projects through ASCOBANS is dependent upon availability of funds. Since ASCOBANS is not a funding agency, there is no guarantee that funds will be available each year. Please also note that the maximum sum the Agreement will spend on any one project is 15,000 Euro. Also, there is no possibility for supporting long-term projects. ASCOBANS will not fund monitoring obligations of EU member states or Parties to international conventions.

The ASCOBANS Advisory Committee at its next meeting, foreseen for autumn of 2013, will consider the proposals made available to its review and select those that are a priority for funding. *Please note that only projects with a direct benefit for the conservation objectives of the Agreement can be supported.* Projects covering more than one ASCOBANS Party will be favoured.

Please provide only summary information in the form below. The Secretariat will request more detailed information for selected projects only. The purpose of this form is to assist in the review and approval of the project proposal by the Advisory Committee.

Proposals received **by 15 July 2013** will be made available to the Committee for their review. Funding applications received later will not be considered. Please submit your proposal in Word format.

<b>Title</b>	Factors affecting the abundance and distribution of harbour porpoises in the German Baltic Sea	<b>Justification:</b>	Conservation and Management Plan Res.6.1 (part. JP)	<b>Project ID:</b>	2013/08
<b>Implementing Agency / Applicant</b>	SMRU Marine Ltd New Technology Centre North Haugh St Andrews Fife KY16 9SR United Kingdom				
<b>Collaborating Agencies / Other Sponsors</b>	German Oceanographic Museum (GOM) Katharinenberg 14/20 18439 Stralsund Germany  Institute for Terrestrial and Aquatic Wildlife Research (ITAW) University of Veterinary Medicine Hannover (Foundation) Werftstraße 6 25761 Büsum Germany				
<b>Background / Problem</b>	From August 2002 to September 2007, the German Oceanographic Museum conducted a variety of soft money projects, which - on a co-operative basis - investigated the relative abundance and distribution of harbour porpoises ( <i>Phocoena phocoena</i> ) throughout the German Baltic Sea by means of passive acoustic monitoring with porpoise detectors (T-PODs). During this time, an array of up to 42 T-POD positions was maintained (Figure 1). T-PODs register the time and length of sound signals that are likely to be echolocation clicks from porpoises. Porpoises use echolocation for orientation and prey capture and are				

frequently vocalising animals. To distinguish porpoise clicks from similar sounds of other origin (like e.g. boat sonars), a detection algorithm, entailed in the corresponding T-POD software, processes the raw data and evaluates the likelihood of a click train being a porpoise detection. Within the projects mentioned here, classified click trains were visually inspected for further investigations.

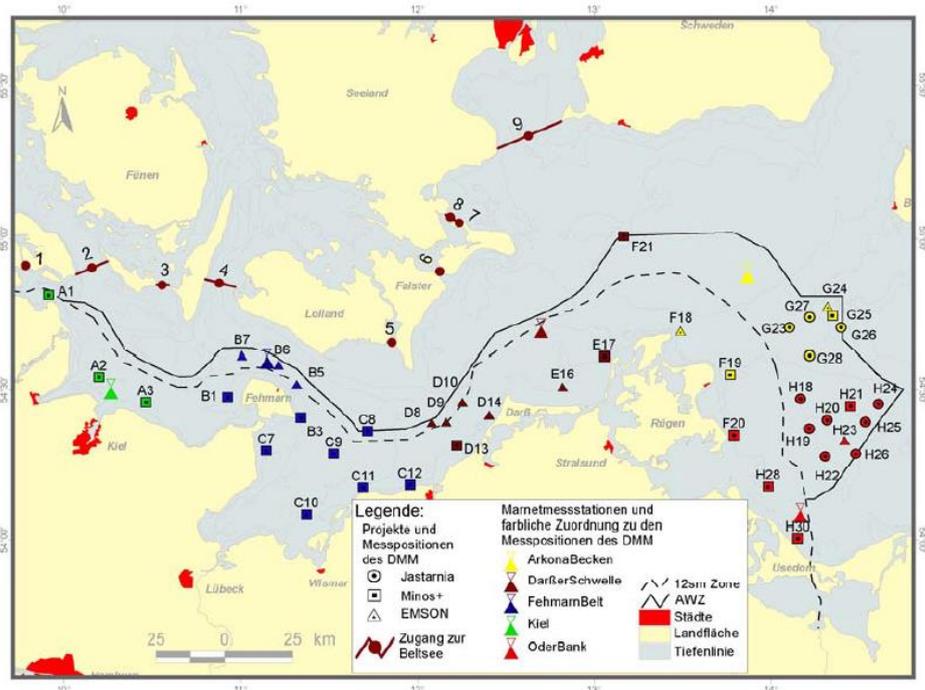


Figure 1 Location of T-POD measuring position A1 to H30 in the Baltic Sea. Indicated are also the positions' affiliation with the now finalized projects Jastarnia, Minos and Emson, as well as the Marnet mess masts of the German Federal Maritime and Hydrographic Agency delivering environmental data. (Source: Verfuss et al. 2008)

The analysis of the percentage of days with porpoise detections (DPD) per month revealed seasonal and geographical changes in porpoise presence with higher abundance in the summer than in winter and a decrease in abundance from west to east, presuming that DPD correlates with the porpoise abundance within the monitoring area (Verfuss et al. 2007, 2008). Data of the western part of the German Baltic Sea reached the saturating level with up to 100% DPD on most monitoring positions especially during summer. Analysing a small part of the data to look at the percentage of hours with porpoise detections per month (DPH) revealed great insights into possible migration pattern, but further analysis on this was not scope of and feasible within the timeframe of the projects. An influence of water temperature, salinity, shortest distance of the monitoring position to the Danish Belt Sea and observation months on DPD was shown to exist for the 2005 to 2007 data, but were published only in the German final report of the respective project (Verfuss et al. 2008).

Between 2005 and 2007, intensive deployment of T-PODs in the eastern part of the German Baltic Sea, the Pomeranian bay, was conducted to specifically monitor the Proper Baltic harbour porpoise sub-population. For those data, the influencing environmental factors were investigated on basis of DPD only, revealing a negative influence of water temperature on DPD, but also a positive influence of the DPD measured at a westerly monitoring position, in the Belt Sea region inhabited by the Belt Sea harbour porpoise sub-population. This leads us

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	<p>to the assumption of a temporal separated but spatial overlap in the use of the Pomeranian bay by the porpoises of the Belt Sea and Baltic Proper sub-populations (Gallus et al. 2012).</p> <p>In the frame of the above mentioned projects the German Oceanographic Museum did collect an incredibly valuable long-term monitoring data set with T-PODs from 2002 to 2007 that has not yet been analysed to its fullest extent as a long term data set in finer scale (DPH) and in correlation with environmental factors. There is still so much more valuable information entailed in this data set that has yet to be discovered, especially as it includes information about the transition zone of two harbour porpoise sub-populations, with one – the Baltic Proper population - being critically endangered.</p>
<p><b>Objectives</b></p>	<p>The objectives of the present application is</p> <ul style="list-style-type: none"> <li>• to investigate the influence of environmental factors on the porpoise abundance and distribution in the German Baltic Sea for the years 2002 to 2007</li> <li>• to assess fine-scale seasonal movements and diurnal rhythms that was not revealed by previous studies in the region (e.g. 100% DPD)</li> <li>• to analyse possible trends/changes in porpoise presence over a five year period</li> </ul> <p>The analysis of the percentage of detection positive hours per month give much greater insights into the distribution and abundance of porpoises within the monitoring area, and allows detailed modelling of the porpoise abundance in time and space and the influence of various environmental factors on it. Data give further insights into the possible spatial overlap of the use of the eastern German Baltic Sea region by the two sub-populations and their driving factors.</p> <p>Please note that the German Oceanographic Museum continued the monitoring of harbour porpoises on a smaller scale with up to twelve T-POD monitoring positions from 2008 to 2012. The inclusion of these data, although not mandatory, would be an extremely valuable added benefit for the aim of the project presented in this application. The German Oceanographic Museum is applying for co-funding at WWF Germany for the analysis and inclusion of these additional data into modelling approach presented here.</p>
<p><b>Relevance to ASCOBANS</b></p>	<p>The aim of ASCOBANS is to promote close cooperation between countries with a view to achieving and maintaining a favourable conservation status for small cetaceans throughout the Agreement Area. It is the only international body with an explicit mandate to improve the conservation status of harbour porpoises in the Baltic Sea, as outlined in the “Jastarnia Plan”, the ASCOBANS Recovery Plan for Baltic Harbour Porpoises. In its 2009 Revision high priorities for research and monitoring include the analysis of stock affinities of harbour porpoises in the “transition zone” between two or more populations of the south-western Baltic (Recommendation 5), the development and application of new techniques (e.g. acoustic monitoring) for assessing trends in abundance (Recommendation 6) as well as the examination of habitat preference of harbour porpoises (Recommendation 12).</p>

While stock affinities (Recommendation 5) cannot be assessed in the project presented, it can give conclusive insights into the temporal and spatial distribution of the Belt Sea and Baltic Proper sub-populations in the transition zone as proposed by Gallus et al. 2011 for the easterly 2005 to 2007 DPD-data. In the presented project, a longer time period and a finer time-resolution will be investigated, re-evaluating the findings of Gallus et al. 2011 and considering not only the Baltic proper subpopulation, but also the Belt Sea population by including all monitoring data obtained in the western part of the German Baltic Sea. Long term deployed passive acoustic monitoring data will be used to assess trends in abundance (Recommendation 6), revealing seasonal pattern on a finer scale and over a longer time period compared to as shown in Verfuss et al. (2007, 2008), examining the habitat preference of harbour porpoises (Recommendation 12) and the factors influencing trends and preferences of porpoises in the German Baltic Sea.

**Activities**

Fortunately, all of the T-POD data to be analysed in this project have already been collected during the field work of the above mentioned projects. Figure 2 shows the time frame, during which data were obtained at the monitoring positions which are shown in Figure 1.

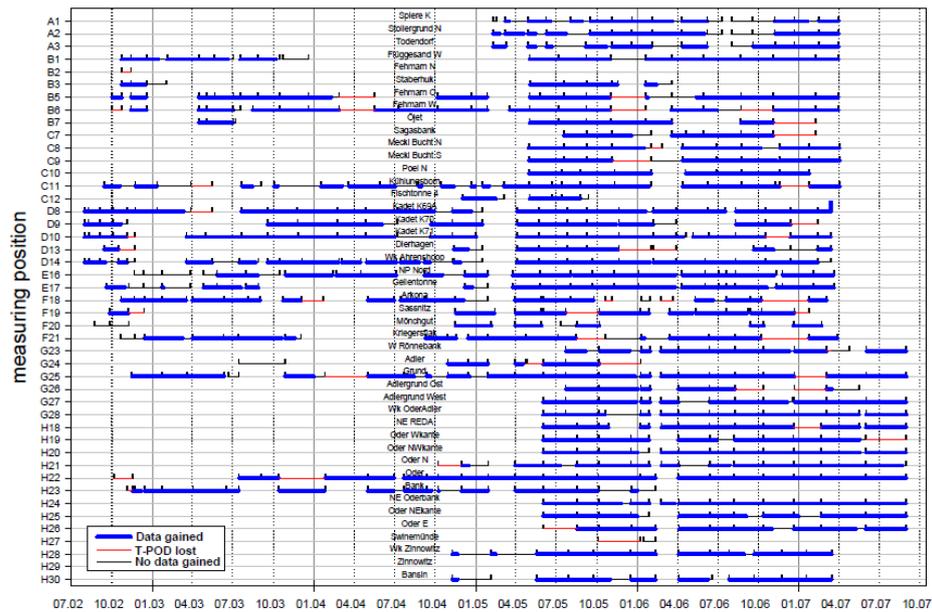


Figure 2 Time periods during which T-PODs were deployed on measuring positions A1 to H30 (please see Figure 1 for their location). The study period covers July 2002 (07.02) to October 2007 (10.07). Time periods with successful data acquisition are highlighted in thick blue. (Source: Verfuss et al 2008)

All T-POD data have been processed by the T-POD software and were exported into an ACCESS-data base for further analysis. Environmental data for the time period of 2002 to 2007 are on hand to us obtained from the five Baltic Sea MARNET mess masts, which locations are given in Figure 1. Those are:

- Salinity (at different depths)
- Water temperature (at different depths)
- Air temperature
- Wind direction

- Wind speed
- Current
- Oxygen saturation (at different depths)
- Salinity (at different depths)

We will furthermore include the topography of the German Baltic Sea, fish availability as obtained by trawl surveys, which data are held at ICES, as well as information on sunrise and sunset. Further data on chlorophyll A and water transparency will be allocated by German country agencies.

**Processes to be conducted:**

Following processes need to be conducted to reach the objectives of the present application:

**Data compilation:**

T-POD data

T-POD data sets need to be compiled and prepared for the visual inspection.

Environmental data

The environmental data need to be compiled and prepared for the inclusion into the ACCESS data base.

**Visual inspection of T-POD data:**

The experience within the projects mentioned above is that the harbour porpoise detection algorithm of the T-POD software mentioned in section "Background / Problem" works sufficiently well in areas with high porpoise density, revealing a high ratio of correct versus false detections. However, in low density areas like the Pomeranian bay and during low density times like the winter months, the correct / false detection ratio is low, and it is advisable to visual inspect all classified trains, i.e. those classified as harbour porpoise but also those classified as from unknown sources. This in a first instance reduces the false detection rate of the T-PODs porpoise classifications, but also increases the number of correct detections as porpoise detections classified as from unknown sources (false negatives) are taken into account. This in turn increases the power of data obtained in the low density area.

For being able to keep comparability between data obtained in low as well as high density areas, data obtained in the latter have to be visually inspected in the same way as those obtained in low density.

93 % of the present data are visually controlled on an hourly basis, while 7 % of the data still need to be visually controlled for hours with porpoise detections.

**Data processing:**

Environmental and T-POD data have to be combined and queries have to be written in the ACCESS data base to compile a data set that meets the demands of the data model.

**Data modelling:**

A model will be created to investigate which factors influence the temporal and spatial change in DPH.

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	<p><b>Scientific publication:</b></p> <p>The results will be interpreted and summarized in a scientific publication that ensures the distribution of the obtained results and discussion of the conclusions within the scientific community.</p>																																																																																																		
<p><b>Outputs</b></p>	<p>The outcomes of this project will be published in a peer-reviewed international journal (e.g. Endangered Species Research or Marine Environmental Progress Series).</p>																																																																																																		
<p><b>Work Plan and Timetable</b></p>	<table border="1"> <thead> <tr> <th rowspan="2">Activity</th> <th colspan="3">2013</th> <th colspan="7">2014</th> </tr> <tr> <th>10</th> <th>11</th> <th>12</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> </tr> </thead> <tbody> <tr> <td>Data compilation</td> <td style="background-color: #d9ead3;"></td> <td style="background-color: #d9ead3;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>T-POD data</td> <td></td> </tr> <tr> <td>Environmental data</td> <td></td> </tr> <tr> <td>Visual inspection</td> <td></td> <td style="background-color: #d9ead3;"></td> <td style="background-color: #d9ead3;"></td> <td style="background-color: #d9ead3;"></td> <td style="background-color: #d9ead3;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Data processing</td> <td></td> <td></td> <td></td> <td></td> <td style="background-color: #d9ead3;"></td> <td style="background-color: #d9ead3;"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Data modelling</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="background-color: #d9ead3;"></td> <td style="background-color: #d9ead3;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Publication writing</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="background-color: #d9ead3;"></td> </tr> </tbody> </table> <p>SMRU Marine Ltd is responsible for the implementation of all activities.</p> <p>Dr. Ursula Verfuss will lead on the data compilation, with contributions from Anja Gallus (GOM) and Michael Dähne (ITAW). She is furthermore responsible for the visual inspection, the data processing and the manuscript writing, latter with input of all involved scientists. Dr. Cormac Booth is conducting the data modelling.</p>	Activity	2013			2014							10	11	12	1	2	3	4	5	6	7	Data compilation											T-POD data											Environmental data											Visual inspection											Data processing											Data modelling											Publication writing										
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<p><b>Project Personnel</b></p>	<p>Dr. Ursula Verfuss, Senior Scientist, SMRU Marine Ltd  <i>Email:</i> <a href="mailto:ukv@smru.co.uk">ukv@smru.co.uk</a>  <i>Phone:</i> +44 (0)1334-479 100  <i>Project role:</i> Project lead &amp; management, data visual inspection and processing, publication writing  <i>Profile:</i> Specialised in bioacoustics, PAM of harbour porpoises, data base creation, project management</p> <p>Dr. Cormac Booth, Principal Scientist, SMRU Marine Ltd  <i>Email:</i> <a href="mailto:cgb@smru.co.uk">cgb@smru.co.uk</a>  <i>Phone:</i> +44 (0)1334-479 100  <i>Project role:</i> Data modelling  <i>Profile:</i> Specialised in bioacoustics, PAM, harbour porpoise, modelling</p> <p>Anja Gallus, Senior Scientist, GOM  <i>Email:</i> <a href="mailto:anja.gallus@meeresmuseum.de">anja.gallus@meeresmuseum.de</a>  <i>Phone:</i> +49 (0)3831-2650393  <i>Project role:</i> Preparation of PAM data, visual control of acoustic data  <i>Profile:</i> Specialised in PAM of harbour porpoises</p>																																																																																																		

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	<p>Michael Dähne, Senior Scientist, ITAW)  <i>Email:</i> <a href="mailto:Michael.Daehne@tiho-hannover.de">Michael.Daehne@tiho-hannover.de</a>  <i>Phone:</i> +49 (0)511 856 8157  <i>Project role:</i> Preparation of environmental data  <i>Profile:</i> Specialised in PAM of harbour porpoises</p>																																																																	
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Visual inspection of T-POD data	24.0	£ 250.00	£ 6,000.00	€ 7,001.17																																																														
Allocation of environmental data			£ 291.38	€ 340.00																																																														
Data processing	6.0	£ 540.00	£ 3,240.00	€ 3,780.63																																																														
Data modelling	7.0	£ 640.00	£ 4,480.00	€ 5,227.54																																																														
Publication	7.0	£ 540.00	£ 3,780.00	€ 4,410.74																																																														
<b>Total</b>	<b>46.0</b>		<b>£ 18,871.38</b>	<b>€ 22,020.28</b>																																																														
Time / costs covered by SMRU Marine	8.5	£ 540.00	£ 4,590.00	€ 5,355.89																																																														
<b>Remaining costs</b>			<b>£ 14,281.38</b>	<b>€ 16,664.39</b>																																																														
10 % reduction for non-profit organisations			£ 1,428.14	€ 1,666.44																																																														
<b>requested ASCOBANS contribution</b>			<b>£ 12,853.24</b>	<b>€ 14,997.95</b>																																																														
<p><b>Literature cited</b></p>	<p>Gallus, A., Dähne, M., Verfuß, U.K., Bräger, S., Adler, S., Siebert, U. and Benke, H. (2012): Use of static passive acoustic monitoring to assess the status of the 'Critically Endangered' Baltic harbour porpoise in German Waters. In: Endangered Species Research 18 (3): 265-278.</p> <p>Verfuß, U. K., Dähne, M., Meding, A., Honnef, C. G., Jabbusch, M., Adler, S., Mundry, R., Hansen Rye, J., Charwat, H. and Benke, H. (2008): Teilprojekt 3 - Untersuchungen zur Raumnutzung durch Schweinswale in der Nord- und Ostsee mit Hilfe akustischer Methoden (PODs), (FKZ: 0329946C). Minos-plus - Weiterführende Arbeiten an Seevögeln und Meeressäugern zur Bewertung von Offshore - Windkraftanlagen, Nationalparkamt Schleswig-Holsteinisches Wattenmeer, Tönning, Endbericht, S.:1-88.</p> <p>Verfuß, U. K., Honnef, C. G., Meding, A., Dähne, M., Adler, S., Kilian, A. and Benke, H. (2008): The history of the German Baltic Sea harbour porpoise acoustic monitoring at the German Oceanographic Museum. In: Wollny-Goerke K. &amp; Eskildsen K. (Eds.): Marine warm-blooded animals in North and Baltic Seas, MINOS – Marine mammals and seabirds in front of offshore wind energy. Teubner Verlag. Wiesbaden: 41-56.</p> <p>Verfuß, U. K., Honnef, C. G., Meding, A., Dähne, M., Mundry, R. and Benke, H. (2007): Geographical and seasonal variation of harbour porpoise (<i>Phocoena phocoena</i>) presence in the German Baltic Sea revealed by passive acoustic monitoring. Journal of the Marine Biological Association of the United Kingdom 87: 165-176.</p>																																																																	

For more information please contact the ASCOBANS Secretariat at  
[ascobans@ascobans.org](mailto:ascobans@ascobans.org).

### Short CVs

#### **Dr. Ursula Verfuss**

Ursula has 20 years of experience studying and working within the marine mammal field. She developed a wide range of practical, analytical and management skills through her involvement with many European projects. She was a member and team leader of the Harbour porpoise research team at the German Oceanographic Museum, Stralsund, Germany for nine years. During this time, she was co-ordinating, conducting and participating in the R&D projects on the passive acoustic monitoring of harbour porpoises in the German Baltic Sea.

Specific research expertise includes:

- Underwater sound recordings and bioacoustics: Master and PhD involved the investigation of the echolocation behaviour of odontocete species during foraging and orientation by means of synchronised video and sound recordings.
- Marine Mammal Monitoring: The use of passive acoustic monitoring methods to detect cetacean species.
- Calibration of passive acoustic monitoring devices.

#### **Dr. Cormac Booth**

Cormac has spent the last 10 years gaining experience studying marine mammals both in the UK and abroad, in the laboratory and in the field. His interests include the distribution, ecology and acoustic behaviour of cetacean species and investigating anthropogenic impacts on marine mammals.

Specific research expertise includes:

- Distribution and Ecology of Cetaceans: PhD involving a range of habitat modelling and GIS techniques and conducting visual and towed-acoustic, line-transect surveys to study habitat preferences and distribution of harbour porpoise.
- Marine Mammal Monitoring: The use of passive acoustic monitoring methods to detect cetacean species. Development of GAM and GEE models to robustly assess marine mammal patterns and deal with spatial and temporal autocorrelation. Also familiar with a range of field techniques including: photo-identification and biopsy sampling.
- Assessing anthropogenic impacts on marine mammals: Investigating the extent of seal scarer use, sound field assessment and impacts of such devices on small cetacean distribution.

**FORMAT FOR PROJECT PROPOSALS  
FOR THE CONSIDERATION OF THE ASCOBANS ADVISORY COMMITTEE**

<b>Title</b> Effects of underwater explosions on habitat use of porpoises and research on bottom-set gill net exclusion zones	<b>Justification:</b> (to be completed by the Secretariat)	<b>Project ID:</b> (to be completed by the Secretariat) 2013/09
<b>Implementing Agency / Applicant</b>	Prof. Dr. Ursula Siebert Dipl. Ing. Michael Dähne Stiftung Tierärztliche Hochschule Hannover Institut für Terrestrische und Aquatische Wildtierforschung (ITAW) Werftstr. 6 25761 Büsum Germany Tel. +49 511 856-8158 Fax +49 511 856-8181 <a href="mailto:ursula.siebert@tiho-hannover.de">ursula.siebert@tiho-hannover.de</a>	
<b>Collaborating Agencies / Other Sponsors</b>	Deutsches Meeresmuseum, Germany	
<b>Background / Problem</b>	Assessment of underwater noise caused by recovering/ destroying of ammunition close to sanctuaries (marine natura 200 sites).  The impacts of high-energy impulsive sounds generated by underwater explosions on individual marine mammals are diverse, ranging from behavioral reactions to injury or even death. Unexploded ordnance (ammunition) in the marine environment and its safe disposal is a recurring problem in German waters. After World War II, large amounts of ammunition, mainly mines and chemical weapons, were dumped into the Baltic and North Seas. One of these ammunition dump sites is located in shallow water in the Kiel Bight (German Baltic Sea), which is a protected area (EU-Code: DE 1528– 39). Porpoises, like other odontocetes, use sound for echolocation to navigate and locate prey (Verfuss et al. 2005). They have an acute sense of hearing; thus they are highly susceptible to the effects of high-energy impulsive sound emissions. In 2006, the “explosive ordnance disposal service” of Schleswig-Holstein began removing the more than 100 mines and warheads dumped in the Kiel Bight by detonating them. On-going discussions led to a situation, where a procedure, how to react (chain of information) when unexploded bombs, mines or other detonators are found, is established. However it is unclear how much more ammunition will be found during the next years and to what extent they will have to be removed by underwater detonations due to the necessary protection of human life in cases when explosives are found in heavily trafficked areas. Within the area of concern there is also a fire danger area of the German Marine which has used underwater explosives in the past.	
<b>Objectives</b>	Measurement of underwater noise and porpoise habitat use for one year	

## ASCOBANS Project Proposal Format

	to detect when ammunitions may be safely removed due to low porpoise abundance and to develop guidelines for future actions.
<b>Relevance to ASCOBANS</b>	ASCOBANS has highlighted the removal of unexploded ordnance in a discussion paper (Koschinski 2012) and an IWC paper (Koschinski & Kock 2009). Explosions will be on-going at least for the next decade and research is needed to specify the risk for porpoises in the German, Polish and Danish Baltic and to a lesser degree in the North Sea. As the Kiel Bight will be exposed multiple times in the future it is one of the best starting points for evaluations. If impulses are detected from explosions, cetaceans in general are collected for the Schleswig-Holstein coast at ITAW so that post-mortem findings can be used to verify a possible noise cause for a stranding event.
<b>Activities</b>	<p>Two noiseloggers are to be deployed within the Kiel Bight for 1 year as a starting point. Positions are to be agreed upon with the authorities (Federal Maritime and Hydrographic Agency, Water and Shipping Authorities, German Military).</p> <p>The research shall be conducted in concurrence evaluating bottom set gillnet exclusion zones with 8 measuring positions using C-PODs in Kiel Bight up to the Fehmarn Belt area. Objectives in that project are to establish a basis for discussion about the efficacy of the proposed measures as gillnets are partly prohibited at times when porpoise abundance is low, but not when fish density and porpoise activity has been reported to be high according to Scheidat et al. 2008 and Verfuß et al. 2008. Although we generally agree that measures against the use of gill nets are necessary, we would recommend a monitoring of these areas as well as a test whether the measures show an effect in high density areas.</p> <p>However, tests of PALs (Boris Culik, Forschung/Fakten/Fantasie) as an alternative to traditional pingers are currently preferred for the high density areas Fehmarnbelt and inner parts of the Kiel Bight in concurrence with by-catch monitoring. It is unclear at the moment whether these measures are efficient to mitigate porpoise by-catch in high density areas in comparison to regular pinger use and it is doubtful whether a sound data basis can be established within a reasonable time span of some years according to our data of strandings and recorded by-catch of fishermen from the region. By-caught harbour porpoises are rarely handed over by fishermen so that the majority of dead harbour porpoises are found as stranding. It is furthermore argued, that pingers cannot work effectively within these areas due to very high background noise. A long-term dataset of noiseloggers can be used to disprove these argumentations.</p> <p>Another on-going argumentation is that coastal zones are not necessarily used by porpoises although no measurement data exists to substantiate such argumentation for very shallow areas (0-10 m depth). We will deploy C-PODs in a straight line from shore to provide argumentation.</p> <p>Methodologies of POD measurements are given in Dähne et al. accepted, Verfuß et al. 2007, Rayment et al. 2009, Tougaard et al. 2009, Kyhn et al. 2012 and Gallus et al. 2012. Background of ordnance removal in Kiel Bight is provided in Koschinski &amp; Kock 2009, Koschinski 2012 and Sundermeyer et al. 2012.</p>
<b>Outputs</b>	<p>The project shall generate the following outputs:</p> <ul style="list-style-type: none"> <li>• Guidelines on when tests of explosives (military) and</li> </ul>

## ASCOBANS Project Proposal Format

	<p>ordnance removal shall be conducted from a biological perspective</p> <ul style="list-style-type: none"> <li>• Provision of measurement data to show possible avoidance reactions concurrent to impulse explosion noise or thereafter</li> <li>• Provision of argumentations for restriction zones for bottom-set gill nets in Schleswig-Holstein with regard to:             <ul style="list-style-type: none"> <li>○ Depth distribution of porpoises</li> <li>○ Seasonal occurrence of porpoises and provision of argumentation for prohibition actions in times of high occurrence rates</li> </ul> </li> </ul>																																																																																																																																																					
<b>Work Plan and Timetable</b>	<p>Start: 01.11.2013 End: 30.04.2015</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">2013</th> <th colspan="10">2014</th> <th colspan="4">2015</th> </tr> <tr> <th>11</th> <th>12</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>11</th> <th>12</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td><b>Preparation of deployments</b></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td></td> </tr> <tr> <td>1 - deployment locations - necessary permission</td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td></td> </tr> <tr> <td><b>Deployment period</b></td> <td></td> <td></td> <td style="background-color: #cccccc;"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Servicings</b></td> <td></td> <td></td> <td style="background-color: #cccccc;"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Evaluation of data collected</b></td> <td></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> <td style="background-color: #cccccc;"></td> </tr> <tr> <td><b>Development of Guidelines</b></td> <td></td> <td style="background-color: #cccccc;"></td> </tr> </tbody> </table>		2013		2014										2015				11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	<b>Preparation of deployments</b>																			1 - deployment locations - necessary permission																			<b>Deployment period</b>																			<b>Servicings</b>																			<b>Evaluation of data collected</b>																			<b>Development of Guidelines</b>																		
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<b>Project Personnel</b>	<p>Research will be carried out at ITAW by the project coordination of Prof. Dr. Ursula Siebert (CV attached), <a href="mailto:ursula.siebert@tiho-hannover.de">ursula.siebert@tiho-hannover.de</a>, Fax: +49(0)5118568181, Tel: +49(0)5118568153</p> <p>Research will be carried out by Ole Meyer-Klaeden under supervision of Michael Dähne (CV attached), <a href="mailto:Michael.daehne@tiho-hannover.de">Michael.daehne@tiho-hannover.de</a>, Tel: +49(0)5118568157</p>																																																																																																																																																					
<b>Budget Estimates</b>	<p>The project itself will be applied for at the "Research Foundation Baltic Sea" hosted by the German Oceanographic Museum in Stralsund. Hence funding of the part of ASCOBANS strongly depends on whether the research is funded by the foundation at costs of ~100.000 €.</p> <p>We would like to apply for the following funds:</p> <ol style="list-style-type: none"> <li>1. Two noise loggers (type DSG-9, Loggerhead, costs for a single unit at exchange rate of 07.07.2013: 5,583.90 € * 2 = 11,167,80 €)</li> <li>2. Staff for ¼ position for 1 month for placement of the loggers, additional work due to logger set-up and read out (German military has an interest in these data and must be involved in meaning: loggers are most probably to be opened together with representatives from the BUND). Cost: 3.540,00 €</li> </ol> <p>Total budget: 14.707,80 €</p>																																																																																																																																																					
<b>References</b>	<p>Dähne M, Verfuß UK, Brandecker A, Siebert U, Benke H Methodology and results of calibration of tonal click detectors for small odontocetes (C-PODs). J Acoust Soc Am</p> <p>Gallus A, Dähne M, Verfuß UK, Bräger S, Adler S, Siebert U, Benke H (2012) Use of static passive acoustic monitoring to assess the status of the "Critically Endangered" Baltic harbour porpoise in German waters. Endangered Species Research 18:265–278</p> <p>Koschinski S (2012) Underwater noise pollution from munitions clearance and disposal, possible effects on marine vertebrates, and its mitigation. In: 19th ASCOBANS Advisory Committee</p>																																																																																																																																																					

## ASCOBANS Project Proposal Format

	<p>Meeting. Noise Working Group, ASCOBANS, Galway, Ireland, p AC19/Doc.4–10(WG)</p> <p>Koschinski S, Kock K-H (2009) Underwater unexploded ordnance – methods for a cetacean-friendly removal of explosives as alternatives to blasting. Rep Int Whal Commn SC/61/E21:1–13</p> <p>Kyhn LA, Tougaard J, Thomas L, Duve RL, Stenback J, Amundin M, Desportes G, Teilmann J (2012) From echolocation clicks to animal density — Acoustic sampling of harbor porpoises with static dataloggers. The Journal of the Acoustical Society of America 131:550–560</p> <p>Rayment W, Dawson S, Slooten L (2009) Trialling an automated passive acoustic detector (T-POD) with Hector's dolphins (<i>Cephalorhynchus hectori</i>). Journal of the Marine Biological Association of the United Kingdom 89:1015–1022</p> <p>Scheidat M, Gilles A, Kock KK-H, Siebert U (2008) Harbour porpoise <i>Phocoena phocoena</i> abundance in the southwestern Baltic Sea. Endangered Species Research 5:215–223</p> <p>Sundermeyer JK, Lucke K, Dähne M, Gallus A, Krügel K, Siebert U (2012) Effects of underwater explosions on presence and habitat use of porpoises in the German Baltic Sea. In: Popper AN, Hawkins A (eds) The Effects of Noise on Aquatic Life, Advances in Experimental Medicine and Biology. Springer New York, New York, NY, p 289–291</p> <p>Tougaard J, Carstensen J, Teilmann J, Skov H, Rasmussen P (2009) Pile driving zone of responsiveness extends beyond 20 km for harbor porpoises (<i>Phocoena phocoena</i> (L.)). The Journal of the Acoustical Society of America 126:11–4</p> <p>Verfuß UK, Honnef CG, Meding A, Dähne M, Adler S, Kilian A, Benke H (2008) The history of the German Baltic Sea harbour porpoise acoustic monitoring at the German Oceanographic Museum. In: Wollny-Goerke K, Eskildsen K (eds) Marine mammals and seabirds in front of offshore wind energy. Teubner Verlag / GWV Fachverlage GmbH, Wiesbaden, p 41–56</p> <p>Verfuß UK, Honnef CG, Meding A, Dähne M, Mundry R, Benke H (2007) Geographical and seasonal variation of harbour porpoise (<i>Phocoena phocoena</i>) presence in the German Baltic Sea revealed by passive acoustic monitoring. Journal of the Marine Biological Association of the UK 87:165–176</p>
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**CV Professor Dr. Ursula Siebert**

**EDUCATIONAL QUALIFICATIONS**

- 1986-1992 Study of Veterinary Medicine  
at the Justus-Liebig-Universität Giessen, Germany,  
at the Ecole Vétérinaire de Nantes, France (funded by  
the DAAD and EU-Erasmus-Program)
- 1992-1995 Doctoral thesis  
at the Free University of Brussels, Belgium (funded by the  
European Science Foundation) and  
at the Justus-Liebig-Universität Giessen, Germany,
- 1992-1996 Training in  
1.) Veterinary Pathology  
2.) Wild Animal Medicine  
3.) Aquaculture
- 2007 Habilitation in Zoology at the Christian-Albrechts-  
University of Kiel
- Practical courses Texas Marine Mammal Stranding Network, Galveston  
at the Institute for Pathology at University of Montreal,  
Canada, Beluga Pathology  
University of Delft Image Processing  
Ultrasound: Dolphinarium, Paris, France, Dolphinarium  
Brugge, Belgium  
IFREMER Nantes and Rennes for Aquaculture
- 2011 Habilitation approved by the University of Veterinary  
Medicine Hannover, Foundation
- 2012 Diplomate of European College of Zoological Medicine  
(Wildlife Populations Health)

**CURRENT EMPLOYMENT**

- since July 2011 Director of the Institute for Terrestrial and Aquatic Wildlife  
Research (ITAW) of the University of Veterinary Medicine  
Hannover, Foundation, Germany

**PREVIOUS EMPLOYMENT**

## ASCOBANS Project Proposal Format

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May 1996-June 2011	Leader of the section "Ecology of marine mammals and birds" at the Forschungs- and Technologiezentrum Westküste (FTZ), Büsum, University of Kiel, Germany
1997-2004	Veterinarian incharge for Fjord-and Belt Center porpoises and seals
1992-1994	Research associate at the Institute of Veterinary Pathology at the Justus-Liebig-Universität Giessen, Germany, in the research project „Investigations on the abundance, health status and migration of small cetacean population in German waters“, funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
1994-1996	Research associate at the Institute for Veterinary Pathology at the Justus-Liebig-Universität Giessen, Germany, in the research project „Investigation on small cetaceans as basis of a monitoring“, funded by the German Federal Ministry for Research and Technology

### MEMBERSHIPS

1. Board member of the European Cetacean Society (ECS) 1994-1998
2. International Expert Panel for Offshore-Windmeelparks in Denmark (IAPEME) 2000-2006
3. Pollution 2000+ Steering Group of the Internationalen Walfangkommission (IWC) 2000-2006
4. Nationale Contactperson for the European Cetacean Society (ECS)
5. Member of the Trilateral Seal Expert Group of the Common Wadden Sea Secretariat (TSEG)
6. Member of ICES Working Group on Marine Mammals (ICES)
7. European Association of Zoo and Wildlife Veterinarians (EAZWV)
8. European Association for Aquatic Mammals (EAAM)
9. Society for Marine Mammology (SMM)
10. Advisory Committee of the Nature Commissioner of Schleswig-Holsteins
11. Nationalpark Curatoriums Dithmarschen
12. Advisory Committee for the Federal Research Agency for Fishery
13. Steering Group for Research on Marine mammals of the Dolphinarium Harderwijk („des Alpes“), Holland
14. Member of the Reviewing Panel for the Portugese Research Ministry
15. Member of the Advisory Board of the FNRS, Belgium
16. Chair of the Scientific Board of the Seal Station Friedrichskoog, Germany

**REFEREE FOR THE FOLLOWING JOURNALS (EXAMPLES)**

Marine Biology (Associated Editor)  
Journal of Wildlife Diseases (Associated Editor)  
Archive of Environmental Contamination and Toxicology  
Environmental Science and Technology  
Marine Pollution Bulletin  
Latin American Journal of Aquatic Mammals  
Science of the Total Environment  
Aquatic Mammals  
Marine Biology Research  
Journal of Applied Ecology  
European Science Foundation  
Marine Mammal Research and Conservation  
NAMMCO Scientific Publications  
Mammalia  
European Journal of Wildlife Research  
Marine Mammal Science  
Comparative Biochemistry and Physiology  
Veterinary Pathology  
Journal of Veterinary Research

**SUPERVISION OF PHD STUDENTS (EXTRACTIONS):**

Anita Gilles, 2008, "Characterisation of harbour porpoise (*Phocoena phocoena*) habitat in German waters" (principal supervisor)

Klaus Lucke, 2009, "Auditory studies on marine mammals"

Henrike Seibel, 2009, "Influence of Distemper virus infection on the expression of virus specific surface receptors and different cytokines in phocine lymphocytes"

Kristina Lehnert, 2009, "Occurrence, pathological potential and molecular characterisation of parasites from harbour porpoises (*Phocoena phocoena*) and harbour seals"

Helena Herr, 2009, "Occurrence of harbour porpoises (*Phocoena phocoena*) in the North and Baltic Sea: potential conflicts with shipping and fishery activities"

Lutz Ahrens, 2010, "Polyfluoroalkyl Compounds in the Marine Environment – Investigations on their Distribution in Surface Water and Temporal Trends in Harbor Seals (*Phoca vitulina*)"

Sabine Götze (to be finalized autumn 2013) Analyses of the interactions of cetaceans with fisheries in Galicia and distant waters fleets (Ph.D.-study)

Denise Risch (to be finalized autumn 2013) A multispecies approach for studying acoustic behaviour and ecology with reference to anthropogenic noise in a marine sanctuary (Ph.D.-study)

Michael Dähne (to be finalized autumn 2013) Use of acoustic methods for the protection of harbour porpoise (*Phocoena phocoena*) in German Waters (Ph.D.-study)

**International PhD-Defenses**

Krishna Das: „Trace metal contamination and detoxication processes in marine mammals from European coasts“, University Liege, Belgium (2002).

Georg Engelhard: „Southern elephant seal population declines: the human onshore disturbance hypothesis“, University Gronningen, The Netherlands (2002).

Maja Kirksgaard: „Effects of longterm dietary exposure to organohalogen contaminants on vitamin and hormone status in the Greenland sledge dog (*Canis familiaris*)“, University Odense, Denmark (2010).

Thea Østergaard Bechshøft: A temporal study of industrial pollution and climate change biomarkers in Greenland polar bears (*Ursus maritimus*), University Aarhus, Denmark (2011).

Maria Morell: „Ultrastructural analysis of Odontocete cochlea“, Laboratori d'Aplicacions Bioacústiques Universitat Politècnica de Catalunya, Spain (2012)

Sarah Habran: "Kinetics of trace elements and stable isotopes during lactation and post-weaning fast in Phocids" University Liege, Belgium, (2012)

Okka Jansen: „Fishing for Food: Feeding ecology of harbour porpoises *Phocoena phocoena* and white-beaked dolphins *Lagenorhynchus albirostris* in Dutch waters“, University Wageningen, The Netherlands, (2013).

Sabrina Trocini: „Conservation of the endangered loggerhead turtle (*Caretta caretta*): health assessment and hatching success of Western Australian populations“, Murdoch, University, Australia (2013).

### SCIENTIFIC AWARDS

#### Poster prize

22st CONFERENCE OF THE EUROPEAN CETACEAN SOCIETY, 2008 Poster "Influences of methyl-, phenyl-, ethylmercury and mercurychlorid on lymphocyte proliferation and cytokine expression in harbour seals" Kakuschke, A., Valentine-Thon, E., Fonfara, S., Kramer, K., **Siebert, U.**, Prange, A.

#### Poster prize

22st CONFERENCE OF THE EUROPEAN CETACEAN SOCIETY, 2008  
"North Sea vs Baltic sea- comparison of immune system parameters in harbour seals"  
Kramer, K., Fonfara, S., Kakuschke, A., **Siebert, U.**, Dietz, R., Prange, A.

#### Best Poster

International Council of the Exploration of the Sea (ICES)

"From Seals to cells: Protein biomarkers to reveal effects of persistent pollutants on primary hepatocytes of *Phoca vitulina*" Vera Korff Co-authors: Annika Behr, Antonia Wargel, Kristinia Lehnert, **Ursula Siebert**, Veronika Hellwig. 2010 Nantes, France.

#### Best Poster

International Council of the Exploration of the Sea (ICES)

"Isolation of primary liver cell cultures of harbour seals (*Phoca vitulina*) for identification of novel biomarkers of pollutant influence" Veronika Hellwig Co-authors: Antonia Wargel, Annika Behr, and Ursula Siebert. 2007 Helsinki, Finland.

### Selected Publications (Peer-Reviewed)

Ahrens L., **Siebert U.** and Ebinghaus R. 2009. Total body burden and tissue distribution of polyfluorinated compounds in Harbor Seals (*Phoca vitulina*) from the German Bight. *Marine Pollution Bulletin* 58, 520-525.

Ahrens L., **Siebert U.** and Ebinghaus R. 2009. Temporal trends of polyfluoroalkyl compounds in harbor seals (*Phoca vitulina*) from the German Bight, 1999-2008. *Chemosphere* 76, 151-158.

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Human Activities and the Effects of Climate Change. Nature Conservation and Biodiversity, No. 116, Bonn - Bad Godesberg, p 487-542

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## ASCOBANS Project Proposal Format

### CV Michael Dähne

1. **Family name:** Dähne
2. **First names:** Michael
3. **Date of birth:** 1975-06-05
4. **Nationality:** German
5. **Civil status:** Single
6. **Education:**

Institution	Degree(s) or Diploma(s) obtained:
Weinberggymnasium Kleinmachnow, Brandenburg	A-Levels (Abitur), 1995
University of Rostock	Engineer for land management and environmental protection (Diploma), 2005
University Kiel	PhD-Thesis on “Using passive acoustic methods to determine harbour porpoise distribution”, ongoing

7. **Language skills:** Indicate competence on a scale of 1 to 5 (1 – excellent; 5 – basic)

Language	Reading	Speaking	Writing
German	1	1	1
English	1	1	1
Russian	3	5	5
French	5	5	5

8. **Membership of professional bodies:**

Society for Marine Mammalogy  
European Cetacean Society  
Acoustical Society of America

9. **Other skills:** (e.g. Computer literacy, etc.)

Computer programming (R, Visual Basic, Matlab)  
Database engineering (MsAccess)  
GIS  
Maintenance and calibration of acoustic equipment  
Software skills: Microsoft Office, SigmaPlot, DASyLab, Sound recording & analysis  
Programs, T- and C-POD.exe, FeFlow, Didger, Grapher, Surfer

10. **Present position:** **Scientist**

11. **Years within the firm:** 2

12. **Key qualifications:**

Underwater acoustics, bioacoustics, effects of noise on marine mammals, passive acoustic monitoring of marine mammals, new technologies for assessing marine mammals, use of remote sensing technologies, numerical models  
Is presently leading scientist in projects:

- for assessing the impacts of offshore wind farms
- monitoring porpoises in the Wadden Sea
- assessing the masking potential of airguns in Antarctica
- combined analysis of broad band hydrophone data and marine mammal occurrence.

## ASCOBANS Project Proposal Format

### 13. Professional experience

Date from - Date to	Location	Company	Position	Description
2004-2006	Stralsund	German Oceanographic Museum	Research assistant	Employment for the scientific team of the German Oceanographic Museum within multiple projects on passive acoustic monitoring of odontocetes
2005-2006	Stralsund	Freelance	Database and literature projects	Database engineering for marine mammal monitoring (strandings database, T-POD database), designing of user-interfaces for databases to assure data safety and practicability
2006-2009	Stralsund	German Oceanographic Museum	Scientist	Research and consulting projects on monitoring harbour porpoises and using new technologies for monitoring/assessment.
2009-2011	Büsum/ Stralsund	Research and Technology Centre Westcoast	Scientist/ PhD student (ongoing)	Scientific work on the use of bubble curtains for noise mitigation for instance during pile driving. PhD student on new methodologies to assess porpoise distribution and abundance.
2011-pres	Büsum	University of Veterinary Medicine Hannover	Scientist (ongoing PhD-studies at University Kiel)	Scientist in research projects covering effects of noise on marine mammals, analysis of habitat use, using auditory evoked potentials on harbour porpoises and seals to determine hearing thresholds and sensitivity to noise.

### 14. Other relevant information:

Organizer of the international workshop “Remote sensing to assess the distribution and abundance of seabirds and marine mammals: Possible future applications for Unmanned Aerial Vehicles (UAVs)” held in Stralsund 20-21 November 2008.

List of publications (2004 onwards):

#### International Scientific Publications

Verfuß, UK, **Dähne, M.**, Gallus, A, Jabbusch, M and Benke, H (accepted) Determining the detection thresholds for harbor porpoise clicks of autonomous data loggers, the Timing Porpoise Detectors. Journal of the acoustical society of America.

**Dähne, M.**; Verfuß, UK; Brandecker, A; Siebert, U and Benke, H (accepted) Methodology and results of calibration of tonal click detectors for small odontocetes (C-PODs). Journal of the Acoustical Society of America.

**Dähne, M.**; Gilles, A; Lucke, K; Peschko, V; Adler, S; Krügel, K; Sundermeyer, J and Siebert, U (2013) Effects of pile-driving on harbour porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. Environmental Research Letters, Vol. 8, 2 <http://iopscience.iop.org/1748-9326/8/2/025002>

Gallus, A.; **Dähne, M.**; Verfuß, U.; Bräger, S.; Adler, S.; Siebert, U. and Benke, H. (2012) Use of static passive acoustic monitoring to assess the status of the ‘Critically Endangered’ Baltic harbour porpoise in German waters. Endangered Species Research, 18, pp. 265–278

Verfuß,U.K.; Honnef,C.G.; Meding,A.; **Dähne, M.** ; Mundry,R. & Benke,H. (2007). Geographical and seasonal variation of harbour porpoise (*Phocoena phocoena*) presence in the German Baltic Sea revealed by passive acoustic monitoring. Journal of the Marine Biological Association of the United Kingdom 87. S. 165-176.

#### Book chapters

Sundermeyer, J. K.; Lucke, K.; **Dähne, M.**; Gallus, M.; Krügel, K. and Siebert, U. (2012) Effects of Underwater Explosions on Presence and Habitat Use of Harbor Porpoises in the German Baltic Sea. In: A.N. Popper and A. Hawkins (eds.), Effects of Noise on Aquatic Life. Springer Science+Business Media, LLC, New York. pp 289-291 DOI 10.1007/978-1-4419-7311-5\_64

Lucke, K.; **Dähne M.**; Adler S.; Brandecker, A.; Krügel K.; Sundermeyer, J. K.; and Siebert, U. (2012) Evaluating the Effects of Offshore Pile Driving on *Phocoena phocoena* (Harbor Porpoises) by Using Passive Acoustic Monitoring In: A.N. Popper and A. Hawkins (eds.), Effects of Noise on Aquatic Life. Springer Science+Business Media, LLC, New York. pp 285-287 DOI 10.1007/978-1-4419-7311-5\_64

Verfuß,U.K.; Honnef,C.G.; Meding,A.; **Dähne, M.**; Adler,S.; Kilian, A. & Benke, H. (2008). The history of the German Baltic Sea harbour porpoise acoustic monitoring at the German Oceanographic Museum. In: Wollny-Goecke, K. & Eskildsen, K. (eds) Marine mammals and seabirds in front of offshore wind energy.

### Other scientific publications

**Dähne, M.**, Harder, K. & Benke, H. (2012) Ergebnisse des Totfundmonitorings von Schweinswalen (*Phocoena phocoena*) an der Küste Mecklenburg-Vorpommerns im Zeitraum 1990-2010. Natur und Naturschutz in Mecklenburg-Vorpommern 41 : 51-63.

I. Hasselmeier, A. Gilles, H. Herr, **M. Dähne**, H. Benke und U. Siebert (2011). Bestandserhebung und Totfundmonitoring von Schweinswalen in der Ostsee. In: Meer und Museum - Wale und Robben in der Ostsee. Schriftenreihe des Deutschen Meeresmuseums und OZEANEUMs Stralsund, **23**: 113-120.

Gallus, A., Verfuß, U.K., **Dähne, M.**, Narberhaus, I. & Benke, H. (2011) Akustisches Monitoring von Schweinswalen in der Ostsee. In: Meer und Museum - Wale und Robben in der Ostsee. Schriftenreihe des Deutschen Meeresmuseums und OZEANEUMs Stralsund, **23**: 131-142.

**Dähne,M.**; Verfuß,U.K.; Diederichs,A.; Meding,A. & Benke,H. (2006). T-POD Test Tank Calibration and Field Calibration. Proceedings of the European Cetacean Society, Gdynia, Poland. Special Issue, 46: 20th annual Meeting (Apr/2006). S. 34-36

Verfuß, U.K.; Honnef, C.G.; Meding, A.; **Dähne, M.** & Benke,H. (2006). Passive acoustic monitoring of harbour porpoises (*Phocoena phocoena*) in the German Baltic Sea. Document AC13/ Doc. 24 (P). Expert paper presented at the ASCOBANS 13th Advisory Committee Meeting. Tampere. Finland. 25 – 27 April 2006.

Verfuß,U.K.; Honnef,C.G.; Meding, A.; **Dähne, M.** & Benke,H. (2006). Monitoring porpoises in low-density areas. In: Proceedings of the Workshop Static Acoustic Monitoring of Cetaceans, held at the 20th Annual meeting of the European Cetacean Society. Gdynia. Poland. 2nd April 2006. ECS Newsletter No. 46 – Special Issue. July 2006

### Reports and consultancy publications (incomplete)

**Dähne,M.**; Harder, K. und Benke, H. (2009). Totfundmonitoring von Schweinswalen (*Phocoena phocoena*) an der Küste Mecklenburg-Vorpommerns von 2004 bis 2009. Bericht des Deutschen Meeresmuseum an das Landesamt für Umwelt, Naturschutz und Geologie, Güstrow. 16 S.

**Dähne,M.**; Gallus, A.; Verfuß, U. K.; Adler, S. und Benke, H., (2009). Erprobung eines Bund/Länder-Fachvorschlags für das deutsche Meeresmonitoring von Schweinswalen als Grundlage für die Erfüllung der Natura 2000 – Berichtspflichten mit einem Schwerpunkt in der deutschen AWZ der Ostsee. Endbericht für die Christian-Albrechts-Universität Kiel, Forschungs- und Technologiezentrum Westküste.

**Dähne,M.**; Grenzdröffer,G.; Foy,T.; Wegener,T.; Harder,K. & Benke,H. (2009). Entwicklung von neuartigen Fernerkundungstechniken und deren Einsatz mit unbemannten Kleinflugzeugen zur Erfassung der marinen Säugetiere, insbesondere von Schweinswalen (*Phocoena phocoena*) sowie anthropogener Beeinflussungen in ausgewählten Bereichen von Nord- und Ostsee (Remplane). Final Report of the DBU-Project (Az. 25770). p. 1-70.

**Dähne,M.**; Honnef,C.G.; Verfuß,U.K.; Meding,A.; Adler,S. & H.Benke (2007). Praktische Erprobung eines Schweinswalmonitorings in der Ostsee im Sinne der FFH-Richtlinie. Final Report of the BfN Project 2007. p. 1-50.

Verfuß,U.K.; Jabbusch,M.; **Dähne, M.**; Benke,H.; Charwat,H.; Rye,J.H.; Honnef,C.G., Meding,A. & Benke,H. (2007). Teilprojekt 3 - Untersuchungen zur Raumnutzung durch Schweinswale in der Nord- und Ostsee mit Hilfe akustischer Methoden (PODs) (FKZ: 0329946C). In: Minos-plus - Weiterführende Arbeiten an Seevögeln und Meeressäugern zur Bewertung von Offshore – Windkraftanlagen. 3ter Zwischenbericht.

Verfuß,U.K.; **Dähne,M.**; Honnef, C.G., Meding, A. & Benke,H. (2007). AMPOD Applications and analysis methods for the deployment of T-PODs in environmental impact studies for wind farms: Comparability and development of standard methods (FKZ: 0327587). 1ter Zwischenbericht Deutsches Meeresmuseum Stralsund. Stralsund, Germany. S. 1-17.

**Dähne,M.**; Meding,A.; Verfuß,U.K.; Honnef,C.G. & Benke,H. (2006). Teilvorhaben I: Akustisches Monitoring mit stationären Schweinswal-Detektoren (PODs). In: Untersuchungen an Schweinswalen in der Ostsee als Grundlage für die Implementierung des Bestandserholungsplanes für die Schweinswale der Ostsee (Jastarnia Plan), (FKZ:804 86 011–K1) 2ter Zwischenbericht. Bundesamt für Naturschutz, Vilm, Germany. S. 3-20.

Honnef,C.; Verfuß,U.K.; Meding,A.; **Dähne,M.** & Benke,H. (2006). Erfassung von Schweinswalen in der deutschen AWZ der Ostsee mittels Porpoise-Detektoren; Endbericht über das FuE-Vorhaben. Deutsches Meeresmuseum Stralsund. Stralsund. S. 1-34.

Verfuß,U.K.; Honnef, C.G.; Meding,A.; **Dähne, M.** & Benke,H. (2006). Teilprojekt 3 – Untersuchungen zur Raumnutzung durch Schweinswale in der Nord- und Ostsee mit Hilfe akustischer Methoden (PODs). In: FKZ: 0329946C , In: MINOSplus- Weiterführende Arbeiten an Seevögeln und Meeressäugern zur Bewertung von Offshore – Windkraftanlagen. 2ter Zwischenbericht.

### Conference presentations

Ruser, A.; **Dähne, M.**; Sundermeyer, J.; Lucke , K.; Houser, D.; Driver, J.; Rosenberger, T.; Pawliczka, I.; Siebert, U. (2013) Evoked potential audiograms of grey seals (*Halichoerus grypus*) from the North and Baltic Seas . Posterpräsentation. 27th Annual Conference of the European Cetacean Society, Setúbal, Portugal, 8-10 April 2013

**Dähne, M.**, Lucke, K., Jacobsen, M., Ruser, A., Weychardt, J-H. & Siebert, U. (2012) Attenuating sound underwater with air bubble curtains: practicality and attenuation efficiency. Talk presented at the ECUA 2012, Edinburgh, UK.

Wehrmeister, E.; Hasselmeier, I.; Seibel, H.; Gilles, A.; **Daehne, M.**; Siebert, U. (2012). Marine mammal research in Germany, Proceedings International conference on diseases of zoo and wild animals, Bussolengo, Italy, 16-19 May 2012

Gallus, A., **Dähne, M.**, Verfuß, U.K., Bräger, S., Adler, S., Siebert, U. & Benke, H. (2012) New from an endangered population: porpoises in the Baltic proper. Poster presented at the 26th annual conference of the European Cetacean Society, Galway, Ireland.

Herrmann, A., Verfuß, U.K., Zbinden, D., Krügel, K., **Dähne, M.** & Benke, H. (2012) Which environmental factors influence the harbour porpoise population of the St Lawrence Estuary, Canada? Poster presented at the 26th annual conference of the European Cetacean Society, Galway, Ireland.

Wennerberg, D., Thomas, L., Tougaard, J., Tregenza, N., Koblitz, J., Kyhn, L., **Dähne, M.**, Teilmann, J., Nuutila, H. & Amundin, M. (2012) Novel approaches to calculating a C-POD detection function for the harbour porpoise (*Phocoena phocoena*). Poster presented at the 26th annual conference of the European Cetacean Society, Galway, Ireland.

**Dähne, M.**, Koblitz, J., Gallus, A., Siebert, U., Benke, H. (2011) Comparison of static acoustic monitoring devices. Poster presented at the 25th annual conference of the European Cetacean Society, Cadiz, Spain.

Verfuß, U., Adler, S., Brandecker, A., **Dähne, M.**, Diederichs, A., Gallus, A., Herrmann, A., Krügel, K., Lucke, K., Teilmann, J., Tougaard, J., Tregenza, N., Siebert, U. & Benke, H. (2011) AMPOD: Applications and analysis methods for the deployment of T-PODs in environmental impact studies for wind farms: comparability and development of standard methods. Poster presented at the 25th annual conference of the European Cetacean Society, Cadiz, Spain.

Krügel, K., Brandecker, A., **Dähne, M.**, Gallus, A., Lucke, K., Verfuß, U.K., Benke, H. & Siebert, U. (2011) The effects of offshore pile driving on the behavior of harbor porpoises (by using passive acoustic monitoring). Poster presented at the 25th annual conference of the European Cetacean Society, Cadiz, Spain.

**Dähne, M.**, Lucke, K., Jacobsen, M., Weychardt, J.H., Siebert, U. (2010) Design of an effective air bubble curtain for noise mitigation in offshore construction work. Poster presentd at the 24th annual conference of the European Cetacean Society, Stralsund, Germany

Lucke, K., **Dähne, M.**, Adler, S., Brandecker, A., Krügel, K., Sundermeyer, J.K. & Siebert, U (2010) Wind farm construction: Various way of monitoring effects on harbour porpoises (*Phocoena phocoena*) – passive acoustic monitoring. Poster presentd at the 24th annual conference of the European Cetacean Society, Stralsund, Germany

**Dähne, M.**, Verfuß, U.K., Adler, S., Meding, A., Honnef, C.G., Bräger, S. und Benke, H. (2009) Static acoustic monitoring of harbour porpoises in the German Baltic Sea – How many devices do you need? Presented at the 1st International Workshop on Density Estimation of Marine Mammals Using Passive Acoustics, Pavia, Italy. 13.09.2009.

**Dähne,M.**, Verfuß, U.K., Brandecker, A., Krügel, K., Lucke, K. und Benke, H. (2009) Calibrating Click detectors – A methodology to calibrate click detectors. Poster presented at the 22nd annual conference of the European Cetacean Society, Istanbul.

**Dähne, M.** 2009. UAS studies being conducted in Europe – an overview. Presented at the workshop Using unmanned aircraft systems to study marine mammals and other wildlife species at the Biennial Conference of the Society for Marine Mammology 2009, Quebec, Canada.

**Dähne,M.**; Grenzdörffer, G.; Foy, T. und Benke, H. (2009). Feasibility study on marine mammals and seabirds in the German Baltic Sea. Presented at the workshop Using unmanned aircraft systems to study marine mammals and other wildlife species at the Biennial Conference of the Society for Marine Mammology 2009, Quebec, Canada.

## ASCOBANS Project Proposal Format

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Grenzdörffer, G. & **Dähne, M.** (2009) Airborne remote sensing and UAVs for marine mammal monitoring. 29th EARSeL Symposium: Imagin(e/g) Europe. Greece.

Sundermeyer, J., Krügel, K., Lucke, K., **Dähne, M.**, Gallus, A., Siebert, U. (2009) Effects of underwater explosions on presence and habitat use of harbour porpoises in the German Baltic Sea. Presented at the 22nd annual conference of the European Cetacean Society, Istanbul.

**Dähne, M.**; Verfuß, U.; Meding, A.; Grenzdörffer, G. & Benke, H. (2008). Harbour porpoises and seals in the German Baltic Sea. Talk presented at the workshop: Remote sensing to assess the distribution and abundance of seabirds and marine mammals: Possible future applications for Unmanned Aerial Vehicles (UAVs) held in Stralsund 20-21 November 2008.

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