VECTORS of Change in Oceans and Seas Marine Life, Impact on Economic Sectors

SP1 - Cooperation

Collaborative Project - Large-scale Integrating Project

FP7 – OCEAN - 2010

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Title:	Report on kick off meeting		
Lead Partner for Deliverable	Plymouth Marine Laboratory		
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VECTORS Overview

'VECTORS seeks to develop integrated, multidisciplinary research-based understanding that will contribute the information and knowledge required for addressing forthcoming requirements, policies and regulations across multiple sectors.'

Marine life makes a substantial contribution to the economy and society of Europe. In reflection of this VECTORS is a substantial integrated EU funded project of 38 partner institutes and a budget of €16.33 million. It aims to elucidate the drivers, pressures and vectors that cause change in marine life, the mechanisms by which they do so, the impacts that they have on ecosystem structures and functioning, and on the economics of associated marine sectors and society. VECTORS will particularly focus on causes and consequences of invasive alien species, outbreak forming species, and changes in fish distribution and productivity. New and existing knowledge and insight will be synthesized and integrated to project changes in marine life, ecosystems and economies under future scenarios for adaptation and mitigation in the light of new technologies, fishing strategies and policy needs. VECTORS will evaluate current forms and mechanisms of marine governance in relation to the vectors of change. Based on its findings, VECTORS will provide solutions and tools for relevant stakeholders and policymakers, to be available for use during the lifetime of the project.

The project will address a complex array of interests comprising areas of concern for marine life, biodiversity, sectoral interests, regional seas, and academic disciplines and especially the interests of stakeholders. VECTORS will ensure that the links and interactions between all these areas of interest are explored, explained, modeled and communicated effectively to the relevant stakeholders. The VECTORS consortium is extremely experienced and genuinely multidisciplinary. It includes a mixture of natural scientists with knowledge of socio-economic aspects, and social scientists (environmental economists, policy and governance analysts and environmental law specialists) with interests in natural system functioning. VECTORS is therefore fully equipped to deliver the integrated interdisciplinary research required to achieve its objectives with maximal impact in the arenas of science, policy, management and society.

www.marine-vectors.eu

Event: VECTORS kick off meeting and first meeting of Reference User Group

Venue: Faro, Portugal

Date: 28th February – 3rd March 2011

Contents

1. Agenda

Presentations are available from the VECTORS website - www.marine-vectors.eu

Monday February 28th

1700-1900 Registration

Tuesday March 1st Day 1

0800 Registration
0900 Intro and welcome from Mel Austen and Jacques Fuchs (EC Project Officer)

What is VECTORS?

Chair Sharon Tatman
0910 General description of project. Mel Austen (coordinator) PML

Description of WPs from WP leaders: 15 mins each including questions
0930 WP1 David Paterson University of St Andrews
0945 WP2.1 Stefano Piraino CONISMA-LE
1000 WP2.2 Doug Beare DLO-IMARES
1015 WP2.3 Paul Marchal IFREMER
1030 WP3.1 Tas Crowe University College Dublin
1045 WP3.2 Mel Austen/Caroline Hattam PML
1100 Coffee
Chair Paolo Domenici
1130 WP3.3 Erik Buisman DLO-LEI
1145 WP4.1 Francesc Maynou ICM / CSIC Paolo Domenici CNR-IAMC
1200 WP4.2 Myron Peck University of Hamburg
1215 WP4.3 Margit Eero DTU-Aqua
1230 WP5.1 Will Le Quesne CEFAS
1245 WP5.2 Paulo Nunes
1300 Lunch

Chair Denis Baily
1430 WP6 Daryl Burdon University of Hull
1445 WP7 Mel Austen/Juliet Thompson PML
1500 WP7 Open Earth data sharing Sharon Tatman/Gerrit Hendriksen Deltares
1530-1630 **Reference User Group Session: Making VECTORS research accessible for its users**

Chair Mel Austen
1545 RUG The concept (Mel) including RUG discussions with RUG and VECTORS partners
1630 Tea/Coffee

Early evening
1700-1830 Steering Group Meeting
1900-2000 Icebreaker reception – Real Marina Hotel
2000 – Dinner in Olhão

Wednesday March 2nd Day 2

Morning
0900-0930 Management of VECTORS project – Mel Austen
0930 WP6 Ballast Water Management Matej David University of Ljubljana
0945 WP1 Monitoring direct and indirect ecological impacts - Scoping workshop
Convenor: Dave Paterson
0945 WP 3.3 Economics modelling workshop
Convenor: Erik Buisman
1300 Lunch

Afternoon
1430 WP4 separate Regional seas kick-off meeting
Convenors: Fransesc Maynou/Paolo Domenici, Margit Eero, Myron Peck
1600 Tea/coffee
1730-1900 Joint Regional seas meetings
Convenors: Henn Ojaveer EMI & Francesc Maynou/Paolo Domenici, Margit Eero, Myron Peck
1930 Conference dinner Hotel Real Marina, Olhão

Thursday March 3rd Day 3

Morning
0900 Plenary: summary of day 2 activities, actions arising – Mel Austen
0930 Meeting of systematic review steering group (including socio-economists and modellers) (WP3.1);
Convenors Tas Crowe and Andrew Pullen
1300 Lunch

1430 Definition of interfacing processes and data exchange needs of different modelling/impact assessment exercises (WP5.2) *Convenors: Paulo Nunes and Fransesco Bosello*
1630 Tea/coffee
1700 WP7 Dissemination discussion – Mel Austen & Sharon Tatman
1730 Plenary: Summary of day 3 activities, actions arising
Management and next steps – Mel Austen
1900 Finish

2. Workshop Report

2.1 WP3.1 Systematic review workshop: Summary of outcomes

Report prepared by Tas Crowe, University College Dublin

Background and objectives

Systematic review is a formal structured process to test explicit hypotheses using meta-analysis of existing datasets that have been systematically collated and quality controlled. Some details are available in the DOW and Rebecca Mant (BANGOR) outlined the process at another session at the meeting. As part of WP3.1, systematic reviews are planned to address the following broad question: "How will X affect biodiversity and ecosystem functioning?" where 'X' is:

1. Invasive Alien Species (IAS)
2. Outbreaks Forming Species (OFS)
3. Changes in Distribution and Productivity (CDP)
4. Interactions among the above

...and 'how' refers to the nature and magnitude of effects.

This workshop aimed to refine those questions in terms of the following:

- Intervention – e.g. which IAS / OFS?
- Population – which regions & habitats?
- Outcome – effects on which aspects of biodiversity? Which ecosystem functions?

This was done in plenary to facilitate broad input from the VECTORS community to maximise integration with and relevance to upstream and downstream work packages. The WPs with the most direct connection to the systematic reviews are WP 2 (upstream) and WPs 3.2, 5.1, 4 and 6 (downstream).

Outcomes

The discussion focussed primarily on the relevant 'interventions'. In terms of 'populations', we will aim to focus on each of the case study regions, but will draw on wider literature as appropriate. The habitats and 'outcomes' of interest will be contingent on decisions about the intervention.

1. Invasive Alien Species

WP2.1 is taking a broad view of IAS, rather than focussing on a few individual species. There is therefore no clear rationale for selecting individual species for systematic review. Nevertheless, it will not be possible to review impacts of all invasive species. Therefore the following selection criteria were agreed:

a) Select species that are considered to be having the most impact on ecosystems and with greatest potential to impact ecosystem services, economy and society (e.g. in terms of productivity, fish catches (e.g. impacted by gelatinous predators of fish prey), tourism, aquaculture, fouling, etc.).
b) Select comparatively well-studied species, for which sufficient data are available for meta-analysis. Note that this may exclude recent invaders, for which few data have yet been collected. However, some recent and potential invaders have been well studied in other parts of the world and may be relevant.
c) To make comparisons among the case study regions, it was noted that few species will be common to all regions. It was therefore proposed that we select groups of species with similar functional roles (e.g. benthic filter feeders) so that several representative species can be chosen for each region. These groupings may be a good way to feed findings into the Atlantis modelling framework in WP 5, for which biological components are often parameterised at the functional group level. Under criterion (a) above, it may also be necessary to select some taxa that are unique to each region.

Stephan Gollasch agreed to help with this selection process.

At a subsequent session, it was also proposed that it may be of value to adopt the Biopollution Assessment framework (see Task 3.1.2 in the DOW) for summarising the findings of some of the reviews and making them accessible to researchers, environmental managers and policy makers. An extensive set of reviews following a similar methodology have been done in the Baltic (by KU-CORPI) and are already accessible at http://www.corpi.ku.lt/databases/index.php/binpas/. The framework could also be applied to species in the North Sea and the Mediterranean. This would require integration with WP2.1 as the framework includes information about distribution and spread as well as impact. The framework currently lacks socio-economic impacts, but these could be derived from WP3.2, 3.3 and 3.4 and incorporated.

2. Outbreak Forming Species (or Outbreaking Indigenous Species)

There was initially some discussion about what constitutes an 'indigenous' species. Although this distinction separates the first and second reviews to some extent, its conceptual importance is limited as impacts of sudden increases in individual populations may be similar regardless of the origin of the species.

There was also some discussion of the difficulties of defining an outbreak (and the selection of control conditions for comparison). Definitions of outbreaks include terms like 'sudden' and 'unexpected'. A working definition for VECTORS should be developed in WP 2.1. Attention should also be paid to the literature on regime shifts as these sometimes involve outbreaks.

To link with other work packages, a focus on gelatinous zooplankton was proposed. Jennifer Purcell indicated that data will be sparse, however, and recommended careful selection of comparatively well studied species, such as a large jellyfish (recently reviewed) and perhaps also some ctenophores.

It was also suggested that Harmful Algal Blooms should be the other focal group for this review as they are important (including in socio-economic terms) and are receiving comparatively little attention elsewhere in VECTORS.

Data may also be available for fish, e.g. the changes associated with changes in dominance in the Baltic by pelagic (clupeid) species and ground fish (cod).

3. Changes in distribution and productivity

WP2.2 includes considerable emphasis on changes in productivity and how they flow through higher trophic levels. It is anticipated that there will be work on selected species of fish and shellfish, but the refinement of this WP is ongoing and focal species for systematic review cannot yet be recommended. On this basis, impacts of changes in productivity may be an appropriate area of emphasis for the systematic reviews.

4. Interactive effects

Information about interactive effects of combinations of changes (e.g. changes in productivity combined with arrival of invasive species) will emerge from the searches used in each of the individual systematic reviews. It will be set aside by the separate teams and collated in its own right.

It is anticipated that there will be comparatively few relevant quantitative studies.

General discussion

Comment was requested from the WP6 (policy) team. They will consider whether there are any particular priorities for systematic review based on legislative requirements that could be incorporated under the headings above and revert shortly.

2.2 WP4.1 Mediterranean Regional Sea: Summary of outcomes

Report prepared by Francesc Maynou (ICM/CSIC)

Participants: all WP41 participants; EC representative (Jacques Fuchs); project coordinator (Mel Austen).

Objectives:

The general objective of this meeting was to review WP41, as given in the DoW, in order to have all institutions and persons participating in this workpackage fully informed and prepared to produce the work required. The actions to be taken in the near future (next few months), particularly in relation to the review process of WP1, were also decided in this meeting.

The particular objectives of this first meeting of Mediterranean sea participants were to:

- review the tasks as delineated in the DoW,
- assign responsible persons and collaborators to each task,
- identify links with other WP and responsible persons,
- prepare actions for the regional sea review which will serve as background material for WP 1.

Tasks and responsible persons for WP41

The participants in the meeting identified themselves and indicated to the WP41 leaders the subject of their expertise and to which task(s) they were to be assigned, either as responsible / contact person or as collaborator.

Contribution to WP1

It was decided that participants in WP41 would provide material to tasks in WP1 according to personal expertise. To organize the flow of material from WP41 participants to WP1 two responsible persons were nominated, who would liaise between WP1 Task responsibles and Mediterranean individual experts. In 3 tasks of WP1 (Transport, Energy and Ballast water) the Mediterranean group declared that there was not sufficient expertise within the group and will rely on "Champions" David Matej, and David Patterson to identify expertise or science gaps, and will collaborate with them as required.

Input to/from other WPs:

The links between WP41 and the other workpackages were reviewed in terms of expected input from WP41 to WPs 2-7 and from WPs 2-3 to WP41. The results of this discussion is summarized as follows:

- WP6 will provide help steer activities in WP41, in terms of societal necessities, including legislation. WP6 will provide framework (Maritime Strategy Directive, Good Environmental Status) to "drive" experiments and bio-economic modeling. This general framework will be common to the three regional seas.
- WP5.2 (Economic futures) will interface the general equilibrium model "ICES" with specific physical models in 4.1.8-4.1.10, regarding the dynamics of jellyfish and their impact on tourism.
- WP2.1 (Invasives and outbreaks) will combine results from the interaction between small pelagic fishes (particularly larval stages) and jellyfish (mapping between tasks 4.1.3-4 and tasks 2.1.1-2.12; Task 4.1.5 maps into 2.1.3). Other activities linking 2.1 and 4.1 are:
    - 2.1.5 (invasives) will help collect distribution data on multicellular invasive organisms in the Mediterranean
    - 2.1.6 will provide guidelines on preserving fauna for (future) barcoding analysis
- WP 3.1 (Ecosystem structure and functioning) will interface Task 3.1.3 (i) and (ii) with the experimental case studies is Tasks 4.1.5-6-7. Tasks in WP4.1 and Task 3.1.3 complement each other in the sense that Mediterranean participants will apply experimental design (common to other Atlantic case studies) in 3.1.3, while in WP4.1 they will apply modeling and ecophisiology
- WP 3.2 (Ecosystem services) will use material from the survey based valuation study in tasks 4.1.8-9.
- WP 3.3 (Economy – Ecology interactions) will benefit from data and models in WP4.1 to address the issue of bioeconomic integrated modelling of fisheries and jellyfish.

In order to benefit from the common integrated modelling approach envisaged in the other regional seas, based on the framework of the end-to-end model ATLANTIS, Mediterranean participants agreed to send a number of experts (determined by the availability of places) to the ATLANTIS course organized by CEFAS at ICES headquarters in Copenhagen in May 2011.

3. Closing Summation

Mel Austen, Project Coordinator
General Points / Summation

- The 'Oceans of Tomorrow' film crew are available to assist in creating short films about the VECTORS project, current suggestions are; Jelly Fish, Ballast water, Recreational use of our seas.
- Presentations have been loaded on to the VECTORS website at http://www.marine-vectors.eu/about_the_project/meetings.aspx
- It is recommended that work package Leaders write up their reports for internal dissemination.
- Meeting / workshop photos have been provided to the coms team
- Final work package outlines to be taken from the Description of Work
- Sign in sheets need to be completed for every workshop for EU auditing purposes
- Boarding passes should also be kept for EU auditing
- A VECTORS leaflet will be created
- A communications portal, such as Basecamp, will be set-up for internal communications
- Champions will be responsible for ensuring proactive communication about their sector over the 4 year life of the project in order to make sure that all key aspects are fully integrated throughout the project
- WP Leaders should consult with Champions on issues / activities concerning their Champion sector
- A generic VECTORS presentation will be created for use at conferences and events to raise awareness of the project
- John Pinnegar will be able to provide advice on scenario planning which is a major task in WP5.1. A scenario planning discussion will be initiated on the VECTORS internal communication portal. By month 6 the Regional Seas should aim to have a list of variables that they would like to define. The other WPs will need to keep informed about the development of the Regional Sea case study areas.

- Workshops can be via telephone conference as well as in-person meetings depending on the objectives and scope of the meeting

- Renewable energy is a strong sector that must be considered in all VECTORS research

- Proactive engagement by all partners will be necessary to ensure that VECTORS continues to be a highly interactive and integrated project.

- Forthcoming milestones were outlined as per the table below and include:
    - Regional Seas review in month 6
    - Regional Seas workshop in month 4
    - IFREMER will be holding a workshop on human behaviour scenarios for WP2.3; we need to make sure we are using the same scenarios for different WPs.
    - Systematic review teams will take place in month 8
    - Guidelines on dissemination will be due in month 8
    - In month 14 there will be science focused meetings which it would be good to co-locate so that they can be integrated parallel sessions / joint sessions

*Please see table below for further details

- The 2nd project meeting will include a RUG session as well as workshops on assessment in WP1 and WP7.

- A particular thank you to all of our speakers, WP Leaders, Work Shop Organisers, RUG and RAB participants Eva Gelabert and Jennifer Purcell respectively, and the PML team for organising and managing the conference.

Milestones

WPs	Milestone no.	Lead Beneficiary No.		Milestone name	Delivery date[2]	Comments
All	M1	1	PML	Kick off meeting (1st project meeting) and First meeting of Reference User Group	1	Meeting of systematic review steering group (including socio-economists and modellers) (WP3.1); Regional seas kick-off meetings ; WP1 Scoping Meeting/workshop: Monitoring direct and indirect ecological impacts; First economics modelling workshop (WP3.3); First workshop to define interfacing processes and data exchange needs of different modeling/impact assessment exercises (WP5.2)
8	M2	1	PML	Risk register complete	2	
3.1	M3	6	UCD	Systematic reviews and BTA Stakeholder consultation workshop;	2	finalise questions, protocols and teams for systematic reviews and BTA
5.1	M4	11	CEFAS	Workshop on the selection and setup of climatic and socio-political simulation scenarios	3	
8, 7	M5	1	PML	VECTORS webpage online	3	
4.1, 4.2, 4.3, 1	M6	13	CNR-IAMC	First Regional Seas workshops	4	including review of vectors and drivers of concern
1, 2	M7	15	IFREMER	First Workshops on human behaviour - scenario implementation	6	
3.1	M8	6	UCD	Meeting of systematic review teams	8	

WPs	Milestone no.	Lead Beneficiary No.		Milestone name	Delivery date[2]	Comments
7	M9	10	DELTARES	Guidelines on Open Earth integration, standardisation and dissemination	8	
1,2,3,4,5,6	M10	4	CONISMA	First Integrating workshops	12	Molecular tools for deciphering mechanisms of invasions and outbreaks (WP2&4); Data and Model Integration (WP2,3,4); Conceptual links, systematic reviews and experimental designs (WP3-all WPs); Second economics modelling workshop
7	M11	10	DELTARES	Repository for storage, back-up and version control of raw data, scripts and source code	14	
All	M12	1	PML	Second Project meeting	14	includes: workshops: assessment and integration of collated reports (WP1); integration, standardisation and dissemination of results (WP7)

4. Attendance List

No:	Organisation:	Delegate:
1	PLYMOUTH MARINE LABORATORY	Melanie Austen
1	PLYMOUTH MARINE LABORATORY	Sam Barrett
1	PLYMOUTH MARINE LABORATORY	Juliet Thompson
1	PLYMOUTH MARINE LABORATORY	Jenny Lockett
1	PLYMOUTH MARINE LABORATORY	Ana Queiros
1	PLYMOUTH MARINE LABORATORY	Paul Somerfield
1	PLYMOUTH MARINE LABORATORY	Momme Butenschon
1	PLYMOUTH MARINE LABORATORY	Caroline Hattam
1	PLYMOUTH MARINE LABORATORY	Helen Murray
2	UNIVERSITY OF ST ANDREWS	David M. Paterson
3	LEITAT	Minerva Elias
3	LEITAT	Marta Escamilla
4	CONISMA	Ferdinando Boero
5	vTI-SF	Anne Sell
5	vTI-SF	Gerd Kraus
6	UNIVERSITY COLLEGE DUBLIN	Tasman Crowe
7	DLO	Doug Beere
7	DLO	Erik Buisman
7	DLO	Heleen Bartelings
8	EMI-UT	Jonne Kotta
8	EMI-UT	Henn Ojaveer
9	WAGENINGEN UNIVERSITEIT	Rolf Groeneveld
9	WAGENINGEN UNIVERSITEIT	Dolf de Groot
10	DELTARES	Willem Stolte
10	DELTARES	Sharon Tatman
10	DELTARES	Gerrit Hendriksen
11	CEFAS	Will Le Quesne
12	UNIVERSITY OF HULL	Daryl Burdon
12	UNIVERSITY OF HULL	Richard Barnes
13	CNR-IAMC	Paolo Domenici
13	CNR-IAMC	Paolo Magni
13	CNR-IAMC	Andrea Cucco
14	NIOLR	Bella Galil
14	NIOLR	Esther Lubzens
14	NIOLR	Gil Rilov
15	IFREMER	Ching Villanueva
15	IFREMER	Paul Marchal
16	IFM-AAU	Alyne Delaney
16	IFM-AAU	Liv Berner
17	UNIVERSITA DI PISA	Laura Tamburello
18	ICM CSIC	Francesc Maynou
18	ICM CSIC	Josep-Maria Gili
19	FEEM	Fabio Eboli
19	FEEM	Helen Ding

19	FEEM	Paolo Nunes
20	UNIVERSITAET HAMBURG	Myron Peck
20	UNIVERSITAET HAMBURG	Marc Hufnagl
20	UNIVERSITAET HAMBURG	Maria Gambill
21	DTU-Aqua	Margit Eero
21	DTU-Aqua	Henrik Gislason
22	GOCONSULT	Stephan Gollash
23	UNIVERSITY OF BREST	Denis Bailly
23	UBO	Johanna Balle-Beganton
23	UBO	Katia Frangoudes
24	BANGOR UNIVERSITY	Rebecca Mant
25	KUCORPI	Sergej Olenin
25	KUCORPI	Anastasija Zaiko
25	KUCORPI	Jonathan Dan Minchin
26	HCMR	Eva Chatzinikolaou
26	HCMR	Christos Arvanitidis
28	NIOO	Pim Avesaath
29	SAHFOS	Priscilla Licandro
29	SAHFOS	Marcos Llope
30	UNIVERSITA PAVIA	Anna Occhipinti
30	UNIVERSITA PAVIA	Dario Savini
31	AGROCAMPUS-OUEST	Olivier Le Pape
32	UNIVERSITE DE ROUEN	Michel Desprez
33	CESA	Luciano Manzon
34	UNIVERZA V LJUBLJANI	Matej David
35	OGS	Cosimo Solidoro
36	IOW ROSTOCK	Holger Janssen
EU		Jacques Fuchs
RAB	WWU	Jennifer Purcell
RUG	European Environment Agency	Eva Gelabert