

EUROFLEETS+ WEBINAR HOW TO WRITE A PROPOSAL FOR THE **SEA** PROGRAMME

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**TAL
TECH**

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TOPICS

Survey Design and Planning

(by Pauhla McGrane and John Boyd, Marine Institute and Helene Leau, IPEV)



Training and dissemination – examples from Eurofleets2 applications and reviewers' comments



SURVEY DESIGN AND PLANNING

Clearly State:

Why?

- Justification for Survey and Data Sets Targeted

Where?

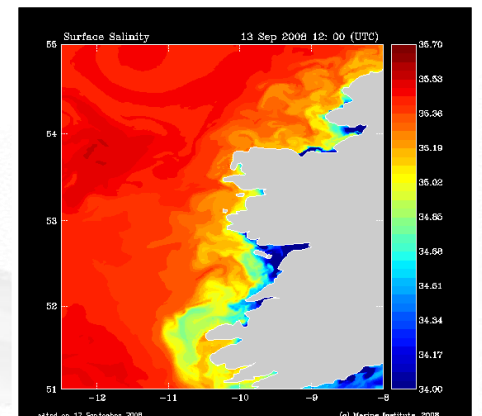
- Plot of Survey Site, Charts, GIS

When?

- Season, Survey Dates

How?

- Track Plan and Station Sequence





SURVEY DESIGN AND PLANNING: OBJECTIVES

Justification:

- Relevance of Objectives
- Data and Results to be Delivered
- Relation to Previous Data Sets
- Compliance with Habitats Directives
- Value for Money
- Opportunity

A SMART Survey Plan has:

- Specific Objectives
- Measurable Progress
- Attainable Goals
- Relevant Tasks
- Timely Delivery





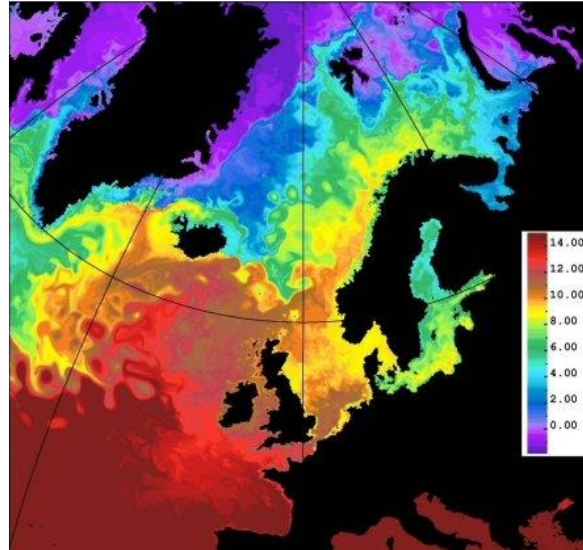
SURVEY DESIGN: WHEN?

Timing

- One off
- Annual
- Monthly
- Weekly

Influenced by:

- Weather
- Clients
- Biology
- Previous Surveys
- Permission
- Stakeholders

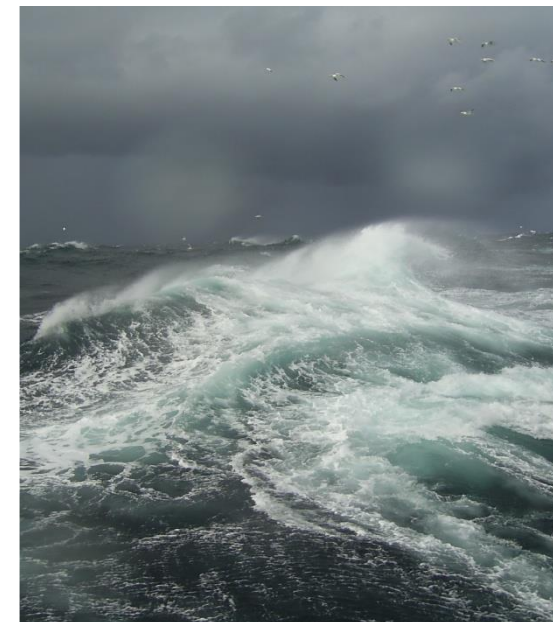


Shelf Edge, Spring Coccolithophore Bloom



SURVEY DESIGN: TIMELINE

Action	Time Line
Submission of Proposal	1-3 Yr. Prior
Detailed Work Plan	1 Yr. to 6 Mth.
Independent Evaluations	1 Yr. Prior
Allocation of Shiptime	1 Yr. Prior
Online Survey Planning	3-6 Mth. prior
Diplomatic Clearances	6 Mth. Prior
Certifications	1 Mth. Prior
Pre-cruise Meeting	1 Mth. Prior
Equipment and Technical Requests	6 Mth. Prior
Issue of Sailing Instructions	1 Mth. Prior
Mobilisation	1Wk. to 1 day Prior
Demobilisaton	1Day to 1 Wk. Post
Post-cruise Meeting	1 Wk. Post
Cruise Report	1 Mth. Post
Full Report	6 Mth. Post





IDENTIFYING A SUITABLE VESSEL

Choosing a survey vessel :

- Coastal or offshore capabilities
- Appropriate and current licences
- Certified Safety equipment
- Communications
- Navigational equipment
- Suitable winches & derricks
- Sample storage facilities
- Sufficient stowage of equipment
- Accommodation
- Toilet facilities
- 12 or 24 hour operations
- Value for Money



RV Celtic Explorer
MI - Ireland



RV Thalassa
IFREMER– France



RV Aranda- SYKE
MRC - Finland



RV Simon Stevin
VLIZ - Belgium



PERSONNEL: SURVEY PERSONNEL

Find:

- Experienced Captain & Crew

Ensure Scientific personnel are:

- Expert
- Experienced
- 12/24 h Operational Capacity

Find Outside Contractors for:

- Specialist Equipment

Ensure Appropriate Certification:

- ENG 11 Medical
- PST Sea Survival
- Liability and Insurance





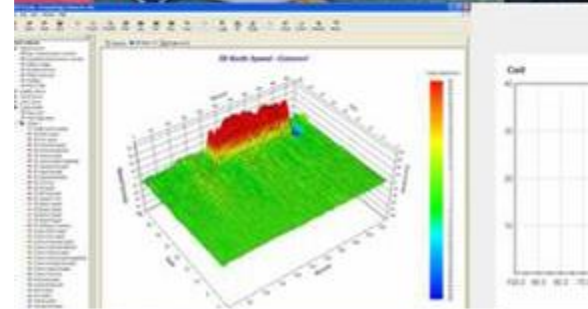
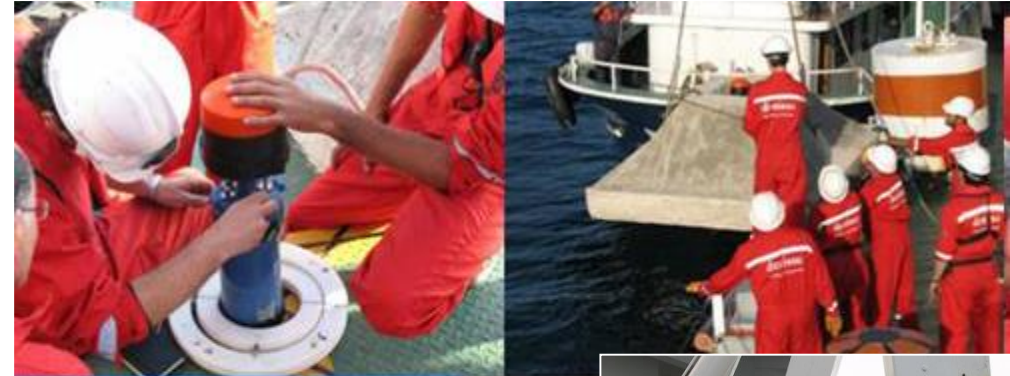
EQUIPMENT AND INSTRUMENTATION

List:

- Equipment (Nets, Grabs)
- Instrumentation (CTD, ADCP)
- IT Hardware & software
- Consumables

Match:

- Power requirements
- Stowage space
- Data storage
- Liability and insurance





CONSUMABLES

Recording, Processing & Preservation of Samples

- Log sheets, pencils, paper
- Storage vessels (bags, jars, flasks, etc.)
- Pre-print survey and sample codes & labels

Sample preservation (chemical, freezing, drying, heating, filtering etc.)

- Material Hazard Data Sheets
- Data storage
- Standard Operational Protocols agreed





CRUISE PLANNING – ESTIMATION OF TIME

Basic information needed

- Cruising speed of the vessel = max speed between two locations without performing operation
- Estimation of weather and sea conditions = take a look at the pilot chart
- Estimation of time needed for each type of operation (can depend on WD)
- Estimation of time needed to prepare the operation

Three types of operations

- En route operations: Acquisition of ADCP, EK60, thermosalinograph, etc.
- Reduced speed operations:
 - A – XBT launch, XCTD launch, some types of sounding acquisition , etc.
 - B – Swath acquisition (profiles) with hull mounted equipment : e.g. bathymetry
- Station operations: A – CTD; B – coring; etc.



CRUISE PLANNING – ESTIMATION OF TIME

Reduced speed operations:

Swath acquisition (profiles) with hull mounted equipment: e.g. bathymetry,

- Need to know the operating speed of the multi-beam echo-sounder
 - depends on the data quality requested (resolution = number of pings per bin);
 - depends on the sea conditions;
- Need to set the swath overlap
- Resolution (e.g., WD/100)
- Need to set time for echo-sounder calibration PRIOR to acquisition and DURING the acquisition, e.g., XBT launches (for water velocity input in echo-sounder)



CRUISE PLANNING – ESTIMATION OF TIME

Station operations:

CTD station and water sampling

- Time to get on station = to lower the speed to zero and set the vessel to the appropriate direction against swell, current, wind etc. This time varies with ship, ship operator, weather conditions
- Time to deploy the CTD and zero it, and to recover = 10 min (2*5 min)
- Way down and up, usually at 1 m/s (winch capacity) = 3000 WD about 1.6 hours; additional time for sampling at each chosen depth
- Check the sampling conditions, e.g., can the vessel leave the station while the sampling is being carried out?
- If the stations are very close, the time of the sampling must be added to the operation time



CRUISE PLANNING – ESTIMATION OF TIME

Station operations:

Coring

- Preparation time depends on the type of corer / length of corer (long core, gravity corer, box core, gravity type CASQ, multicore), number of operations, e.g., for long cores, usually 3 cores of various length are prepared; if the prepared corer do not fit the length required, then need to prepare a new core;
- Need to estimate time of the operation, including time to get «on station», time to deploy the corer: depends on length of the core. About 30 min for deployment, can be longer, way down and up;
- Include the sampling time: depends on the core length, the core type, and process extent (and number of scientists!);
- long cores: the processing time is 6 h min (core extraction, labelling, cutting in sections, splitting sections)
- CASQ core (large gravity): more than 12h if multilayer sampling.
- Core processing: the whole process can take up to 1 day.



OSPAR & HELCOM REGULATIONS

1. Avoid activities which could have long-lasting impacts on regional populations.
2. Avoid activities which could lead to substantial changes or damage to marine ecosystems.
3. When working in areas of particular ecological sensitivity or MPAs, care should be taken not to disturb the subject of protection (particularly protected species and biotopes).
4. Avoid collection of non-essential samples
5. Use the most appropriate and environmentally neutral study methods.
6. Ensure that transport of biota between different marine regions, which could lead to changes in the environment does not occur.
7. Avoid activities which disturb the experiments and observations of other scientists.
8. Data archive!



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Training and dissemination – examples from Eurofleets2 applications and reviewers' comments



TRAINING ISSUES

We aim to bring one student on the research cruise to help carry out the CTD watches and with water sampling for salinity, O₂ and nutrients. The student will be trained to take CTD profiles, obtain water samples, and work in a dry lab with the nutrient samples. The training during the cruise is an important part of the curriculum of a master degree in oceanography. The obtained hydrographic, ADCP and tracer data shall provide sufficient data to be analyzed for a master thesis.

Reviewers opinion – not enough



TRAINING ISSUES

Training of young scientists will begin on-board the ship (NN and others) and continue after samples are acquired and returned to the teams' respective laboratories. Work to characterize samples will be conducted in part by M.Sc. students in the framework of regular internships with the local universities, and by post-docs and doctoral students to enhance and broaden their expertise. Each of the project's individual teams has pledged that the project will be used to train at least 2 MSc or 1 doc/post doc over the course of the project (See the timeline in Section 4).

Reviewers opinion – very good; not clear how the students will be selected



TRAINING ISSUES

For the first cruise 24 berths will be taken by trained researchers and post docs for the various multidisciplinary operations. The 6 berths left will be offered to PhD students from .., .., ..and ... Universities. It will be a unique opportunity for them to be trained in such a wide range of pluri-disciplinary operations. For the second year we would like to open the cruise to more PhD and Master students in the various oceanographic fields, from the different European countries benefiting from the Eurofleets program. We would like to make this offer through the Eurofleets website and select the candidates on a motivation letter presenting the skills they would like to develop. Up to 14 berths would be thus attributed to students from the different European countries, favouring interaction and allowing them to start developing a European acquaintance ship for further collaborations. The transit from the departure port to ... and from ... to the arrival port will give time to organise lectures on the different oceanographic fields, owing to the pluri-disciplinary team of this program.

Reviewers opinion – very good; however topics and persons could be mentioned



TRAINING ISSUES

If the proposal will be successful, the young scientists and students involved in the project will have the opportunity to participate in the field operation for the data acquisition. During the cruise, adequate training will be provided regarding cruise planning, the on board technical equipment and its use, the preparation and deployment of the moorings, the oceanographic data and core storage, and the routine core analyses to be performed on dedicated sub-samples from the box cores. Moreover, short lectures performed by the on board scientist team will keep the student updated to the state of art of the investigated area and will provide a great opportunity to be involved in the scientific discussion.

We are keen to invite on board 1 (or 2) additional young scientist(s)/ student(s) external to the research team and selected from applicants to the Eurofleets training activity. We will also invite on board 1 (or 2) additional young scientist(s)/student(s) selected within the participants to the ... and ... projects

Reviewers opinion – excellent



DISSEMINATION

Public outreach will take place before, during and after the cruise as announcements and information on the project shall be posted on the websites of the A field blog where scientific background, purpose of the cruise, methods and cruise updates will be given along with pictures and short movies shall be set up. The research program shall also be disseminated on public science days at ... and we aim to involve Dutch, Danish, Greenlandic and U.S. media

Reviewers opinion – very good



DISSEMINATION

The shipboard participant list leaves 7 available berths for public outreach activities and training. The project will devote one of them to public outreach by embarking a journalist in charge of documenting activities and discoveries on board a research vessel, collecting video shots of crew and scientists and posting vignettes/short clips on a web blog, providing “short reports” corresponding to requests from primary and secondary schools. To increase impact, each participating laboratory has pledged to present the cruise to 1 primary school and to 2 secondary science classes.

Reviewers opinion – very good



DISSEMINATION

Project results will be disseminated in the academic community by scientific publications, individual/group contributions to international conferences (e.g. EGU and within IGCP 619 and INQUA 1204 projects), and a project description in EOS. To inform the general public and to comply with the IPY objective of attracting and developing the next generation of polar scientists, engineers and leaders, we aim to:

- issue press releases sent to the Universities/institutions press offices of each of the participants, for publication on the partner's websites. They may then widen the dissemination toward their local/national press. Connect with dissemination initiatives in the framework of the International Arctic Science Committee (IASC).
- devote a website (may be part of the project website) to provide information to the general public and stakeholders. The web site will have links and interaction with the EUROFLEETS portal and ... websites

Reviewers opinion – excellent



DISSEMINATION

Timeline of data exploitation is presented below in Table 3. The expected project's duration is slightly longer than 2 years. This is the time it usually takes to publish papers from sample collection. The strong likelihood that this cruise will yield a subsequent project will ensure that this timeline is followed.

Furthermore, a mid-term symposium will also contribute to timeliness. New findings will have been disseminated through oral/poster communications, through news/press releases, and most importantly through publication in peer-reviewed journals. We commit to produce > 10 publications of the findings of the ... cruise.

The database will be harbored at ... on dedicated, interconnected servers specialized for this purpose ...

Reviewers opinion – excellent

EUROFLEETS+ Webinar Proposal Writing

**Thank you very much and
good luck with your proposals!**

**Proposal Writing - a general introduction:
<https://www.arice.eu/training/webinars>**