

BASIN: Resolving the impact of climatic processes on ecosystems of the North Atlantic basin and shelf seas

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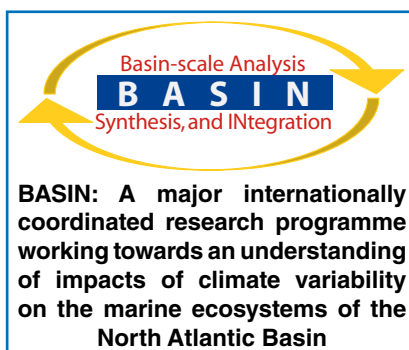
BASIN is an initiative to develop a joint EU North American research programme in the field of ocean ecosystems in support of the Global Earth Observation System of Systems (GEOSS) initiative. The first BASIN meeting took place in Iceland in March 2005 (see GLOBEC Report No.23). Four meetings are being held in 2007 to engage both the European and North American communities, explore coordinated funding mechanisms and to draft a BASIN Science Plan. The implementation of joint research programmes is at present a significant obstacle facing researchers in many research areas where a large-scale multi-national approach is now needed to tackle the key problems of the future (e.g. climate, ecosystem research). BASIN will seek to identify, with the aid of programme managers, appropriate and effective implementation mechanisms.

Why do we need a Basin scale approach?

One of the key issues facing the scientific community at present is to further our predictive understanding of the complex linkages between physics, chemistry, and biology and their importance for the functioning of marine ecosystems in order to understand, adapt to, and anticipate the effects of global change. Based on the importance of the North Atlantic basin for global climate and for exploited resources such as fisheries, it is timely and appropriate to conduct a review and develop a science plan focusing on the North Atlantic deep ocean and associated shelves and to examine:

- the effects of climatic processes on ecosystems and their feedbacks to climate,
- available observatories and time-series stations,
- status of basins-scale coupled physical/biological models, and
- existing infrastructure and data management.

Geographic domain: BASIN, as its name implies, focuses on the North Atlantic basin and associated shelf-seas. Throughout the development of BASIN it has been crucial to define the interests and needs of the programme and it has been agreed that the primary focus of BASIN should remain the sub-polar gyre system and associated shelf systems of the North Atlantic, whilst not neglecting important connections to the sub-tropical gyre.



Aim: At present the aim of BASIN is to understand and simulate the impact of climate variability and change on key species of plankton and fish, as well as community structure as a whole, of the North Atlantic and to examine the consequences for the cycling of carbon and nutrients in the ocean and thereby contribute to ocean management.

Links to management: Useful and relevant results for management are essential to the

success of the BASIN programme. BASIN has the potential to offer data, analysis and models that could be included in ecosystem management activities around the whole of the Atlantic basin in a fully integrated way. Explicit plans to coordinate the integration of basic science into management should be developed. One approach is for BASIN to form, from its inception, partnerships with the management agencies in North America and Europe (NOAA/NMFS, DFO, ICES, and DG FISH) to ensure that the science developed is relevant to needs of management.

Upcoming activities: BASIN is now moving into Phase 2 which seeks to identify an appropriate model for developing and funding a large scale international collaborative programme. The next BASIN workshop will be a meeting between the steering committee members and international funding and programme managers (US National Science Foundation; European Union and the Canadian National Science and Engineering Research Council) to discuss and develop a potential proposal and funding models. Thereafter a team of scientists from Europe and North America will collaborate to integrate the results of the science-based workshops with the input received from the programme managers and develop a Science Plan that presents a balanced research programme necessary to address the ambitious goals of BASIN.

For further information about BASIN see <http://www.globec.org/structure/multinational/basin/basin.htm>

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