

**GLOBEC FOCUS 1 WG Meeting**  
**October 23, 25-26 2004**  
**NMFS Laboratory, Honolulu, Hawaii**

Members: Juergen Alheit, Andy Bakun (23rd), Tim Baumgartner, Ken Drinkwater, Ian Perry (25th), Benjamin Planque, Takashige Sugimoto

**1. Report on Activities during the Intersessional Period**

a. Status of Previously Proposed Papers

Two manuscripts were envisioned at the last meeting in Qingdao.

The first was on *Problems in interpreting results from retrospective data analysis*. Possible examples to explore included Japan/East Sea winds, and Bay of Biscay upwelling, or Tim Baumgartner's paleo data. This was an action item for follow-up by Andy, Tim and Ian. Tim and Andy reported that the reward to effort ratio was viewed as being lower than for alternative scientific efforts and so it was decided not to proceed with the paper.

The second would be on *Potential utility of a multilateral comparative retrospective data analysis effort*. It was suggested that understanding of recruitment/environmental relationships was not progressing because of a sample size problem. Andy, Ken and Benjamin were to follow up on developing tests of hypothesis involving climate and fisheries recruitment data and identifying potential data sets and were to initiate the drafting of a proposal. Andy wrote on this subject in the report on the Honolulu meeting. Benjamin and Ken felt that a short note on the use of comparative retrospective analysis with examples of what can be achieved using multilateral comparative analysis could also prove useful. Fisheries Oceanography (FO) would be the natural journal in which to reach our target audience so Ian, who is an associate editor, will be contacted to determine if FO would consider publishing such a paper.  
*Follow-up:* Benjamin and Ken.

b. Klyashtorin paper

At Qingdao it was also decided to comment on the FAO published paper by Klyashtorin on forecasting fish abundance as it was felt that the paper was based on faulty assumptions. However due to other commitments this was not followed up. While a rebuttal to the paper is still considered worthwhile, further discussion did not resolve what the form of the paper should be or where to publish such a paper. Juergen felt that he would address the Klyashtorin paper in his paper that will be submitted as part of the upcoming Focus 1 Conference (see below).

c. Regional Workshops

At Qingdao it was suggested to continue the series of regional meetings. A *Japan Workshop on Small Pelagics* took place in December. It was a very successful meeting under leadership of Professor Sugimoto. (Series: Cape Town, Lima, Tokyo) and was reported in the GLOBEC Newsletter (April 2004). Long-term pre-industrial time series of sardine fishery fluctuations were presented and the idea arose that this

might form the basis for a useful joint paper with California sardine/anchovy paleo-sedimentary data as well as with the Bohüselen herring data. The lack of a mid-1970s signal in Japanese sardine was noted, which is the time of one of the major Pacific regime shifts. A group of Japanese scientists are working on retrospective studies of data and a synthesis of the work is expected in the near future.

*Iberian Peninsula:* A workshop was suggested to bring regional marine scientists working on the Iberian anchovy and sardines together to discuss and undertake joint analysis of their long-term data sets. The Chairman would like FOCUS 1 WG recommendation to submit to GLOBEC.

#### d. ICES Study Group on Regional Ecology of Small Pelagics

Several presentations showed dynamics (migrations, etc.) of small pelagics (herring, mackerel) that seemed to be linked with abundance. (Large migrations at large biomass; coastal behaviors at small biomass). Recommendation: ICES theme session in 2006 (Amsterdam). 1990s – Norwegian spring spawning herring now mainly in Iceland.

#### e. Papers from Lima Workshop

A late February meeting for producing a paper on the dynamic framework of small pelagic habitats (California versus Peru-Chile) will take place. IAI-EPCOR is funding zooplankton time series work proposed at Lima Workshop, also retrospective studies of hydrographic data, new coring studies, Pb<sub>210</sub> dating, and modeling of regime shifts. German and Mexican scientists have proposed new comparative retrospective studies of California and Peru-Chile systems. A meeting will take place at Guayaquil, May 2005, integrating the new initiative with what is already underway.

#### f. Article for PAGES Newsletter

GLOBEC investigations of interdecadal to multi-centennial fluctuations of marine fish populations.

#### g. IGBP IMBER Project

IMBER proposes to undertake retrospective analysis as part of its program. We will see paleo- retrospective studies in the anoxic zone of the Benguela.

## **2. “Dahlem-like” Conference**

Juergen reviewed the history of the FOCUS 1 WG’s efforts to conduct a major workshop on climate variability and marine ecosystems. Two proposals had been submitted in the past for funding, one in late 2001 to the Dahlem Committee for a meeting in Berlin and one in 2003 to Rockefeller Foundation for a meeting in Belagio, Italy. Both were initially well received but ultimately failed to be adopted. Intersessionally, the WG through email communication decided that a Dahlem-style Conference should proceed with or without funding. The Dahlem format is one in which background papers are submitted prior to the meeting on specified themes and

using these papers as a base, the meeting spends time discussing the themes. The outcome is in the form of a book that includes the background papers and papers based on the discussions from the meeting.

Ian reported that GLOBEC has presently more money to carry out its activities due to recent funding by NERC in the UK and this will mean that some funds should be available as seed money for the FOCUS 1 Conference and also for WG meetings. The SSC suggested that FOCUS 1 WG not meet in 2005, which would allow more money for the Dahlem-like Conference if it met in 2006. GLOBEC now requires more stringent reporting due to NERC rules, which means that the conveners of the Conference will be required to provide a title, location, names of the co-chairs, approximate number of participants, requested funding from GLOBEC and potential other funding sources, whether the meeting is open to all GLOBEC scientists or will be by invitation only, the goals of the meeting, the expected outcome, and expected publications (if any). This information must be sent to the IPO in time for SSC meeting in June. It was also agreed that Juergen, Ian and Ken would be the co-conveners.

*Follow-up:* The co-conveners, with input from the WG members, to put together the necessary information for the GLOBEC SSC.

The WG decided that the output of such a conference should be published in a serialized journal rather than in a book and Juergen suggested either Fisheries Oceanography (FO), Progress in Oceanography (PO) or Deep Sea Research (DSR) II. Ian said that PO has been very helpful in the past in publishing symposia with no cost. For FO, cost depends on whether it is a special issue (costs) or regular issue (no costs). Ian felt that FO was the most appropriate journal for such papers but as an associate editor, he was not in favor of FO special issues because it backs up the regular issues. However, he thought it was worth checking with the chief editor of FO, Dave Checkley, on his view.

*Follow up:* Juergen will contact Dave Checkley and Ian will contact DSR to find out the possibility of publishing within these journals and their conditions.

The WG also felt that the maximum number of participants should be between 24-32 and be divided into four groups, each with different themes to address. A spring meeting in 2006 was agreed upon. While several possible locations were suggested, Juergen felt that holding it in Hawaii in conjunction with the SSC and the PICES CCCC's Synthesis Meeting would cut down on the expenses as several potential participants would already have their way paid. The feeling was expressed, however, that this might make for too long a meeting and that the participants who were to attend all of the activities may not be able to give their all at our Conference due to being worn out mentally. It was suggested that we should have our meeting first before the PICES Conference and the SSC meeting.

*Follow-up:* Juergen will explore with the SSC the possibility of having our Conference first.

Much of the discussion during the meeting focused on the aims of the Conference, which focused upon the titles and background papers for the four conference working groups. There were several different suggestions proposed but the following represents the final version agreed to by the FOCUS 1 WG members, including possible lead and contributing authors.

Conference Title: *Climate Variability and Exploited Marine Ecosystems*

*WG1. Large space-time scale variability in marine ecosystems – Describing the patterns*

Background Papers:

1. Paleo and historical evidence for the variability of marine ecosystems prior to industrialized fishing. (Lead: T. Baumgartner; Contributing: J. Alheit, T. Sugimoto, J.M. Fromentin, B. Finney).
2. Evidence of synchronies in fish population fluctuations within and between ocean basins. (Lead: J. Alheit; Contributing: J. Hurrell, T. Baumgartner, F. Schwing, T. Sugimoto, K. Drinkwater, A. Bakun, etc.)
3. Global comparisons of zooplankton time series (Leads: D. Mackas and H. Verheye; with input from SCOR working group)

*WG2. Sensitivity of fish populations to climatic variability and human exploitation – Mechanisms creating the patterns.*

Background Papers:

1. How do fish populations respond to different modes of climate forcing (interannual, regime shifts, oscillations, trends (climate change))? (To find lead: K. Drinkwater with help from B. Planque; Contributing: K. Hanawa (Japan))
2. How does human exploitation alter fish population structure and dynamics (life-history traits, age-structure of its components, habitat)? (Lead: Ian Perry; Contributing: Simons Jennings (Lowestoft), Phillip Cury, etc.)
3. How does human exploitation alter fish population sensitivity to climate? (Lead: B. Planque)

*WG3. Sensitivity of marine ecosystems to climatic variability and human exploitation – Mechanisms creating the patterns.*

Background Papers:

1. How do marine ecosystems respond to different modes of climate forcing (interannual, regime shifts, oscillations, trends (climate change))? (Lead: A. Richardson; Contributing: N. Mantua, J. Polovina, G. Beaugrand)
2. How does human exploitation alter marine ecosystem structure and function (trophic levels, life-history traits, age-structure of its components, habitat)? (Lead: J. Jackson/ P. Cury?)
3. How does human exploitation alter marine ecosystem sensitivity to climate? (Lead: P. Cury)

The similarity in WGs 2 and 3 was on purpose, however WG2 is to focus on fish while WG3 will examine the entire ecosystem. The results and conclusions from the two groups will be compared.

*WG4. Incorporating climate forcing into the advisory process for marine resource management – Responding to the patterns*

1. How has climate information been incorporated into the advisory process and why has it not in many other cases? (Leads: A. MacCall and F. Koster/M. Barange)
2. Detection and forecast of ocean climate variations and their use in the advisory process for marine resource management.” (Leader: Bern Megrey?)
3. Beyond short-term advice for marine resource management: tools for managing under possible climate forcing but little forecasting capabilities. (Leader: ?)

Items that should be discussed within WG4 include new models for the advisory process that allow for spatial variability, linking natural scales of variability to management issues, what is needed for present advice on time scales from annual to 5 years, managing by age structure or spatial structure or on climate scales as opposed to the present system of simply preserving SSB.

A short paragraph on the aim for each background paper as well as what the expected discussion topics for each WG will be is required.

*Follow-up:* Juergen will draft these for WG1, Ken for WG2, Ian for WG3 and Benjamin for WG4. They will be circulated to all of the WG members who will provide their comments.

The selection of the chair and the rapporteur for each of the Conference WGs was seen as extremely important but no specific candidates were discussed. One of the duties of these WG chairs prior to the Conference will be to formulate a series of questions to address during the meeting based on discussions with the Conference WG members. It was strongly felt that the chairs and rapporteurs should not be those who wrote the background papers unless they were chairs or rapporteurs for a group different than the one for which the working paper was written.

*Follow-up:* Co-conveners will select the chairs and rapporteurs.

The IPO should have the opportunity to provide input into the list of authors and participants of the conference. Andy's input and his role in the conference also need to be sought (as he had to leave early).

*Follow-up:* Juergen

A letter to the lead authors, once chosen, will have to be drafted.

*Follow-up:* Juergen with help from Ian and Ken.

The co-conveners will need to keep in regular communication with the lead authors of the background papers to ensure that they are on target with their subject matter and will deliver the paper on time. The background papers should review the topic, criticize present approaches if needed, gaps in knowledge, and also outline what needs to be done in the future. The lead authors will have to provide an outline for the background papers. These outlines, possible discussion between authors and co-conveners, and the papers themselves could be provided on a website with restricted access prior to the Conference.

*Follow-up:* Juergen to contact the IPO to see if they would set up a website for the conference.

The following list of possible participants was suggested.

Atlantic: Planque (France), Bakun (US), Drinkwater (Norway), Alheit (Germany), Barange (IPO), Richardson (UK), Cury (France), Koster (Germany), Verheye (SA)  
Other possibilities: Werner (US), Murtugudde (US), Hurrell (US), Garcia (FAO), Scheffer (Netherlands), ACFM member, Jarre (Denmark)

Pacific: Sugimoto (Japan), Baumgartner (Mexico), Perry (Can), Jackson (US), MacCall (US), Mackas (Can), Megrey (US)  
Other possibilities: Lehodey (France), Miller (US), Schwing (US), Mantua (US), Lavaniegas (Mexico), Kishi (Japan), Zhang (Korea), Escribano (Chile)

*Follow-up:* All FOCUS 1 WG members to provide Juergen with other possible candidates.

The following tentative time schedule was agreed to.

Draft Paragraphs on WG and Background papers	Nov. 22/04
List of other Possible Participants to the Conference	Nov. 22/04
Comments to Juergen on the Draft Paragraphs	Nov. 29/04
Draft proposal by Juergen	Dec. 05/04
Comments to Juergen on Draft Proposal	Dec. 12/04
Final Proposal Completed	Dec. 31/04
Contact Lead Authors	Jan. 05
Establish Conference Website	Feb. 05

Confirm Lead Authors for Background Papers	Feb. 05
Outlines for Background Papers provided by Lead Authors	Mar. 05
Background Papers provided by Lead Authors	Jan. 31 06
Conference	April 06

### **3. Long-term planning for GLOBEC Integration and Synthesis**

Ken began the discussion by reviewing the original objectives of FOCUS 1. They were

1. Identifying, developing and evaluating (comparing) statistical methods for retrospective analyses.
2. Assembling, defining or generating new climate or ecosystem data sets
  - a. Includes paleo-records and data archaeology.
3. Applying time series and retrospective analyses in ways or areas where they have not been applied before.
4. Obtaining insights into ecosystems through the use of retrospective analyses.
5. Synthesis of GLOBEC retrospective analyses from regional and national programmes

It was suggested that a review of what has been done and possible activities between now and 2009 should be undertaken. Juergen felt that he would like to wait until after the 2006 Conference before planning such activities as he felt that there would likely be follow-up from the results of such a meeting.

### **4. EPCOR (Eastern Pacific Consortium for Research on Global Change)**

Tim reported on EPCOR, which tentatively ends in Dec. 2004 although he has asked for a no cost extension through to May 2005. The Inter-America Institute (IAI) under the Collaborative Research Network (CRN) program funds this project. EPCOR was designed along the GLOBEC framework and consisted of 3 main approaches: retrospective analysis, modelling and observing systems with emphasis on the eastern boundary currents of the Pacific. It was noted that this project paid for Tim and Andy to come to the present GLOBEC FOCUS 1 WG meeting. Building on their success, a new proposal has been submitted to IAI under the CRN to further fund EPCOR for another 5 years. The IAI is particularly interested in leveraging money and interacting with other groups. Their goal is to develop a sustained capacity for collaborative research and scientific development in support of policy development and informed decision-making within and among member nations. An announcement on the proposals submitted for IAI funding is expected by May or June 2005.

A second proposal has also been submitted on Impacts of Global Change on near shore and oceanic ecosystems along the western coast of the Americas.

### **5. SCOR WGs**

Ian reported that he and Dave Mackas applied to SCOR to establish a *WG on Zooplankton Time Series*, which was accepted unanimously. SCOR will support 10 members, GLOBEC 1, and PICES 1. Also, ICES may support 1 member and IAPSO may support 1 physical oceanographer. The purpose will be to compare long-term zooplankton time series around the world. If the US renews the GLOBEC work on the west coast, it would support 5 US members to this group. The chairs of Dave Mackas (Canada) and Han Verheye (South Africa) have been confirmed by SCOR. Tim suggested that EPCOR might support one member from South America if their funding is renewed. Membership of the WG has not been established yet but should hopefully be finalized by the end of the year following discussions between SCOR and the co-chairs. No meetings of the WG will be held until next year.

Tim stated that a new *SCOR Links WG* has been established that aims to explore the links between modern and paleo processes. Tim has been asked to be an associated member.

## **6. New Regional GLOBEC Studies**

### **a. CLIOTOP**

Juergen reported on CLIOTOP, which has its focus on tunas in the equatorial regions and is being lead by Patrick Lehodey and Olivier Maury. This initiative has had a lot of interest, has completed a draft of its science and implementation plan, and is believed to have been tentatively accepted by the SSC of GLOBEC as a new regional program. Focus 1 WG will support it where it can.

### **b. ESSAS (Ecosystem Studies of Subarctic Seas)**

Ken reported on the other new regional GLOBEC program, ESSAS, which will focus on comparative studies of sub-Arctic seas. This includes the Barents and Nordic Seas, the waters around Iceland and Greenland, the Labrador Shelf, Hudson Bay, the Gulf of St. Lawrence, the Bering Sea, the Sea of Okhotsk and the Oyashio System. There have been three planning workshops and a draft science and implementation plan was written that was accepted by the GLOBEC SSC. The program will depend upon national programs to carry out work on the regional seas while the main emphasis of ESSAS will to comparisons between the sub-Arctic seas. The work will be a combination of field, retrospective, laboratory and modelling studies. FOCUS 1 WG looks forward to working with ESSAS. Tim suggested that paleo records could provide valuable data for comparisons and specifically indicated that records from the fjords of Norway would be worth obtaining. The first major activity will be a GLOBEC Symposium on Climate Variability and Sub-Arctic Marine Ecosystems to be held in mid-May, 2005, in Victoria, Canada with co-conveners George Hunt and Ken. In addition, one-day workshops will be held prior to and following the Symposium to discuss the implementation plans for a Bering Sea Study (BEST) and ESSAS, respectively.