

Sunday 18 May 2003
GLOBEC International
F2WG

Present: R. Harris, D. Gifford, S. Poulet, S. Chiba, D. Mackas

Agenda:

Informal planning meeting
End by lunch time
Coffee 1100
Lunch 1300

1. Review the concept for the 2004 meeting of F2WG. Specifically, what will the outcome of the meeting be? Journal special issue? Review paper? GLOBEC Report?

Roger must report to GLOBEC SSC for their Banf meeting in June 2003 and get SSC approval for a 2004 meeting of F2WG.

Background: In Qingdao, F2WG agreed to organize a meeting in 2004 to review and compare process studies within the regional and national GLOBEC and GLOBEC-like programs. Identify gaps between what has been achieved and goals laid out in the GLOBEC International Implementation Plan. GLOBEC International Report No. 2 cites biological processes: feeding processes, experimental studies, sources of variation, trends, maximum growth rates etc. GLOBEC studies of physical/biological coupling are now common, but actual process studies appear to be heterogeneous among programs.

2. Brief review of national programs:

(a) The UK GLOBEC programme was reviewed by Roger Harris: Marine Productivity (NERC). The program includes related programs in the Southern Ocean (BAS) and CPR Survey (SAHFOS), other GLOBEC-relevant projects located at universities, NERC centers and fisheries labs. In Marine productivity, the focus is basin –scale structure and coupled biological and physical processes, mainly in an open ocean environment, but with some consideration of the influence of the open-ocean processes on shelf and shelf-seas regions. The overarching concept is physical control of ecosystem dynamics. Here, “ecosystem” includes nutrients, bacteria, phytoplankton, microzooplankton, mesozooplankton, and higher order predators. Target species are *Calanus finmarchicus*, *C. helgolandicus* and *Megnyctiphanes norvegica*. Studies emphasize seasonal reproduction and life history responses to climate forcing. The program’s specific locale is the Norwegian Sea, but export of *Calanus* spp. to shelf seas, where food chains tend to depend on *Calanus*, is considered. There are 26 projects funded for a total of approximately \$9 Million over 5 years. Four major research cruises have been mounted, focusing on the dual science priorities of winter distributions and spring survival of target

species. The key factor in success of egg production is the coincidence of early naupliar stages with the spring bloom.

(b) JAPAN GLOBEC was reviewed by Sanae Chiba. The target species in this program are anchovy and *Neoclanus* spp. The study locale is the Kuroshio Current, whose northern and southern regions support very different ecosystems. Studies are grounded the needs of fishery management, with the major goal of predicting fish catches.

(c) FRANCE GLOBEC was reviewed by Serge Poulet. The program centers on small pelagic fish in the Gulf of Biscay, and included benthic as well as pelagic components. However, in Serge's opinion, to date there has been little linkage between the benthic and pelagic studies. IFREMER is the primary organization leading French GLOBEC research. Key scientists are Claude Roy (a member of F2WG) and François Carlotti.

(d) The US-GLOBEC program was reviewed by Dian Gifford. There are three major US-GLOBEC sub-programs: the Northwest Atlantic program on Georges Bank, the California Current System program on the Oregon shelf and the coastal Gulf of Alaska, and the Southern Ocean program. The Georges Bank program is located in an environment characterized by wind-forcing and tidal mixing. The locale California Current System program is highly advective. The Southern Ocean program...??? All 3 programs address issues of the influence of climate variability on target organisms. All programs include retrospective studies, a broad-scale survey component, biological-physical process studies, and synthesis studies. On Georges Bank, the target species are *Calanus finmarchicus* and *Pseudocalanus* spp., larval cod and larval haddock. IN the California Current system, target species are copepods and salmon. In the Antarctic program, the target species are euphausiid krill. The Georges Bank program mounted 6 years of research cruises (1994-1999) organized into 3 "phases". Phase 1 examined the relationship between stratification processes and recruitment of target organisms. Phase 2 focused on processes of source, retention and loss of target organisms, and Phase 3 examined cross-frontal processes. The Georges Bank program is now in it's 4th, Synthesis, Phase. The California Current System program is currently concluding field studies. The Antarctic program...???

(e) The Canada GLOBEC program was reviewed by Dave Mackas. The formal program is over and is currently in publication mode. The program focused oon decadal time scales and was linked strongly to two of the US programs on the east and west coasts of North America. Because of its strong ties to PICES and CCCC, Canada GLOBEC was more fish-oriented than many of the other GLOBEC programs. Overall, the program compared zooplankton production, biomass, distributions, and community structure in different parts of the North Pacific. Specific studies included small pelagic fish in boundary current regions, salmon in boundary currents and the open sea, and pollock and marine mammals in the Bering Sea. Process studies considered exchanges between oceanic regions and continental margins and the role of mesopelagic organisms in micronekton ecology.

3. F2WG meeting in 2004:

The present F2WG membership is: Bamstedt, Bathmann, Chiba, Gifford, Gowen, Harris (Chair), Kleppel, Mackas, Poulet, Roy, Sabatini, St. John, Sun. N=13

It was suggested that up to 7 more participants be invited to attend the F2WG meeting. Rationale: this is a good size for generating scientific excitement, and not too large to be unmanageable. It was agreed that the WG meeting should not be co-located with another meeting, as this would possibly dilute energy and effort. The invitees would be carefully selected for expertise. Several potential invitees were suggested: Drinkwater/Sameoto re ecosystem changes-might need funding, Mike Heath, Hans Verhaye (South African)-needs funding. Regarding travel funding for invitees: it was suggested that some of the national programs might contribute.

The goal of the F2WG meeting in 2004 is produce a GLOBEC report (at a minimum) and hopefully produce something more meaningful and synthetic, such as a review paper or set of papers.

Examples of possible scientific themes to be explored include: (1) On-off shelf issues; and (2) Micronekton: not really a GLOBEC topic to date.

It was agreed that the present F2WG members would work up summaries of a number of individual topics well in advance of the 2004 meeting (Table 1).

Because Gary Kleppel has not attended the last two F2WG meetings, Roger agreed to inquire of Gary whether he wishes to continue in the group. Several suggestions were made to replace Gary with someone having expertise in zooplankton mortality processes and/or comparative life history analysis.

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| Ulf Bamstedt | Pelagic predators on zooplankton |
| Uli Bathmann | Key species, with Mike St. John |
| Sanae Chiba | Decadal-scale changes in processes and signals; plankton focus |
| Gary Kleppel | ??? |
| Richard Gowen | Richard: phytoplankton processes, with Dian Gifford |
| Dian Gifford | Microzooplankton and lower trophic levels, with Suzanne Strom, David Montagnes and Evelyn Lessard . |
| Roger Harris | Zooplankton feeding and nutrition; with Ulf Bamstedt, Serge Poulet, Dave Mackas and Dian Gifford |

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| Dave Mackas | Large-scale currents and zooplankton in patchiness context. |
| Marina Sabatini | Reproduction and growth (with Serge Poulet and Song Sun) |
| Song Sun | Reproduction and growth (with Serge Poulet) |
| Mike St. John | Key species with Uli Bathmann; plankton/larval fish link-including biochemical tracers and phys/biol coupling |
| Serge Poulet | Reproduction and growth with Roger Harris, Marina Sabatini and Song Sun |
| Claude Roy | Physical/biological coupling |

The location and dates of the 2004 F2WG meeting were discussed. It was agreed that early June 2004 is a reasonable target for a 3-4 day meeting. Two locations were suggested: Vancouver Island (??name of meeting center) and Rhode Island, USA. Some preference was given to Rhode Island. Dian Gifford agreed to investigate costs of meeting at the University of Rhode Island's Alton Jones Conference Center.