U. S. GLOBEC Standing Committee for Synthesis (SCS)
Meeting Minutes

Doubletree Hotel
New Orleans, LA
6-7 November 2008

Thursday, 06 November 2008

The meeting was called to order at 0907 CST.

SCS members and *ex officio* members in attendance: Chairperson Dale Haidvogel (Rutgers), Eileen Hofmann (ODU), Dennis McGillicuddy (WHOI), Art Miller (Scripps), David Mountain, Elizabeth North (UMCES), Zack Powell (UC Berkeley), Ken Rose (LSU), John Steele (WHOI), and Francisco Werner (Rutgers)

Guests in attendance: Enrique Curchitser (Rutgers), Linda Lagle (Rutgers), David Robertson (Rutgers), and Cynthia Suchman (NSF)

Participants via Web-ex and/or conference call: Hal Batchelder (OSU), Nick Bond (UW), Charles Greene (Cornell) and Elizabeth Turner (NOAA).

Not in attendance: Michael Alexander (NOAA), Cabell Davis (WHOI), Jon Hare (NOAA), Michael Fogarty (NOAA), and Phil Taylor (NSF)

The minutes from the previous SCS Meeting in Portland, ME were approved.

Intercessional activities

Activities since the last SCS meeting were reviewed. These included:

- recent updates and changes to the web site (Haidvogel)
- Beth Turner's piece published in the International GLOBEC Newsletter (vol. 14, issue 2).
- progress on connections with NCAR (Curchitser): A team of GLOBEC and NCAR scientists has recently embedded a regional ocean model (ROMS) into NCAR's Community Climate System Model (CCSM). This initiated a discussion of future possibilities, including being able to do down-scaled climate projections with ecosystems.
- NCAR Advanced Study Program proposal (Powell): the proposal would support a workshop at NCAR for young scientists on the topic of "Marine Ecosystems and Climate. The proposed organizers would include Zack, Dale, Mike Alexander (NOAA), Jim Hurrell (NCAR), Keith Lindsay (NCAR CGD) and Joan Kleypas (NCAR ISSE).
- David Mountain presented a talk on US GLOBEC at the annual CLIVAR Summit. in summer 2008. As a result of the talk it was decided at the Summit to propose for CLIVAR to sponsor a workshop bringing together CLIVAR and GLOBEC investigators to consider

the possibility of joining the climate forecasting ability of CLIVAR with the ecosystem modeling capabilities of GLOBEC. (N.B. - a proposal was submitted to the CLIVAR office, but no action has been taken).

Agency reports

Beth Turner reviewed the situation at NOAA. The 2008 increments promised to PIs did go out. There will be a final summary report in the Federal Register within the next few months. At the meeting it was suggested that the report be the basis for an article in Oceanography.

Cynthia Suchman gave an update on NSF that included PRSW, CAMEO, and the U.S. GLOBEC final symposium proposal.

+ The list of funded projects for PRSW is on the NSF website and the U.S. GLOBEC website. This list does not include any workshops funded and handled through the GLOBEC National Office, such as the one from Charles Greene. The projects include 35 academics and others, 12 non-Federal co-PIs, 17 named participants (Not PIs or co-PIs) 24 international individuals, 4 Federal PIs, and 11 other Federal employees.
+ The NSF panel met and NSF is negotiating with NOAA on recommending awards for CAMEO proposals. 49 proposals were received.
+ There was no end-of-year money as hoped for the GLOBEC Final Symposium proposal. Phil Taylor would like to see it with more international involvement and Cynthia has a question on how to reach the broader policy community. Nominal timeframe for the symposium is spring 2011.

Regional Program Updates

NorthWest Atlantic / Georges Bank Program

Enrique presented the NWA report on behalf of Cabell Davis who could not attend. The presentation included summary slides representing the five main projects within the NWA program. An overview schematic of the NWA program was shown first. The subsequent summary slides were created based on presentations given by each project during the NWA program summer 2008 SI workshop and are available at: http://globec.whoi.edu/globec-dir/phase4doc/simeeting2008/agenda.html.

The Davis et al project was presented first, leading off with a slide showing the conceptual model used. This project is examining surface freshening (from melting Arctic) and deep nutrient input (NAO-dependent SW influx) on NPZD-copepod dynamics. They hypothesize that the surface freshening causes an early phytoplankton bloom and larger copepod populations, while the influx of N-poor deep Labrador Slope Water, reduces system production. Further freshening from global warming is likely to severely retard vertical mixing and reduce nutrient input to surface waters and reduce production. These hypothesized climate impacts are bottom up effects. A simpler schematic showed that they are examining the impact of local and remote forcing on water column stability, circulation, and nutrient supply and the effect on phytoplankton and copepod species populations. The model framework shown next included full 3-D coupling of biology and physics using an FVCOM-based physical model, a simple food web model (NPZD, Ji et al., 2008, JMS), and a mean-age copepod species model, (Hu et al., 2007, MEPS, Ji et al. 2009, MEPS). The physical model had accurate currents and temperature, and inaccuracies in salinity were improved by including better river discharge data. The GLOBEC-funded FVCOM model has been transitioned into the Northeast Coastal Ocean Forecast System (NECOFS). NECOFS is now in operation 24/7 for forecast application. The FVCOM has been extended to cover the Arctic Ocean in preparation for Pan-Regional GLOBEC projects. A new

version of the model has been developed that allows study of detailed non-hydrostatic dynamics in the Gulf of Maine. The coupled model output then was shown. The bi-monthly climatology for Pseudocalanus from MARMAP/ECOMON (1977-2006) was compared with the bi-monthly distributions of Pseudocalanus generated by the model for the baseline run (1999 forcing). The seasonal development of spatial distributions are very similar between model and data in the high abundance in shoaler regions and peak abundance in summer months. The model results were also shown for Centropages hamatus, revealing that bottom resting eggs are needed to generate the observed well-defined adult abundance patterns in the bank crest. Future work includes: 1)assessment of bottom-up vs. top-down control, 2) linking the model to larger domain for pan-regional modeling efforts, and 3) using the model to examine zooplankton sampling strategies using OSSEs.

A slide was presented for the Runge et al project showing an impressive 4-year time-series of zooplankton species composition in the GoM. They analyzed zooplankton net tow data from a western GoM time series. The relative abundance of Calanus finmarchicus declined in 2004-2005. They are exploring the relationship of these changes with hydrography and chlorophyll patterns. Runge et al. also coauthored a paper showing a relationship between copepod production and fish recruitment. Castonguay et al. 2008 Can. J. Fish. Aq. Sci., 65, 1528.

A slide was presented for the Gangopadhyay et al project. They have developed 3D physical fields from 2D ROMs plus vertical FORMS model to simulate the NWA Atlantic. Batchelder has made progress on the Calanus IBM. Specifically, they have adapted a Lagrangian particle-racking model (PTM) to the North Atlantic ROMS model fields and simulated dispersion of particles seeded in the Flemish Pass at depths of 10m to1100m, without vertical advection, diffusion, or behavior. Simulations were run in both the low NAO and high NAO ROMS fields. They are currently testing vertical advection, diffusion (random-walk), and backward-tracking modules of the PTM. They presented preliminary results in a poster titled "Potential transport of the copepod, Calanus finarchicus, in the Labrador Sea and Scotian shelf regions during diapause." at June 2008 ASLO meeting in St. John's, NL.

The final slide showed that Bob Groman et al have developed a nice interface for accessing GLOBEC and MARMAP/ECOMON data through the BCO-DMO website. They now have a GUI that enables quick data access and also have implemented a map server interface. See Groman's ppt from the summer 2008 NWA SI workshop:
http://globec.whoi.edu/globec-dir/phase4doc/simeeting2008/talks/groman_bob.html

At the SCS meeting, Greene talked about his NWA Program project on tracking sources of salinity water in the 1990s. Green and Pershing held a second CAFÉ workshop in Maine in October 2008 to examine the origin of the salinity anomalies resulting from Arctic melt water. They tracked the 1991 anomaly up to the Arctic and they are now working with those modeling the atmosphere in the Arctic, stating that they are seeing a decadal oscillation manifesting itself. They are finding that Arctic climate impacts on freshwater export to the North Atlantic. The Arctic Oscillation appears to determine whether Beaufort Gyre stores freshwater or releases it. Arctic Dipole Anomaly appears to determine the form of freshwater export (liquid or ice) and route (Canadian Archipelago or Fram Strait).

NorthEast Pacific Program

Hal Batchelder updated the group on recent activities for NEP. The current focus is on two major items. These include: 1) the DSR-II NEP Special issue and 2) the NEP Synthesis Book.

The special issue will include 12 papers and a preface. The majority of the papers submitted are from the CGOA program. The deadline for submission to the editor-in-chief is 3 December 2008. The 12 papers are evenly divided among the following areas: physics and eddies; nutrients, phytoplankton and lower trophic level (one of these papers is not GLOBEC funded as it is from a Canadian); and copepods and salmon.

Hal reported that the initial structure of an NEP book was discussed in January 2007 but received a lukewarm reception. The idea has been revisited since then and the NEP Executive committee now will serve as the editing committee. The book will include three major themes, each with an individual theme editor. The theme editors are: Nick Bond, Bill Peterson, and Ed Casillas. The themes are: 1) Climate Impacts; 2) Ecosystem Structure and Function; and 3) Management Issues and Implications, Discussions and Conclusions. There will be an editorial group meeting during the Open Science Meeting in June 2009. The goal is to have the book completed but not published in time for the U.S. GLOBEC final symposium in 2011.

Science Talk

Denise Reed was the guest speaker for the after-lunch Science Talk. She spoke about coastal issues with an emphasis on Louisiana trends and the consequences of land loss. This issue of land loss was brought home, as she said, in 2005 with hurricanes Katrina and Rita. Louisiana showed losses similar to those that have happened in the San Francisco Bay over the years.

She briefed the committee on some coastal history and told them that as recently as 2004 the coastal restoration goals were very general. However, by 2008 there was more concern about species conservation and as a result the goals were more "specific and pointed." She went on to say how a new approach to management of the river (Mississippi) is needed for the 21st century. Social scientists, economists and engineers need to coordinate their thinking and not think separately. Scientists need to help people think in terms of "adaptive management." She stated that conceptual models are one critical aspect of coordination.

Regional Program Updates (cont'd)

Southern Ocean Program (SO)

Eileen Hofmann presented several slides during her presentation that included updates on the Southern Ocean (SO) program, information on the status of Integrating Climate and Ecosystem Dynamics (ICED), and an overview of current and future activities.

Bringing the SCS up-to-date, Eileen said that there are now two special issues of DSR that are published with a third in development with possible availability the end of 2009. In addition, the SO program is now working with a ROMS-based model for Marguerite Bay and moving toward a ROMS-based model for East Antarctica and the Ross Sea. Finally, they are examining the biological hotspots in Pan-Regional Synthesis projects that will look at flow characteristics and at developing food webs.

Within ICED they are now looking at a circumpolar, interdisciplinary approach to understanding climate interactions in the SO and implications for ecosystem function and feedback to biochemical cycles. This approach had its origins in the SO program. The challenge will be to combine the ecosystem and biochemical communities. The science and implementation plan for ICED was approved by IMBER and GLOBEC and should be published late in 2008. Eileen and Eugene Murphy (who is setting up the program office) have submitted suggestions for SSC members.

In other areas, Eileen reported that there was a food web workshop held in April 2008 with papers now being developed around this theme. In May 2009 there will be a joint session of GLOBEC/IMBER/ESSAS, and in July there is a session in Russia for which more than 100 abstracts were submitted. They received funding from the Ocean Carbon Biogeochemical program to hold a SO biogeochemical modeling workshop that could take place in May 2009 in Williamsburg, VA.

Future projects include: a joint workshop with ESSAS in June 2009 in Victoria, BC; a krill workshop is being developed; planning is in process for an Ocean Carbon and Biochemistry (OCB) and SO workshop in May 2009 and a proposal was submitted for a session at the IPY Congress in Norway in 2010. Some funds for the workshops in June2009 in BC came from Roberta Marinelli in the Office of Polar Programs at NSF.

Other Regional Activities

David Mountain updated the SCS on education and outreach issues. It was thought originally that he would be able to work with COSEE. However, after discussions it became clear that such a program would require a dedicated effort and substantial funds from GLOBEC. Another approach may be individual collaborations of opportunity by GLOBEC individuals and that they can contact the NSF education person about this. If there is a well presented proposal to NSF this might be possible.

He also discussed the NMFS approach to EBM. This, too, is uncertain because, like working with COSEE, this would also require funding. This would incorporate collaboration with the NMFS FATE (Fisheries and the Environment) program. Ned Sears and Kenric Osgood are the program managers. There was a general discussion about the value of meeting with Ned and Kenric at PRSW3 but again, due to travel funds, this was not a strong possibility.

There was a brief discussion about particle tracking and project ideas within an education and outreach context as well as EBM and public facilities in this context.

Model Evaluation Project

Enrique introduced this topic with a few comments and then opened things up for discussions. In the opening comments, he stated that the idea of a model evaluation project sounds good but it isn't clear how useful this would be. At present, there aren't enough models in each region to be worth the effort. Very few biological models are used and obtaining a meaningful sample would be difficult. Also, there are a variety of model types with different approaches, etc. Models seem to be developed and tuned to particular regions or species.

It was noted that an ICES-like "Manual of Recommended Practices" can be developed around such issues as spring bloom, species composition, biogeography shifts, behavior vertical

migration, and transport. With this approach, model evaluation is implicit but less formal than a model-inter-comparison project.

A general discussion began by considering model evaluation within the JGOFS context. There were two items of note: 1) The JGOFS focus was on particular data sets, and 2) parameter optimization is a necessary component of model inter-comparison that, at some level, will need to be met within the context of any GLOBEC model evaluations. It was noted that the JGOFS program did little on zooplankton and that if GLOBEC were to do this the focus should be on zooplankton, perhaps with links to higher trophic levels.

Another suggestion was that it might be worth considering putting together courses in the future on GLOBEC-type models with an emphasis on field techniques such as BIO-mapper tagging in the SO. It was felt this would pass down to future oceanographers. Subsequent discussion focused on how and why GLOBEC wants to do this and what the models should or shouldn't have. Others asked what the modelers could tell the ecologists in order for them to take a more ecological approach.

NOAA Seminar Series

Upon returning from break, Beth Turner updated the SCS on the NOAA Seminar Series. She put a request for her office to support this, but needs to wait for the new president's budget. In spite of that, she is moving ahead with discussions about cost-sharing the series with U.S. GLOBEC and NMFS.

There could be 12 topics covered, with 13 speakers and subjects. The individuals supported through the GLOBEC office will be Dale Haidvogel, Enrique Curchitser, and Charles Greene. NMFS will support NMFS speakers and others will be supported through the NOAA Silver Springs office. She should know by March or April 2009 if she can support travel. The original ideas was to have a dedicated seminar series at NOAA but there was some thought that the speakers could piggyback with a session a NSF. It was also thought that some of the venues could be available to some of the people on the hill.

Other ideas presented would be to add Zack as a presenter or co-presenter with Enrique on regional climate modeling and the implications in specific regions. Another idea was to bundle this series together as a seminar/reading series for educational programs.

It was also noted that the tapes of the seminar series could be used as a base for the documentary Elizabeth is planning. In addition to using some of the tapes there will be follow-up interviews with the scientists. It was also noted that these tapes could be turned into flash presentations for the web.

US GLOBEC documentary

Elizabeth North next presented an overview of the documentary project. The piece will include footage of researchers, ocean creatures and they will create graphics and interview scientists. The basic outline will be to cover the four regions in a way to leave "room for the shiny rocks." The idea is to tell the story in a cohesive manner that will reach a public audience. Working title is "the Pulse of the Ocean."

Planning grant activities would include the following:

Tape NOAA Seminar series in DC

Conduct preliminary interviews at seminar and perhaps at PRSW
Work to clarify concepts
Find images/other footage
Develop partnerships for broadcasting the piece
Already contacting an individual to help with contacts at Oregon PBS
Solidify partnerships for computer graphics
Develop evaluation plan

Elizabeth believes that one of the keys to telling the story is to have animations of the water mass in order to show how it flows and ties things from one region to another. There was a broad discussion as she presented some of the questions that she and documentary producer/director Michael Fincham reviewed such as: What is the story? What are the big ideas that should be communicated? Who to interview and how to link the regions? Fincham will determine which scientists will remain in the final footage. Others offered additional ideas for input or background footage such as material from the National Geographic reporter who participated in a GLOBEC SO cruise. There is a lot of video available from all cruises. However, each region has only about ten minutes to fill.

Museums and Aquaria

Art Miller and Dale Haidvogel next updated the committee on the status of the GLOBEC traveling exhibition idea. Art told the group the Nigella Hilgarth at Scripps, director of the Birch Aquarium, mentioned that Scripps will be doing an exhibit on CCS and that GLOBEC could contribute to it. This might mean there is no credit or by-line as he understands it. This exhibit is to be developed over the next year. He will pursue this further and ask about the opportunities for GLOBEC to be prominent within such an exhibit. Elizabeth added that she will be collecting a film database over the next year or so and will have an intern from American University film school so may be able to provide some material.

Dale made a trip to UNC to learn about their new nature research center (80,000 square feet) that will be in downtown Raleigh, NC. The inauguration of the facility is about three years in the future. They are interested in partnering with GLOBEC and having us within their new center. Dale will set up exchanges with them over the course of the next year and will try to define where GLOBEC and the museum interests meet. One thought is to create a kiosk that could travel around the country as they exchanged exhibits.

Third Pan-Regional Synthesis Workshop

Following these updates was a discussion of the next synthesis workshop: PRSW3 to be held in Boulder on 17-20 February 2009. Members exchanged ideas on how to structure the agenda and maximize the workshop program as it needs to be more than the sum "parts of funded projects." Individual projects were compared for commonalities. It was felt that there are several common threads to allow substantial but different project groupings. The ideal would be to inspire extra collaborative efforts through a program that creates synergy. This discussion ensued until it was time for the meeting to be adjourned.

The meeting was adjourned at 5:15 p.m.

U.S. GLOBEC Standing Committee for Synthesis (SCS)
Meeting Minutes

Doubletree Hotel
New Orleans, LA
6-7 November 2008

Friday, 07 November 2008

The meeting was called to order at 0900 CST.

SCS members and *ex officio* members in attendance included: Chairperson Dale Haidvogel (Rutgers), Dennis McGillicuddy (WHOI), Art Miller (Scripps), David Mountain (NOAA), Elizabeth North (UMCES), Zack Powell (UC Berkeley), Ken Rose (LSU), John Steele (WHOI) and Cisco Werner (Rutgers).

Guests in attendance were: Enrique Curchitser (Rutgers), Linda Lagle (Rutgers), David Robertson (Rutgers), and Cynthia Suchman (NSF).

Participants via conference call included: Hal Batchelder (OSU), Nick Bond (UW), Charles Greene (Cornell) and Elizabeth Turner (NOAA).

Not in attendance: Michael Alexander (NOAA), Cabell Davis (WHOI), Michael Fogarty (NOAA), Jon Hare (NOAA), Eileen Hofmann (ODU), and Phil Taylor (NSF).

US GLOBEC-supported Workshops

Leading off the day's agenda was a Web-ex presentation by Chuck Greene on a series of workshops focused on regime shifts. Using a series of slides, Chuck walked the SCS committee through various approaches to an improved understanding of climate forcing on Northwest Atlantic and Northeast Pacific shelf ecosystems. This will be achieved by increasing the interactions between GLOBEC scientists conducting retrospective studies conducting modeling studies.. A fundamental goal is to be able to predict the regional impacts of anthropogenic climate change on these ecosystems in the future. Key events will include:

- Autumn 2009 – First PR Working Group meeting at Shoals Marine Lab's Creek Farm Estates in Portsmouth
- Summer's end 2010: A pan-regional symposium at Friday Harbor Lab with 35-50 participants. (NSF money will support 35). At this time they will review evidence of ecosystem regime shifts, review alternative hypotheses (top-down and bottom-up), and they will form team of co-authors.
- Spring 2011 will feature the Second PR Working Group meeting. Manuscripts will be reviewed and discussed.

Dale and the GLOBEC SCS will consult with Chuck in regard to participants for these workshops. Chuck will submit names for review by the SCS. The actual working group should remain at about 15 members. It was anticipated that some of those likely to be selected for this

working group would already be attending the third U.S. GLOBEC Pan Regional Synthesis Workshop being held at NCAR in February 2009.

In other discussion, Chuck told the committee he had contacted the editor of *Oceanography* about the feasibility of publishing books online to make them more accessible. He thought this could be a good approach for the NEP program book. GLOBEC would have to come up with the funds, but it is less than traditional paper publishing. He stated that is could be $30,000 vs. the usual $65,000. Most of the cost would go to editing as the online books need to be graphic-intensive.

US GLOBEC milestones

Beth Turner next talked to the committee, also via Web-ex and conference phone, about the GLOBEC Milestones and how to portray them in graphical form. Her slides illustrated what she had done. She told the committee that she tried to put a lot on a one-time axis. She used archives on the web and current information in the web for the start and end dates of projects. Other areas touched upon and presented in a visual manner included:

Special issues and reports
A number tally of the data
Days at sea – added up to more than the days in a year due to multiple cruises
Number of PIs supported each year

Beth found that data for 1993 -94 was lacking. Zack said he would check and confer with Hal on that. It was also determined that there needs to be some documentation of graduate students and post-docs.. There was discussion about the idea of posting a query on the GLOBEC web site in regard to gathering information on graduates students, post-docs, etc. It was suggested that a form be created for PIs to fill out on the web.

Synthesis results (John Steele)

Following Beth's report, John Steele talked to the committee about rebuilding fish stocks and about some of the changes that have taken place in the Georges Bank food web.

He noted that marked changes in the food web can occur without much of an increase or decrease in total fish production. One example is switching in the food web from benthos to mesoplankton production. There can be argument about what has caused the change. One possible explanation is the effect of severe trawling and of dredging

John's slides had five points.

1. external physical forcing of nutrients may reduce fish production by a factor of 2
2. there appears to be a switch from benthos to plankton production from 1960's to the present
3. an increase in other piscivores than cod
4. no evidence of an empty niche
5. historically the changes are cumulative

International GLOBEC Open Science Meeting

Following additional discussions abut John's findings, Cisco Werner gave an update on the upcoming International Open Science Meeting to be held in Victoria BC. 22-26 June 2009. The theme for the meeting is "Marine ecosystems: from function to prediction." The structure will follow a PICES type meeting. He talked about the schedule which included an opening ceremony, invited speakers for three days of presentations as well as some poster sessions. John Steele will give the closing remarks at the meeting. The element of transition from GLOBEC to IMBER is implied in the meetings workshops and agenda. There will be a legacy book to be published by Oxford University Press. In closing, Cisco stated that the program ends officially in December 2009 and that the IPO closes in March 2010.

US GLOBEC Final Symposium

The next topic of discussion was the proposal for the U.S. GLOBEC final symposium that was submitted to NSF as Phil Taylor had requested it prior to the end of FY 2008. Dale told the committee that it was expected that there would be available some end of year money at NSF but that wasn't the case. NSF will hold on to the proposal. Nominal time frame for the symposium is spring 2011.

Cynthia Suchman spoke about some of the concerns at NSF. Phil had wanted to know why the symposium wasn't in association with a larger meeting. The response was that the SCS viewed it as important to be accessible to policymakers, thus the desire to have it in DC. Cynthia will help the SCS and provide ideas on how to engage those on the Hill. She will also direct GLOBEC members to others for advice on this.

The SCS revisited the suggested time for the final symposium with some feeling 2011 was too late. Some wanted fall 2010. That was countered with the fact that fall already has major ICES/PICES meeting within a month of each other. It also was noted that October is a tough month for any in government to travel. In general, spring 2011 is better due to access to funds

Dale is to revisit the chronology of activities for the final session. He suggested that any advertising begin in earnest at least one year in advance. He anticipates that some organizing can be accomplished without the hoped-for funds at present. He also will talk with Phil about more international involvement.

In general, questions of balance and integration of U.S. and international programs and speakers will fall to the program committee for the event. Other free-ranging discussion ensued, resulting in some action items related to the symposium.

1) Preferred time is spring 2011
2) Dale to discuss the international component with Phil
3) Dale to follow up with Cynthia on program elements most attractive to Congressional staffers
4) Dale to update timeline
5) Dale will set up a scientific program committee
6) Hal to inform Dale of the dates and location of PICES 2010

Third Pan-Regional Synthesis Workshop, revisited

The next item on the agenda was the third Pan-Regional Synthesis Workshop coming up in February 2009 in Boulder.

There will be an effort to include SO representatives in order to facilitate a more active and inclusive approach at PRSW3. The concern was that the mass of effort was in the Northern hemisphere and that SO and thus some international viewpoints might be excluded. Chuck Greene suggested that his workshops could be a way to include SO. It was also suggested that Ken Denman be invited again to this workshop as he was unable to make the previous session due to weather.

In general, the upcoming workshop is different from the previous two. This one should speak to what GLOBEC wants to accomplish and how to organize in order to do so. Proposed schedule is to open on the Tuesday with a plenary session and reception followed by two days devoted to specific programming. The session will wrap up on Friday morning.

The concept is to have as many of the funded PIs as possible. Co-PIs should also be there. NOAA participants can be funded by GLOBEC if they use their vacation time. The GLOBEC National Office is also committed to support some individuals from the GLOBEC SO program.

It was proposed that there be short remarks from each of the funded project PIs or their representatives. The ensuing activities should build bridges among the various projects. It was suggested that some NCAR scientist also be involved and that someone from GFDL be invited. All participants are to receive the project abstracts in advance of the workshop and perhaps answer specific question in advance such as what data sets used, what models used, and what groups are they collaborating with on the project. Another suggestion was to allow time for groups to work on their projects.

Discussion ensued until a general approach was agreed upon.

- Tuesday day to have space available for groups to meet
- Tuesday night to open with plenary and reception
- Wednesday to include a review of projects, goal setting, and topics for break-outs
- Thursday will be devoted to working groups and reports from these groups
- Friday will wrap things up and allow time for individual project groups to meet

Dale will draft a plan based on this schedule for review by the committee.

Before the SCS meeting was adjourned, the next meeting's date and preferred timeframe were proposed. The next meeting will be in the fall, preferably within the first half of October in Tucson, AZ. Linda will email the full SCS committee for a consensus of specific dates within that time frame.

One last item: Hal reported that ICES will meet in France in 2010.

The meeting was adjourned at 1:40 PM.