

Getting to the “FUTURE”

by John E. Stein

The PICES Study Group on *Future Integrative Scientific Program(s)* (SG-FISP) has established a work plan to develop a new science program that will replace the PICES-GLOBEC Climate Change and Carrying Capacity (CCCC) Program. The Writing Team of SG-FISP was formed following PICES XV, and held its first 2-day meeting on February 16–17, 2007, in Seattle (U.S.A.), followed by a 3-day FISP workshop from April 16–18, 2007, in Yokohama (Japan), in conjunction with a 5th inter-sessional joint meeting of the PICES Science Board and Governing Council.

The first step to develop the key questions that will be the foundation of the new science program named FUTURE (**F**orecasting and **U**nderstanding, **T**rends, **U**ncertainty and **R**esponses of **E**cosystems) was taken in Seattle. All participants presented their views on the major topics of concern, along with accompanying key questions that might be considered for FUTURE. An approach to classifying and evaluating the proposed questions was established, guided by principles shown in the box below. Once the list was complete, each member of the Writing Team was assigned a key question and asked to write a short description about the motivation for the question, and the benefits that might arise to PICES member countries by answering the question. This provided additional details to assist in prioritizing the candidate questions and to develop adequate justification for including the questions in the Science Plan. The principles helped us to identify important relevant questions without generating a long list.

PRINCIPLES

The new PICES science program should:

- be SCIENCE-focussed;
- be POLICY RELEVANT, but not tied to detailed management questions, and be broader than just resource management;
- build on the BEST of PICES’ past 10 years;
- INTEGRATE expertise across disciplines and countries;
- be NEW – not more of the same with a different name;
- be SPECIFIC enough that we do not say “Do everything”;
- focus on the things PICES has a high and unique capacity to add value to;
- focus on a FEW things we can do well and that unify us, not every question that is individually worth studying.

The motivations for, and the benefits of, answering the key questions in the draft Science Plan were written in a style that was intended to inform the decision makers in PICES member countries, who are expected to support the science

program, about the need for the work. This was a key step in preparing for the April workshop because it provided the FISP workshop attendees with important background information for making the next move to refine and focus on a set of questions that will be the basis of the science in FUTURE.



Oleg Katugin (Russia), Sinjae Yoo (Korea) and Hiroaki Saito (Japan) at the FISP Writing Team meeting in Seattle, February 2007.

The workshop was successful, in part because of the participation by Science Board and several members of Governing Council. We reached consensus on a set of key questions, developed an overall outline for the Science Plan, and identified the next steps to complete a full draft of the plan. Like all workshops where the objectives are not easily achieved (such as developing a 10-year international science plan), we took a step backward before taking two steps forward. In our case, the approach to classifying the questions that was developed in Seattle (grouping of overarching scientific questions according to whether they deal with “status”, “mechanisms”, and “consequences”) was not up to the task, and a new approach was needed.

In Yokohama, members of the Writing Team gave brief presentations on the motivation for, and expected benefits of, answering a question. This provided the opportunity for a group discussion of the question and an initial reaction of its importance and relative priority. Breakout groups then took the list of candidate questions, grouped them into common themes, and then identified a few overarching questions/issues that captured the general themes of the more specific questions. By dividing the participants into breakout groups and assigning each group the same task, it was possible to determine if there was consensus on the overarching questions for FUTURE.

There was a great deal of commonality in the overarching questions developed by the four breakout groups. As a result, the consolidation of a first draft was much easier.



FISP workshop in session, Yokohama, Japan, April 2007.

One overarching question captured a desire to add elements of forecasting changes in North Pacific ecosystems that might arise as a consequence of natural and anthropogenic forcing. We also developed three key questions to address the related issues of: physics/chemistry, ecology/biology at ecosystem scales, and the effects of humans at the intersections of land, the coast and the open ocean:

Given the current and expected forcings, what will be the future conditions in the North Pacific?

1. What are the mechanisms linking the important physical and chemical processes (and parameters) and ecosystem responses in the North Pacific Ocean?
 - a. In light of global climate change and other anthropogenic forces, how will these linkages change over seasonal–annual and decadal timescales and what will be the consequences?
 - b. To what extent can we forecast these changes, and with what level of accuracy?
2. How does ecosystem structure and function determine an ecosystem’s response to natural and anthropogenic forcing?
3. How do human activities impact coastal marine ecosystems and their interactions with offshore and terrestrial systems?

A subset of the Writing Team (those not on cruises or otherwise engaged) met in late June 2007, again in Seattle, to begin developing a full draft of the Science Plan. We hope to distribute the draft to SG-FISP for review in July, with comments returned by the end of August. By mid-September, the full draft will be sent to Science Board and Governing Council and will be made available on-line to the general scientific community for review and comments. On November 1, we intend to hold an Open Forum at this year’s PICES Annual Meeting in Victoria, where we can have a discussion with all of PICES on the draft Science Plan. Suggestions that can substantively improve the plan will be welcomed and will be reviewed at another FISP workshop to be convened on November 3.



Workshop participants enjoying a brew at the end of the day.

Are we getting to FUTURE? I think we are making very good progress. I was recently in La Paz, Mexico, at the first biannual meeting of the Mexican Fisheries Society and the Mexican Chapter of the American Fisheries Society (AFS) to give a plenary lecture on PICES. In this presentation, I took the opportunity to discuss our progress in developing FUTURE and received many positive comments on its objectives and overall theme. Following the meeting in Mexico, I also gave a talk at the meeting of the North Pacific International Chapter of AFS, a local chapter of AFS for Washington and British Columbia, Canada. At this meeting the tenets of FUTURE were also warmly received. The positive reception at both meetings confirms for me that PICES is on the right track for its next integrative science program. In closing, I must acknowledge to the Study Group that we appreciate your efforts and look forward to your continued involvement when the draft plan is made available for review to all our ‘PICEans’—to quote a past PICES Science Board Chairman, Dr. Ian Perry.



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