

## REPORT OF WORKING GROUP 20 ON EVALUATIONS OF CLIMATE CHANGE PROJECTIONS

The Working Group on *Evaluations of Climate Change Projections* (hereafter WG 20) held its second meeting from 14:00–18:00 hours on October 27, 2007. After introductory formalities to members and observers (*WG 20 Endnote 1*) were conducted by Co-Chairmen, Drs. Michael G. Foreman and Yasuhiro Yamanaka, the draft agenda was reviewed and adopted without changes (*WG 20 Endnote 2*). Dr. Muyin Wang agreed to serve as the rapporteur.

### **Discussion of a workshop with CFAME and update on terms of reference (Agenda Items 3 and 4)**

The meeting began with a discussion of the recently concluded joint workshop on “*Climate scenarios for ecosystem modeling*” (W6) with the Climate Forcing and Marine Ecosystems Task Team (CFAME). The following was requested by CFAME from WG 20, preferably by their inter-sessional meeting in April 2008 and certainly by their final meeting in October 2008:

1. Graphic representations of climate/ocean states under climate warming for each of the three ecosystems selected by CFAME. For the Kuroshio/Oyashio, this representation will be based on detailed model results available from a high-resolution Japanese global climate model to which Dr. Yamanaka has coupled his biological COCO–NEMURO model. For the California Current System, this representation will be based on either results from a high-resolution Regional Ocean Model System (ROMS) climate model, or if this is not available, from downscaled global climate model values. For the Yellow and East China Seas, this graphic will also be based on either regional climate model output or downscaled values from global climate models.
2. Detailed output from Dr. Yamanaka’s COCO–NEMURO model simulations for

the Kuroshio/Oyashio region for 2007–2030 (or whatever projection time period he chooses).

3. A comparison of the atmospheric component in the Japanese high-resolution Model for Interdisciplinary Research on Climate (MIROC) with other climate models to assess the range of variability and determine any biases that could potentially affect the results arising from (2) above.
4. Climate change variables (such as SST, stratification, circulation) for the California Current System (north, central and south sub-regions) that have either been taken from regional climate models, or downscaled from global climate models.

The second and fourth requests were viewed as potentially longer-term products that could be included in the CFAME final report to provide future PICES groups with relevant climate parameters. Dr. Foreman will work with regional representatives in coordinating delivery of the first request. Dr. Yamanaka will work on the second, Drs. Wang and James E. Overland will work on the third, and Dr. Foreman will work with Drs. Wang, Overland, Enrique Curchitser, Arthur J. Miller and Emanuele Di Lorenzo on the fourth. It was also reported that CFAME will invite the WG 20 Co-Chairmen to attend their inter-sessional meeting in Honolulu in April 2008 (*CFAME Endnote 3*) in order to receive immediate feedback on revised descriptions of relevant physical processes for the three selected ecosystems.

In addition to the updates on WG 20 activities, Dr. Miller gave a short presentation on a recent climate workshop on “*The known, unknown, and unknowable*” at the Scripps Institution of Oceanography, and Dr. Young-Gyu Park provided an update on his regional Finite Volume Coastal Ocean Model (FVCOM) for the waters surrounding Korea.

**Next major PICES scientific program (Agenda Item 5)**

A lively discussion took place on the latest draft (version 4.2) of a Science Plan for a new PICES integrative scientific program on **F**orecasting and **U**nderstanding **T**rends, **U**ncertainties and **R**esponses of North Pacific Marine **E**cosystems (**FUTURE**). Dr. Foreman felt that physical and geochemical issues were not given sufficient recognition in the Science Plan for the role they will be playing in providing forecasts (and associated uncertainties) of ecosystems that are changing due to climate and other anthropogenic effects. Possible revisions to key and secondary questions were discussed and general agreement was given to a draft presentation by POC at the **FUTURE** Open Forum on November 1.

**Future WG 20 workshops and meetings (Agenda Item 6)**

Dr. Foreman briefly described the upcoming International Symposium on the “*Effects of climate change on the world’s oceans*” to be convened May 19–23, 2008, in Gijón, Spain. PICES has booked a room so that WG 20 can hold an informal meeting at this symposium if a

sufficient number of members attend. The invitation to participate in this meeting was also extended to CFAME members.

CFAME has expressed interest in holding another joint workshop with WG 20 on “*Climate scenarios for ecosystem modeling II*” at the 2008 PICES Annual Meeting (*CFAME Endnote 4*). Dr. Gordon A. (Sandy) McFarlane (CFAME) will be co-convening the workshop with either Dr. Foreman or Dr. Yamanaka.

**Items with financial implications (Agenda Item 7)**

Travel support was requested for:

- one WG 20 member to attend the next ESSAS Annual Meeting to be held in September 2008, in Halifax, Canada;
- Dr. Foreman to attend the Gijón Symposium where he will be co-convening a session on “*Past and future variability and change in ocean climate: Climate model projections*”.

**Other business (Agenda Item 8)**

No other business was discussed.

**WG 20 Endnote 1**

**Participation list**

Members

Enrique Curchitser (U.S.A.)  
Emanuele Di Lorenzo (U.S.A.)  
Michael G. Foreman (Canada, Co-Chairman)  
Hiroyasu Hasumi (Japan)  
Arthur J. Miller (U.S.A.)  
Young-Gyu Park (Korea)  
Muyin Wang (U.S.A.)

Elena Ustinova (Russia)  
Yasuhiro Yamanaka (Japan, Co-Chairman)

Observers

Yong-Kyu Choi (Korea)  
Albert J. Hermann (U.S.A.)  
Phillip R. Mundy (U.S.A.)  
Thomas C. Royer (U.S.A.)

## WG 20 Endnote 2

## WG 20 meeting agenda

1. Welcome, introductions, opening remarks
2. Adoption of agenda and appointment of rapporteur
3. Discussion of, and action items arising from, a workshop with CFAME
4. Updates on work related to WG 20 terms of reference
5. Discussion on the next major PICES scientific program, FUTURE: Roles for WG 20 and respective member countries
6. Future WG 20 workshops/meetings
  - (i) Climate Change Symposium, Gijón, Spain, May 2008
  - (ii) PICES XVII, Dailan, China, Oct.–Nov. 2008
  - (iii) other?
7. Items with financial implications
  - (i) Travel support requests:
    - a. ESSAS Annual Meeting, Halifax, September 2008
    - b. Climate Change Symposium, Gijón, Spain, May 2008
  - (ii) Other items
8. Other business
9. Adoption of report for presentation at POC committee meeting

