

**REPORT OF WORKING GROUP 22 ON
IRON SUPPLY AND ITS IMPACT ON BIOGEOCHEMISTRY AND
ECOSYSTEMS IN THE NORTH PACIFIC OCEAN**

The Working Group on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (WG 22) held its second meeting on October 25, 2009 from 14:00 to 18:00 under the co-chairmanship of Drs. Fei Chai and Shigenobu Takeda who welcomed the participants and called the meeting to order. Members who attended the meeting are listed in *WG 22 Endnote 1*.

Unfortunately, the Working Group lost one of its members, Prof. Xiuren Ning, from China, who died from an automobile accident in France. At the beginning of the meeting, members and observers held one minute of silence to pay tribute to Prof. Ning.

Drs. Chai and Takeda reviewed its Terms of Reference, and reported on the progress and activities of the Working Group during the past year. Dr. Takeda talked about the SCOR working group on synthesizing ocean iron fertilization data and future modeling activities (WG 131 on The Legacy of in situ Iron Enrichment: Data Compilation and Modeling). Dr. Chai presented the U.S. position statement on large-scale iron fertilization experiments. Both Co-Chairmen reported on the London Convention Scientific Working Group and IOC *ad hoc* committee activities on ocean fertilization. Dr. Maurice Levasseur (member from Canada) was unable to attend the meeting, but prepared a document calling for international research collaboration on iron-dust deposition in the HNLC regions considering a pH decrease in the ocean. The Working Group reviewed the 1-day workshop (W1) on “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*” held October 25, 2009 and co-sponsored by BIO and SOLAS (see list of participants and workshop summary on page **Error! Bookmark not defined.**).

A proposal for a Topic Session on “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*” was put forth for PICES-2010 in Portland, U.S.A. (*WG 22 Endnote 2*). The Topic Session will be co-sponsored by SOLAS. Convenors have been selected and invited speakers have been proposed, but not yet confirmed. Travel support for two invited speakers is requested from PICES.

WG 22 Endnote 1

WG 22 participation list

Members

Fei Chai (USA, Co-Chairman)
William Crawford (Canada)
Jun Nishioka (Japan)
Hiroaki Saito (Japan)
Vladimir Shulkin (Russia)
Shigenobu Takeda (Japan, Co-Chairman)
Mark Wells (USA)

Observers

Kenneth Bruland (USA)
Stephanie Dutkiewicz (USA)
Masahiko Fujii (Japan)
Ai Hattori-Saito (Japan)
Guimei Liu (China)
Tsuneo Ono (Japan)
Hiroshi Sumata (Japan)
Toru Suzuki (Japan)
Keisuke Uchimoto (Japan)
Atsushi Tsuda (Japan)

WG 22 Endnote 2

**Proposal of a 1-day Topic Session on
“Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures
in the North Pacific Ocean” at PICES-2010**

Iron plays a key role in regulating the biogeochemical cycles of carbon and nitrogen, and pelagic ecosystem structures in the North Pacific Ocean, yet our understanding of these effects remains limited. External sources of iron, such as Asian dust, rivers, sediments, and volcanoes supply large amounts of iron to the North Pacific, while the physical processes of upwelling, meso-scale eddies, boundary currents, and tidal mixing transport deep waters with high iron concentration to the upper ocean. Biological uptake, zooplankton grazing, remineralization, and iron chemistry change the forms of iron and its distribution in the North Pacific Ocean. This session invites papers that address physical, biological and chemical processes controlling iron distribution and transformation, linkages between iron and ecosystem responses, and impacts on carbon and nitrogen cycles. We particularly invite papers that combine recent progress from field observations and modeling studies that relate iron cycling to ecosystem structures and carbon fluxes in the North Pacific Ocean.

Co-convenors: Mark Wells (USA), Angelica Peña (Canada), and Toshi Saino (Japan)

Suggested invited speakers:

Keith Moore (USA)

Phoebe Lam (USA)

Hajime Obata (Japan)

One modeler outside PICES countries, who develops more detailed iron chemistry

Jay Cullen (Canada)

Maurice Levasseur (Canada)