

1 BACKGROUND AND OBJECTIVES

Iron deficiency has been proposed as the reason for the existence of surface waters rich in macronutrients but low in phytoplankton biomass in the subarctic Pacific, the equatorial Pacific and the Southern Ocean. In the summer of 2001, an iron enrichment experiment, the Subarctic Pacific Iron Experiment for Ecosystem Dynamics Study (SEEDS-I), was performed in the western subarctic Pacific; in the summer of 2002, another iron enrichment experiment, the Subarctic Ecosystem Response to Iron Enrichment Study (SERIES), was carried out in the eastern subarctic Pacific (Fig. 1). These international collaborative projects between Canada and Japan were conceived at the first planning workshop of the PICES Advisory Panel on *Iron Fertilization Experiment in the subarctic Pacific Ocean* (IFEP), held in Tsukuba, Japan, in 2000, in conjunction with PICES IX (see Appendix 1 for details).

In order to review the results and outstanding questions from these experiments, and to discuss plans for a second, longer-term experiment in the western subarctic Pacific (SEEDS-II), a Workshop on “*In situ* iron enrichment experiments in the

eastern and western subarctic Pacific” was held February 11–13, 2004, at the Chateau Victoria Hotel, Victoria, British Columbia, Canada. Twenty-six scientists from Canada, Japan, the United States of America, and the PICES Secretariat, attended the workshop.

The objectives of the workshop were to:

- Synthesize results from the two *in situ* iron enrichment experiments performed in the eastern and western subarctic Pacific (SEEDS-I and SERIES);
- Discuss responses to iron additions in lower and higher trophic levels, carbon cycles, trace-gas production and ocean–atmosphere flux, and models;
- Determine similarities and differences in biogeochemical and ecosystem responses to iron addition between the eastern and western subarctic Pacific;
- Identify specific scientific questions for the new longer-term experiment in the western subarctic Pacific (SEEDS-II).

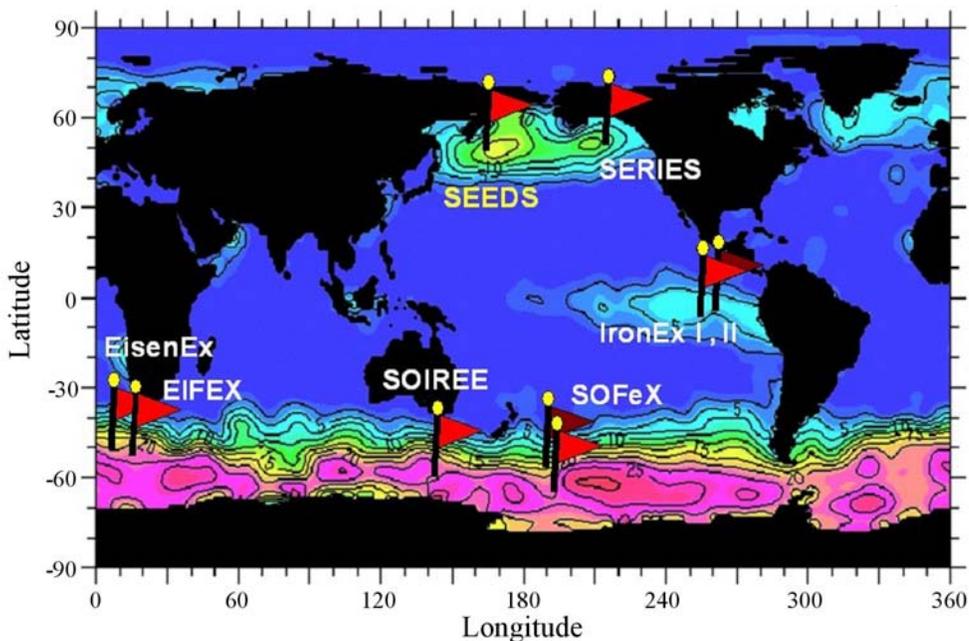


Fig. 1 Location of iron enrichment experiments in the Pacific and Southern Oceans (NOAA World Ocean Atlas, 1994).