PICES Contracting Parties:
Canada, People's Republic of China
Japan, Republic of Korea, Russian
Federation, United States of America

North Pacific Marine Science Organization - PICES

http://pices.int

PICES Integrative Science Programs

CCCC: Climate Change & Carrying Capacity (1996-2009)

Physical Forcing: What are the characteristics of climate variability, can interdecadal patterns be identified, how and when do they arise?

- 2000 Prog. Oceanogr. (North Pacific Climate Regime Shifts)
- 2005 Fisheries Ecosystem Responses to Recent Regime Shifts (FERRRS) Advisory Report
- Many scientific papers on regime shifts and climate variability

Ecosystem Interactions: How are subarctic Pacific ecosystems structured? Is it solely through bottom-up forcing, or are there significant intra-trophic level and top-down effects?

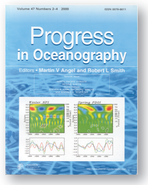
- Prog. Oceanogr. (Mechanisms regulating North Pacific ecosystems: Bottom up, top down, or something else?
- ECOSIM/ECOPATH efforts to examine higher trophic food webs
- Iron Fertilization Experiments in western and eastern Subarctic Pacific that were coordinated through BASS advisory panel IFEP.

Lower Trophic Responses: How do primary and secondary producers respond in productivity, and in species and size composition, to climate variability in different ecosystems of the No. Pacific?

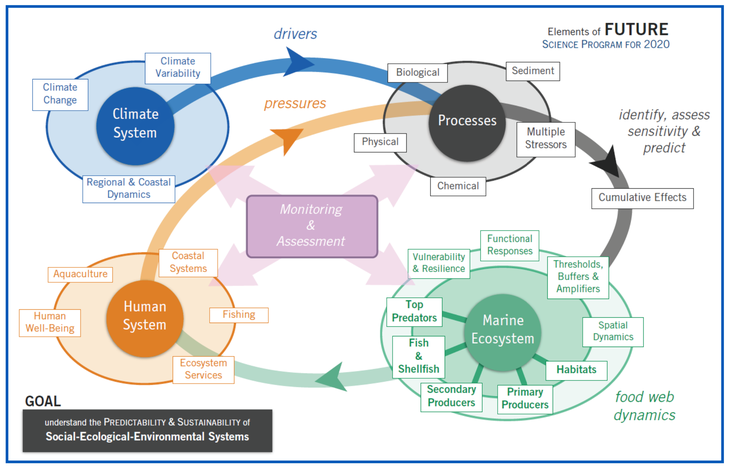
- Ecological Modelling Special Issue on NEMURO model
- Contributions to North Pacific Ecosystem Status Reports
- Development of NEMURO through many workshops--provides link of Lower Trophic Levels to climate
- Activities leading to SCOR WG125 on Global Comparison of Zooplankton
- New CPR program in the North Pacific

Higher Trophic Responses: How do life history patterns, distribution, vital rates, and population dynamics of higher trophic level species respond directly and indirectly to climate variability?

- Linkage of NEMURO to higher trophics, esp. fish, NEMURO.FISH
- Cross-regional comparisons of species responses to climate--e.g., herring, sardine, pollock
- ECOSIM/ECOPATH efforts of BASS to examine differences in higher trophic food webs of eastern and western subarctic gyres.



FUTURE: Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems (2009-present)



Research Themes/Questions:

- What determines an ecosystem's intrinsic resilience and vulnerability to natural and anthropogenic forcing?
- How do ecosystems respond to natural and anthropogenic forcing, and how might they change in the future?
- How do human activities affect coastal ecosystems and how are societies affected by changes in these ecosystems?

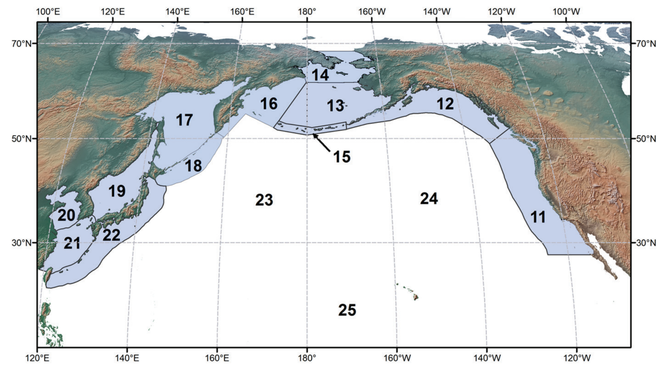
More about the FUTURE Science program is at: http://meetings.pices.int/Members/Scientific-Programs/FUTURE

PICES Publications (#pubs) | More Publication Information: http://meetings.pices.int/publications

Annual Reports (26)
Scientific Reports (53)
Special Publications (4)
Primary Journals
(56 special issues;
6 review papers)
Technical Reports (1)
Brochures (4)
Books (5)
PICES Press Newsletters
(2/yr since 1993)

Ecosystem Status Reports

NPESR: North Pacific Ecosystem Status Report



NPESR-1 This first ecosystem status was designed to identify, describe and integrate observations of change in the North Pacific, including regional and basin-wide synthesis during 1998-2003.

NPESR-2 The focus period of this status report is 2003-2008. The chapters summarize status in the four marginal seas, four coastal boundary currents, the oceanic region, and provide an overall synthesis.

NPESR-3 is in progress. It was delayed by a transition in approach to assemble information.

The goal remains to assess status and trends in the numbered ecosystems above. Electronic data (Ecosystem Time Series Observations=ETSOs) are submitted via the internet. ETSOs will be used to author regional assessments, and a synthesis workshop will provide the basin scale synthesis.

More about NPESR is at: http://meetings.pices.int/members/working-groups/wg35

PICES was created to:

- promote and coordinate marine research to advance scientific knowledge through the collection and exchange of information and data on the North Pacific Ocean and ecosystems by conducting research on the status and trends of the ocean environment and its interactions with human activities and atmospheric processes.
- coordinate science to assess the future state of ecosystems as influenced by climate variability and change and human activities.

PICES methods:

- Provide vision and leadership on scientific issues, identifies priorities and approaches for solutions;
- Plan and implement integrated, interdisciplinary research programs through member country efforts;
- Promote collection/exchange of data and information;
- Assess ecosystem status and trends and project future changes;
- Synthesize scientific information and make it available to a broad user community and the public;
- Provide advice on scientific issues to member countries and other organizations;
- Develop capacity within the scientific communities of the member countries;
- Fosters partnerships with other organizations and programs.

Scientific Exchange of marine science information is important to PICES. This occurs in the form of our publications and website **(www.pices.int)**, and through our actions and sponsorship of workshops and international symposia. A subset of the symposia series that we have convened/sponsored are shown in the timeline below.

Capacity Building of marine scientists is important to PICES. This occurs in the form of our intern program, summer schools, and early career scientist conferences (ECS). Summer Schools (SS-) and three ECS conferences are shown in the timeline below.

ECS-1 (above left photo) included 98 marine scientists and was held in Baltimore, USA (2007), ECS-2 (photo not shown) in Majorca, Spain (2012) was attended by 130 marine scientists and ECS-3 (above right) in Busan, Korea had 103 early career marine scientists. PICES and ICES jointly fund and organize the ECS conferences every five years.

PICES Timeline