North Pacific Marine Science Organization (PICES) : UN Decade and Possible Cooperation with IODE

Joon-Soo Lee
Chair, PICES Technical Committee on Data Exchange (TCODE)
Structure of the presentation

- Overview of PICES
- PICES and UN Decade of Ocean Science for Sustainable Development (2021-2030)
- PICES TCODE (Technical Committee on Data Exchange)
- Possible Cooperation with IODE
PICES (North Pacific Marine Science Organization)

An **intergovernmental scientific** organization, established in 1992 to **promote and coordinate marine scientific research** in the **North Pacific Ocean** and adjacent seas in order to **advance scientific knowledge** of the area concerned and its living resources.

- **Member countries**
  - Canada
  - People's Republic of China
  - Japan
  - Republic of Korea
  - Russian Federation
  - The United States of America
- Governing Council
- Finance & Administration Committee
- Science Board
  - Standing Committees
    (Scientific C.) BIO, FIS, MEQ, POC, HD
    (Technical C.) TCODE, MONITOR
  - Expert Groups
    : Study Groups, Working Groups, Sections
  - Scientific Programs
    : FUTURE
- Task Teams
- Advisory Panels
Meetings
- Annual meetings
- International symposia
- Inter-Sessional Workshops/Meetings
- Schools/Training courses
- Special Sessions
The UN Decade of Ocean Science for Sustainable Development (2021-2030)
FUTURE: Integrated Science Program

Forecasting and Understanding Trends, Uncertainty and Responses of the North Pacific Ecosystem

Goals

• To understand how marine ecosystems in the North Pacific respond to climate change and human activities,

• To forecast ecosystem status based on current knowledge of how the natural world functions,

• To communicate new insights to PICES scientists, their governments, stakeholders, and the public.
PICES and UN Decade
FUTURE Themes

Ocean Decade Societal outcomes

What determines an ecosystem’s intrinsic resilience and vulnerability to natural and anthropogenic forcing?

How do human activities affect coastal ecosystems and how are societies affected by changes in these ecosystems?

How do ecosystems respond to natural and anthropogenic forcing, and how might they change in the future?

A clean Ocean
Sources of pollution are identified, quantified and reduced, and pollutants removed from the Ocean.

A healthy and resilient Ocean
Marine ecosystems are mapped and protected, multiple impacts, including climate change, are measured and reduced, and the provision of Ocean ecosystem services is maintained.

A predicted Ocean
Society has the capacity to understand current and future Ocean conditions, forecast their change and impact on human wellbeing and livelihoods.
<table>
<thead>
<tr>
<th>FUTURE Objectives</th>
<th>The Decade will be mission-oriented</th>
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<tbody>
<tr>
<td><strong>A safe Ocean</strong></td>
<td>Human communities are protected from ocean hazards and the safety of operations at sea and on the coast is guaranteed.</td>
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<tr>
<td><strong>A sustainable productive Ocean</strong></td>
<td>The provision of food supply and alternative livelihoods are secured.</td>
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<tr>
<td><strong>A transparent and accessible Ocean</strong></td>
<td>All nations, stakeholders and citizens have access to ocean data and information, technologies, and are capable of making informed decisions.</td>
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**To increase understanding of climatic and anthropogenic impacts and consequences on marine ecosystems, with continued leadership at the frontiers of marine science:**

- The Decade will be mission-oriented

**To develop activities that include the interpretation, clarity of presentation, peer review, dissemination, and evaluation of ecosystem products and establish a process for engaging interested institutions and other recipients.**

The ultimate goal of FUTURE is to understand and communicate the future of North Pacific ecosystems and the potential impacts from human use.
UN Decade of Ocean Science for Sustainable Development
Priority Research and Development Areas

R&D Priority Area 1: Comprehensive map (digital atlas) of the ocean
(Scope: well beyond topography)
VERY LOW Priority in PICES
UN Decade of Ocean Science for Sustainable Development
Priority Research and Development Areas

R&D Priority Area 2:
A comprehensive ocean observing system
(polar, bio, eco, BGC, eDNA, deep ocean, +)

HIGH Priority in PICES
UN Decade of Ocean Science for Sustainable Development
Priority Research and Development Areas

R&D Priority Area 3:
A quantitative understanding of ocean ecosystems as the basis for their integrated ocean management

HIGH Priority in PICES
(and joint work with ICES)
UN Decade of Ocean Science for Sustainable Development Priority Research and Development Areas

R&D Priority Area 4:
Data & information System

LOW Priority in PICES
(we would be users, not developers)
UN Decade of Ocean Science for Sustainable Development
Priority Research and Development Areas

R&D Priority Area 5: Ocean dimension in an integrated multi-hazard warning system

NOT a PICES Priority
UN Decade of Ocean Science for Sustainable Development
Priority Research and Development Areas

R&D Priority Area 6: Ocean compartment of the Earth System
(The only way to climate prediction)

HIGH Priority in PICES
UN Decade of Ocean Science for Sustainable Development
Priority Research and Development Areas

R&D Priority Area 7: Capacity Development
Education and Training
Ocean Literacy

"FAR AND AWAY, THE GREATEST THREAT TO THE OCEAN, AND
THUS TO OURSELVES, IS IGNORANCE".
Sylvia Earle, President of Mission Blue

LOW - MEDIUM Priority in PICES
Sustainable Development Goals – PICES arithmetic

- There are a LOT of SDG Goals, Subobjectives and Indicators
- Only a subset are relevant to PICES
- If these, only a few indicators are of **HIGH** importance to PICES
- PICES interests extend beyond SDG 14 – Life Below Water
- PICES would not be the primary source for indicator data
- There are many important implied (but not yet specified) scientific questions for organization like PICES to identify and address.

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<tr>
<th>Item</th>
<th>Total</th>
<th>Relevant to PICES</th>
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<tr>
<td>SDG Goals</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>SDG Subobjectives</td>
<td>169</td>
<td>22</td>
</tr>
<tr>
<td>SDG Indicators</td>
<td>244</td>
<td>25</td>
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TCODE Terms of Reference

1. Identify the data management requirements of PICES;
2. Develop plans to meet these requirements;
3. Recommend establishment of expert groups to deal with specific functions of TCODE;
4. Review the progress of expert groups and provide Annual Reports to Science Board on the work of TCODE;
5. Advise the PICES Secretariat and expert groups on their data exchange activities;
6. Develop, review, and update PICES data policies and data inventory.
New members at PICES-2018
- Prof. Yutaka Michida (ex-officio, represents IODE)

Current Members (as of February 2019)
- 16 members in total
- Canada (2), China (2), Japan (3), Korea (3), Russia (2), USA (3), ex-officio (1)
PICES TCODE (Technical Committee on Data Exchange)

- Started from WG4 “Data collection and quality control”
- Replaced by PICES technical committee in 1994 by Science Board recommendation
- Major past activities
  - Inventory of Long Time Series and real-time data sources
  - Bering Sea Ecosystem Biophysical Metadatabase (NPEM)
  - TCODE webpage
  - Assisted Task Teams (MONITOR, MODEL, etc)
  - Supported Workshops (HAB, Data management, etc), Expert Group activities (WG 13, WG 17, WG-21, HAB-S, NPESR etc), Topic sessions
  - Electronic poster session
  - Developed TCODE strategic plan and action plan
  - Cooperation with international organizations (GLOBEC, ICES, IOC, IODE, etc)
  - Project “Federate Metadata on North Pacific Ecosystems”
  - PICES TCODE GeoNetwork Portal
  - Evaluation of POMA (PICES Ocean Monitoring Service Award) nomination
PICES TCODE (Technical Committee on Data Exchange)

• **Current activities**
  - Parent committee of AP-NPCOOS (Advisory Panel on North Pacific Coastal Ocean Observing Systems)
  - Supports topic sessions, special projects, workshops
  - Maintains TCODE webpage and PICES TCODE Geospatial Portal
  - Develops data policy (2014~)

• **Increasing needs for data-related activities in PICES**
  - Metadata
  - ETSOS (Environmental Time Series Observations) for NPESR (North Pacific Ecosystem Status Report)
  - Data and Data products from Special Projects
  - Support Expert Group activities
  - Potential demand for Data Management
Example of TCODE activities (PICES TCODE Metadata Catalogue)
Example of TCODE activities (PICES Data Policy)

North Pacific Marine Science Organization

PICES Policy

Council approved the following Data Policy:

2018/A/6: Data Management Policy

1. Principles and Definitions

As stated in Article III of the Convention for the North Pacific Marine Science Organization (PICES) the Organization is to promote the collection and exchange of information and data related to marine scientific research in the North Pacific Ocean and its adjacent seas.

The PICES strategy on capacity development identifies TCODE as the committee responsible for the development of communication networks for exchange of data and information.

Data gathered as a result of PICES activities will be responsibly managed to guard against loss and to ensure continued accessibility. The management of data using external data management systems is preferred to using internal PICES resources.

For any data provided to PICES, PICES will respect the ownership rights and any restrictions placed on these data by the provider.

- Data include data products and model outputs related to PICES activities. Metadata are data about data.
- End users include a person, organization, group (including PICES expert groups) using data.
- Data providers include a person, organization, group (including PICES expert groups) providing data.
- The data inventory refers to data for which PICES has the primary responsibility to manage.

2. Roles and Responsibilities

The Technical Committee on Data Exchange (TCODE) is responsible to:

- Manage the PICES data inventory.
Possible Cooperation with IODE

- Joining IODE ADU or AIU
- Symposia
- Workshops
- Joint Working Groups
- Summer Schools
Thank you!