

PICES Meeting to Develop Human Dimension Indicators and Information in Support of the PICES Ecosystem Status Report and the First World Ocean Assessment

Dates:

June. 13th- 15th, 9:00-17:00

Venue:

Hawaii Prince Hotel Waikiki, Honolulu, Hawaii, USA

<http://www.princeresortshawaii.com/hawaii-prince-hotel-waikiki/index.php>

Co-Chairs:

Keith Criddle (University of Alaska Fairbanks, Juneau, AK, USA)

Mitsutaku Makino (Fisheries Research Agency, Yokohama, Japan)

Tom Therriault (Fisheries and Oceans Canada, Pacific Biological Station, Nanaimo, Canada)

Ian Perry (Fisheries and Oceans Canada, Pacific Biological Station, Nanaimo, Canada)

Meeting objectives/background (see also Appendices 1 and 2, below)

The North Pacific Marine Science Organization (PICES) is an intergovernmental organization formed to promote increased scientific understanding of the North Pacific Ocean. One mechanism PICES has used to convey information on ecosystem status and trends is the North Pacific Ecosystem Status Report (NPESR). The two previous reports have highlighted climatic, oceanographic, and biological changes. Socioeconomic aspects have been identified as an important gap to be filled in the next iteration. Separately, the United Nations has embarked on a Regular Process for global reporting and assessment of the state of the marine environment known as the World Ocean Assessment (WOA). The objectives of the WOA neatly complement the PICES NPESR which currently is in its third cycle. The purpose of this meeting is to assemble information on social and economic – or "human dimension" – indicators for marine ecosystems in the North Pacific. This information will be used in the next iteration of the PICES NPESR and will be beneficial for the first WOA. Participants will contribute to the following workshop objectives:

- * Compile and review socioeconomic data for the North Pacific to identify human dimension indicators to be employed in the 3rd NPESR
- * Identify data gaps that would limit the application/utility of human dimension indicators
- * Identify additional socioeconomic data sources to inform the First WOA
- * Engage PICES member countries in the WOA process and strengthen linkages between PICES, other intergovernmental organizations, and the WOA Group of Experts.

Agenda:

Day 1 (13 June)

Welcome and Introductions (Co-Chairs)

Adoption of the Agenda

Introduction to the Meeting (Co-Chairs)

Meeting Objectives: Fulfilling Two Goals (Therriault)

An Introduction to the Next PICES North Pacific Ecosystem Status Report (NPESR) and the Need for Human Dimension Indicators (Perry)

An Introduction to the First World Ocean Assessment (WOA) plus outcomes from previous WOA data compilation workshops (Alan Simcock)

What Do We Mean by Human Dimension Indicators? (Rashid Sumaila)

Lunch break

What Data/Information are available for Human Dimension indicators: A Review of Member Country Data for the North Pacific (**please see Appendix 1 below**)

Canada

China

Japan

Russian Federation

South Korea

United States

Other?

End of Day 1

(Version 31 May 2013)

Day 2 (14 June)

Recap of Day 1 (Co-Chairs)

Discussion on what Human Dimension indicators should/could be developed in support of the next NPESR?

Synthesis of what we have

Identification of what we need

Recommendations for moving forward

Lunch break

Review of Chapter Outlines for WOA

Discussion of Synergies with the First WOA

Compilation of “Human Dimension” data/information in support of WOA

Tables will be developed

End of Day 2

Day 3 (15 June)

Recap of Day 2 (Co-Chairs)

Development of PICES report(s) plus report for World Ocean Assessment

Next Steps

Close of meeting

If you have any questions, please contact the Co-Chairs

(thomas.therriault@dfo-mpo.gc.ca; mmakino@affrc.go.jp;

ian.perry@dfo-mpo.gc.ca; or kcriddle@alaska.edu)

Appendices

Appendix 1. PICES North Pacific Ecosystem Status Report

See the web site for this item at <http://www.pices.int/projects/npesr/default.aspx>

The PICES report on marine ecosystems is intended to periodically review and summarize the status and trends of the marine ecosystems in the North Pacific, and to consider the factors that are causing or are expected to cause change in the near future. The first report, begun in mid-2002 and completed about 18 months later, can be found at http://www.pices.int/publications/special_publications/NPESR/2004/npesr_2004.aspx

It served as a pilot project to explore for what might be possible. This report was based largely on geographic locations and subjects for which time series data or information are readily available. The report also identified locations and subjects where data were collected but were then are not available. The second report, available at http://www.pices.int/publications/special_publications/NPESR/2010/NPESR_2010.aspx was published in 2010 and built upon the first status report representing a more detailed and in-depth analysis. Neither of these report included the human use and dimensions of marine ecosystems in any integrated or consolidated way.

Formation of the PICES Section on the Human Dimensions of Marine Systems in 2011 provides the opportunity to, among other goals, contribute more information and synthesis to the PICES status report process than was possible previously. The objective of this new PICES Section is to better understand and communicate the societal implications of the conditions and future trends of North Pacific marine ecosystems (FUTURE vision), to provide a forum for the integration of FUTURE-related studies using social science approaches and tools, and to facilitate the close discussions and communications among researchers from both the natural and social sciences. Term of Reference #3 for this Section is to contribute a Human Dimension Chapter to the next North Pacific Ecosystem Status Report. This present workshop provides an opportunity to get started with this goal.

The range of topics that could be explored as contributions to the PICES status report is large – for example, see the attached pdf document with the chapter headings for the first World Ocean Assessment (and see Appendix 2, below). To focus this information, this Workshop will consider mostly the topics under Chapter 15 “Social and economic aspects of fisheries and sea-based food” in the World Ocean

Assessment draft chapter outline (see attached pdf). The topics in this chapter include:

15A. Relationship with human health: health benefits and problems from sea-based food, including the potential to supplement protein-poor diets – chemical, toxic and bacterial contamination.

15B. Scale and significance of employment in fisheries and aquaculture: numbers employed – relationship of earnings to local median earnings – scale of injuries to fishers compared to other industries.

15C. Role of fisheries in social structure: role of fishers in local societies – extent to which fishing is the sole source of livelihood – extent to which local societies are dependent on fisheries and aquaculture.

15D. Relationship between catch areas, ownership and operation of fishing vessels, landing ports and consumption distribution: the benefits which States (and economic operators based in them) obtain from fisheries and aquaculture.

15E. Implementation of international fisheries agreements.

15F. Effects of changes in markets: growth of long-distance transport of landed fish and shellfish.

15G. Links to other industries: scale of economic activity dependent on fisheries and aquaculture, both in providing equipment (especially ships) and in processing output in value chains.

15H. Identify gaps in capacity to engage in fisheries and to assess the environmental, social and economic aspects of fisheries.

This Workshop will start by assembling basic information on human social and economic ‘use’ of fisheries and sea-based foods, and attempt a synthesis among PICES nations around the North Pacific. Participants are requested to bring data, data summaries, or as much information as possible relating to the following topics (if data are not available that is also important information, as are contacts for people who could provide this information):

1. Basic information on the fisheries sector;

- Number and size of fishing vessels
- catch information (volume and value) by species and by gear types (comparison of diversity in catch composition and gear types)
- Resource status summary (if any)
- number of employment in fish processing/distributing sector,
- value added by fish processing/distributing sector
- number of fishing ports, fish markets

- number of fishing communities, its demographic information

2. Consumption aspects

- types of usage, (raw, frozen, processed, fish meal, oil, etc.)
- Rates of per capita consumption (and perhaps how they are changing plus forward projections)

3. Governance information

- Main legal structures (laws relating to fisheries or resource management), including international conventions
- Governmental and non-governmental organizations relating to fisheries

4. Cultural aspects

- any specific national culture (arts, festivals, education, etc.) which closely relate to fisheries, and are worth highlighting in World Ocean Assessment.

If data and/or summaries of this information are not available, then please identify who in your nation would be the appropriate contact.

Data gaps will also be identified.

Appendix 2. World Ocean Assessment

See their web site at www.worldocean.assessment.org

Mandate:

The Regular Process was established by the United Nations General Assembly through a series of resolutions. The full texts can be found at:

<http://www.un.org/depts/los>

The objective for the Regular Process is articulated in UNGA Resolution 57/141, (2005) “to improve understanding of the oceans and to develop a global mechanism for delivering science-based information to decision makers and public”.

The overall objective, endorsed by the UN General Assembly in UNGA Resolution 64/71 (2009), paragraph 177, is that:

- “The regular process under the United Nations would be recognized as the global mechanism for reviewing the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis by providing regular assessments at the global and supraregional levels and an integrated view of environmental, economic and social aspects.
- Such assessments would support informed decision-making and thus contribute to managing in a sustainable manner human activities that affect the oceans and seas, in accordance with international law, including the United Nations Convention on the Law of the Sea and other applicable international instruments and initiatives.
- The regular process would facilitate the identification of trends and enable appropriate responses by States and competent regional and international organizations.
- The regular process would promote and facilitate the full participation of developing countries in all of its activities. Ecosystem approaches would be recognized as a useful framework for conducting fully integrated assessments.”

Assessment process:

The task of the first cycle of the Regular Process (2010 to 2014) will be to produce the World Ocean Assessment. To this end, the General Assembly has created an Ad Hoc Working Group of the Whole, to oversee and guide the Regular Process, and a Group of Experts to carry out the assessments within the framework of the Regular Process. In addition, a much larger pool of experts has been created to assist the Group of Experts in conducting the assessments and to provide effective peer-review to ensure the high quality of the outputs. Since the Working Group meets once a year, a Bureau consisting

of fifteen Member States, representing the regional groups of the United Nations, was established for the intersessional periods. The Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations, has been designated by the General Assembly to act as the secretariat of the Regular Process and it maintains a [separate website for the Regular Process](#), including an archive of relevant documents.

Draft Structure for the assessment:

The UN General Assembly has approved the [Outline for World Ocean Assessment I](#) based on the following broad structure:

- I. Summary
- II. The context of the assessment
- III. Assessment of major ecosystem services from the marine environment (other than provisioning services)
- IV. Assessment of the cross-cutting issues: food security and food safety
- V. Assessment of other human activities and the marine environment
- VI. Assessment of marine biological diversity and habitats
- VII. Overall assessment

The comprehensive outline (see attached pdf document) has nearly 50 topics grouped within four main themes: biophysical aspects of the marine environment; food security and safety; human activities that influence the ocean; and, marine biological diversity and habitats. The first World Ocean Assessment will include a technical summary showing interdisciplinary linkages between human impacts, ecosystem services, species and habitats.

The process of developing this structure started from the Drivers-Pressures-State-Impacts-Response (DPSIR) framework (Fig. 1). This framework was recommended by the Assessment of Assessments (the start-up phase of the Regular Process). The DPSIR represents a systems-analysis view – the driving forces of social and economic development exert pressures on the environment. As a consequence, the state of the environment changes. This leads to impacts on, for example, human well-being and ecosystem health that can lead to a response in social controls on human activity. This in turn feeds back onto either the driving forces, the pressures, the state of the environment or the impacts directly, through adaptation or through curative action. The DPSIR approach offers at least three possible approaches for structuring the Assessment: (a) Pressures; (b) Habitats; and (c) Ecosystem Services.

The DPSIR represents a systems-analysis view – the driving forces of social and economic development exert pressures on the environment. As a consequence, the state of the environment changes. This leads to impacts on, for example, human well-being and ecosystem health that can lead to a response in social controls on human activity. This in turn feeds back onto either the driving forces, the pressures, the state of the environment or the impacts directly, through adaptation or through curative action.

Using pressures as the basis of the structure of the World Ocean Assessment I would have the advantage that the human activities creating the pressures are commonly linked with data collection and regulation. For instance, permits that are issued for offshore oil and gas development require specific monitoring and reporting obligations be met by operators. It would not, however, give an integrated view of the combined effects of the impacts of different pressures.

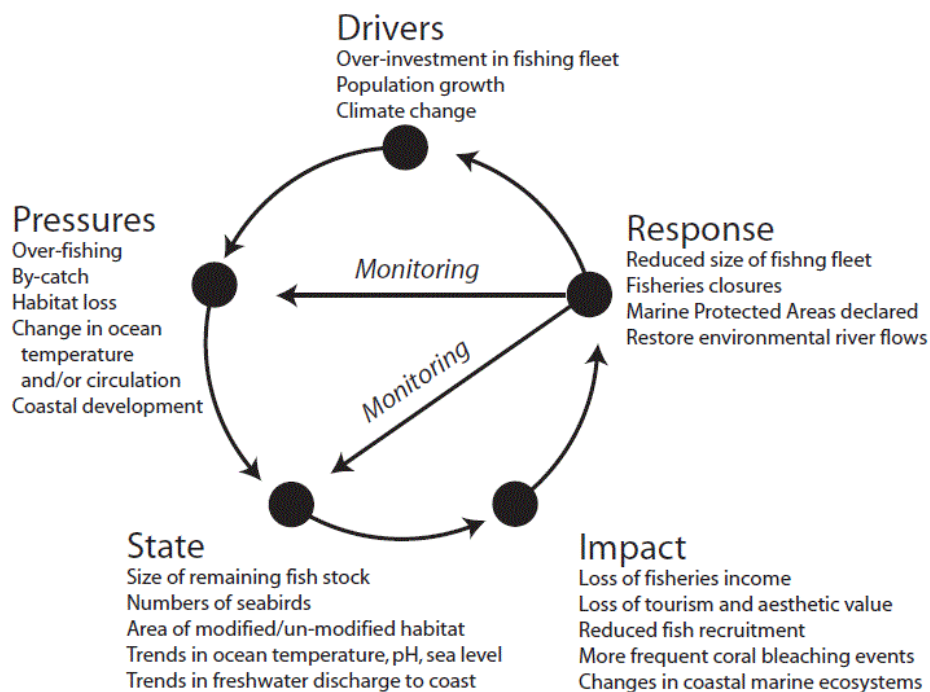
Using marine habitats as the basis for the structure would have the advantage that “habitat” is the property that inherently integrates many ecosystem features, including higher and lower trophic level species, water quality, oceanographic conditions and many types of anthropogenic pressures (1). The cumulative aspect of multiple pressures affecting the same habitat, that is often lost in sector-based environmental reporting (2), would be captured by using Habitats as assessment units. It would not, however, give a coherent view of the economic and social aspects of the various human activities.

Using ecosystem services as the basis for the structure would follow the approach of the Millennium Ecosystem Assessment (3). This has the advantage of broad acceptance in environmental reporting (3). It includes provisioning services (food, construction materials, renewable energy, coastal protection) while highlighting regulating services and quality-of-life services that are not captured using a pressures or habitats approach to structuring the Assessment. However, it would not give a focused view of the situation of specific species and habitats of high importance.

The UN General Assembly had highlighted (4) the cross-cutting issues of food safety and food, where the most significant ecosystem provisioning services come together with the social and economic issues of the highest importance.

Given that all three approaches have their own particular advantages and disadvantages and the importance of reflecting the cross-cutting issues, the Group of Experts proposed a combination of all three approaches.

Fig. 1. Diagram of World Ocean Assessment Drivers-Pressures-State-Impacts-Response (DPSIR) framework.



Regional workshops

The purpose of the regional workshops is to identify regional experts who might participate in the production of the first global ocean assessment while simultaneously making an inventory of existing assessments and useful data sets and identifying regional capacity building needs for the conduct of state of marine environment reporting. Regional workshops have been carried out (as of February 2013) in:

- 1) Santiago Chile to cover the eastern Pacific Ocean;
- 2) Sanya City, China to cover the East Asian Seas, including the Indonesian archipelago.
- 3) Brussels, Belgium to cover the North Atlantic Ocean, the Baltic Sea, the Mediterranean Sea and the Black Sea.
- 4) Miami, Florida, USA to cover the wider Caribbean.
- 5) Maputo, Mozambique to cover the Western Indian Ocean Region