

# DEVELOPMENT OF ECOSYSTEM INDICATORS WITHIN PICES

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*H. Batchelder, UNEP Workshop on indicators for regional seas, Geneva, July 2014*

# WHAT IS PICES?

- PICES: North Pacific Marine Science Organization
- PICES is an intergovernmental scientific organization that was established and held its first meetings in 1992
- PICES members: Canada, Japan, the People's Republic of China, the Republic of Korea, the Russian Federation, and the United States of America
- PICES mission:
  - *To promote and coordinate marine scientific research in the North Pacific Ocean in order to advance scientific knowledge of the area concerned and of its living resources*



# PICES THEMES

The PICES Strategy has 5 central themes:

1. *Advancing scientific knowledge*
2. *Applying scientific knowledge*
3. *Fostering partnerships*
4. *Developing capacity for ocean observing, collaborating, and education/training*
5. *Ensuring a progressive organization in support of PICES activities*

[www.pices.int](http://www.pices.int)



# PICES ECOSYSTEM INDICATOR-RELATED ACTIVITIES

North Pacific Marine Ecosystem Status Reports

2 have been produced to date: 2005, 2010. Available at

[http://www.pices.int/publications/special\\_publications/default.aspx](http://www.pices.int/publications/special_publications/default.aspx)

Working Group 28: Development of Ecosystem Indicators to  
Characterize Ecosystem Responses to Multiple Stressors

[http://www.pices.int/members/working\\_groups/wg28.aspx](http://www.pices.int/members/working_groups/wg28.aspx)

Section on *Human Dimensions of Marine Systems*

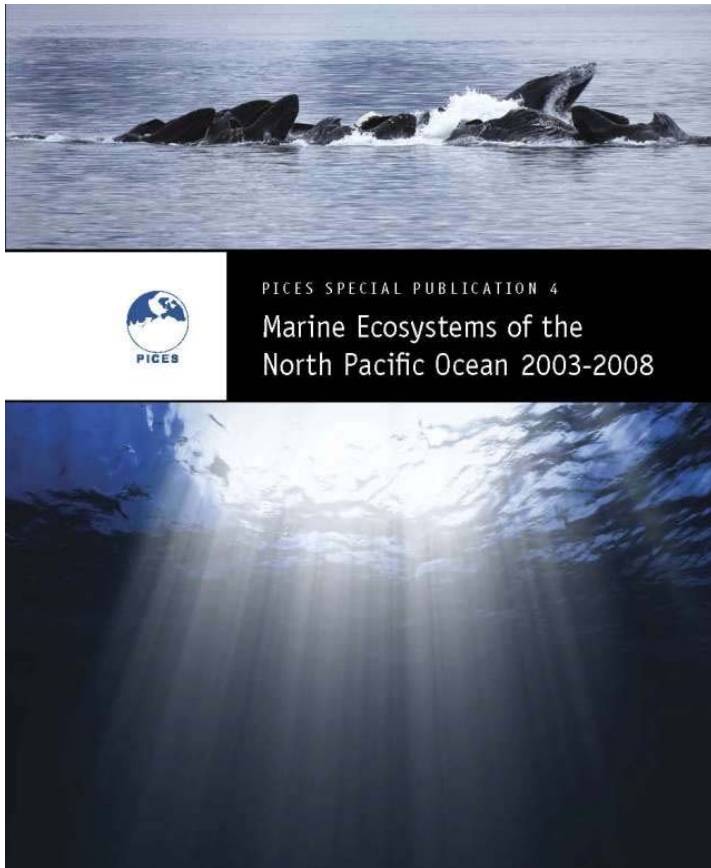
<http://www.pices.int/members/sections/S-HD.aspx>



PICES

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# North Pacific Ecosystem Status Report, 2010



## Chapters:

## Chapter sub- headings

[Synthesis](#)

[Oceanic](#)

[California Current](#)

[Alaska Current](#)

[Bering Sea](#)

[Sea of Okhotsk](#)

[Oyashio](#)

[Kuroshio](#)

[Yellow and East China Seas](#)

Highlights

Introduction

Large-scale Indices

Oceanography

Phytoplankton

Zooplankton

Fishes and Invertebrates

Marine Birds and Mammals

References

# PICES ECOSYSTEM INDICATOR-RELATED ACTIVITIES

Terms of Reference for **Working Group 28** relevant to this workshop include:

Identify and **characterise multiple pressures and activities** on North Pacific marine ecosystems

Review **indicator-selection criteria**,

**Identify categories of indicators** to document status and trends of ecosystem change at an appropriate spatial scale,

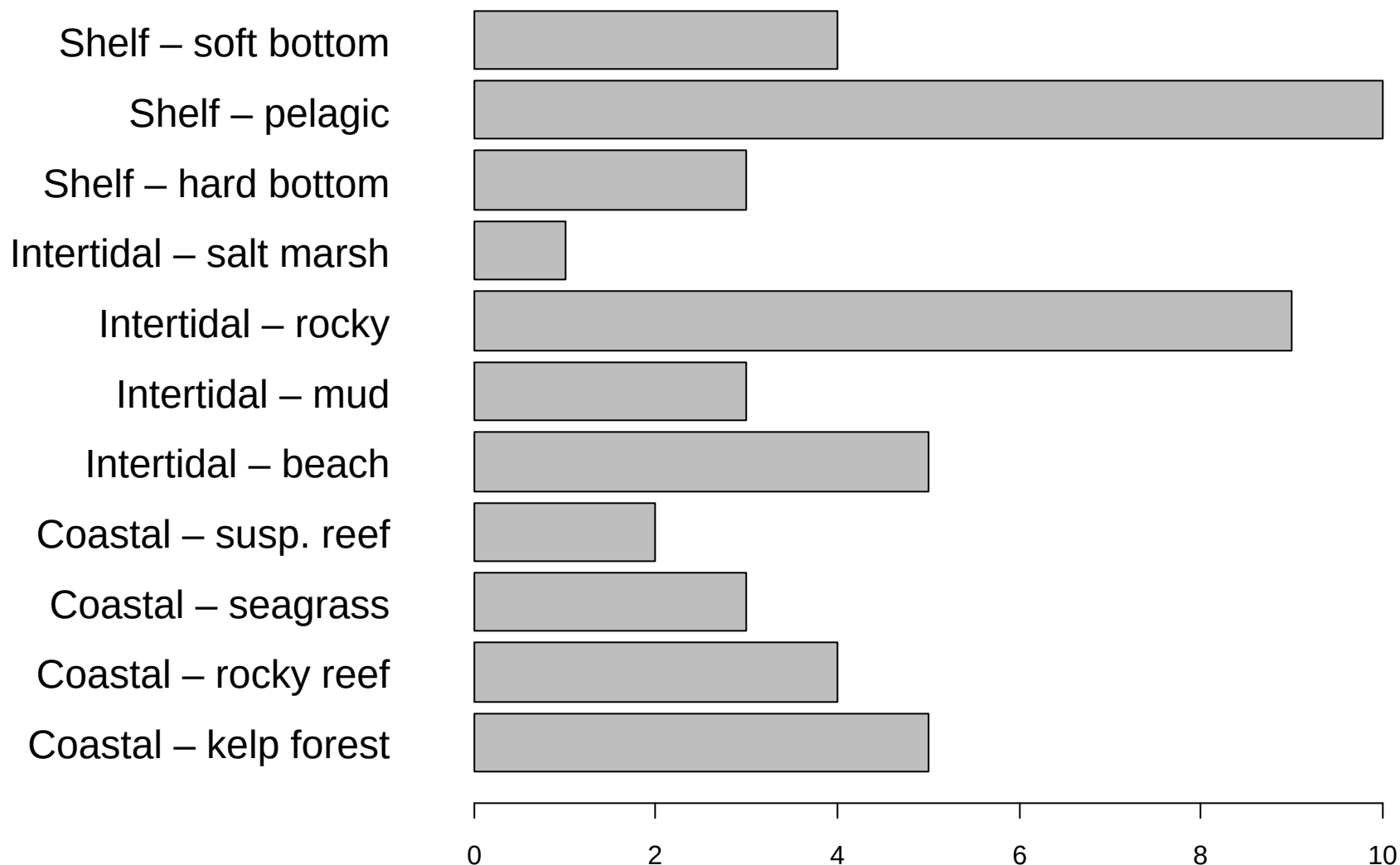
Review potential **sources of data available**

Review **approaches** for developing and evaluating indicators of responses to multiple stressors.

The **Section on the Human Dimensions of Marine Systems** is doing similar work, but with a focus on indicators of human activities relevant to marine ecosystems in the North Pacific

## Multiple stressors in the North Pacific (20 stressors x 22 habitats)

Number of stressors identified per habitat type Strait of Georgia – expert opinion survey



[https://www.yunbaogao.cn/report/index/report?reportId=5\\_12329](https://www.yunbaogao.cn/report/index/report?reportId=5_12329)

预览已结束，完整报告链接和二维码如下：



## Categories

Warning) or tipping points

fishery, fishing, habitat, eutrophication, hazardous  
water quality or quantity, air quality, human health  
and socio-economic-political

climate, population, ecosystem, landscape  
diagnostic, descriptive and management