NORTH PACIFIC MARINE SCIENCE ORGANIZATION

Study Group: North Pacific Ecosystem Status Report SG-NPESR3

A Reference Frame of Environmental Time Series Observations for Detecting Change in North Pacific Ecosystems;

North Pacific Ecosystem Status Report

Phillip R. Mundy, Peter Chandler, J. Anthony Koslow,

Vladimir Kulik, Se-Jong Ju and Hiroya Sugisaki

Session 1: Science Board Symposium

November 8, 2016

PICES 25th Anniversary Annual Meeting

San Diego, California USA

NORTH PACIFIC MARINE SCIENCE ORGANIZATION

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Study Group North Pacific Ecosystem Status Report Meeting

November 4, 2016

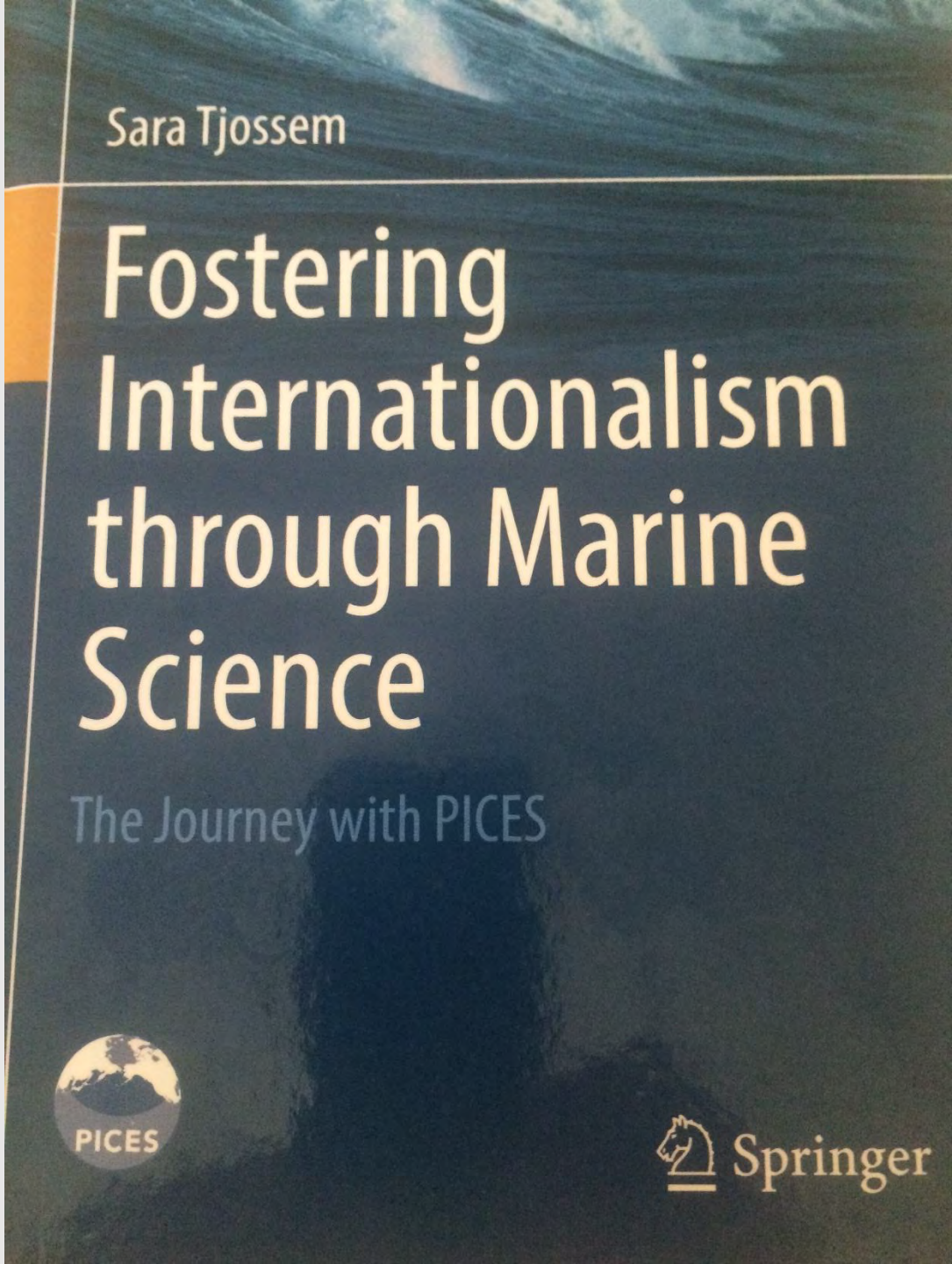
San Diego, California USA

- How can the PICES scientific community best inform other sectors of society about the extent of changes in the ecosystems of the North Pacific?
- What are the tools and approaches necessary for PICES to indefinitely sustain its role of providing scientific advice on North Pacific ecosystems?
- How do we build the next generation North Pacific Ecosystem Status Report?

PICES history;

“The first advice was generated from within the organization, as a showcase of what the organization was uniquely positioned to provide; to assess trends and predict changes in marine ecosystems of the North Pacific”

Tjossem (2017)



Where did the **next generation** concept originate?

Technical Committee on Data Exchange TCODE (1995)

Technical Committee on Monitoring MONITOR (2004)

North Pacific Ecosystem Status Reports (2004, 2011)

2011

PICES SPECIAL PUBLICATION 4

Marine Ecosystems of the North Pacific Ocean 2003-2008

2004

PICES SPECIAL PUBLICATION

Marine Ecosystems of the North Pacific

PICES

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Publications

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- PICES Press
- Book of Abstracts
- Presentations

- Feedback

Advice from TCODE + MONITOR + NPESR 1 and 2

1. **Gather information** in the form of narratives and graphics; make **data optional**
2. **Web based** exchange of international information among PICES nations is feasible
3. **Environmental Time Series Observations, ETSOs**, capable of detecting change are available from **all nations**, **all disciplines**, and in some localities and disciplines the volume of ETSOs may be very large
4. **Reduce labor** required to produce an ecosystem status report
5. Production of **more timely information** on ecosystem status is also desirable

SG-NPESR3 Recommendations Accepted by Science Board

- **A web site** of national and international environmental time series observations **"ETSOs" that build the next generation NPESR,**

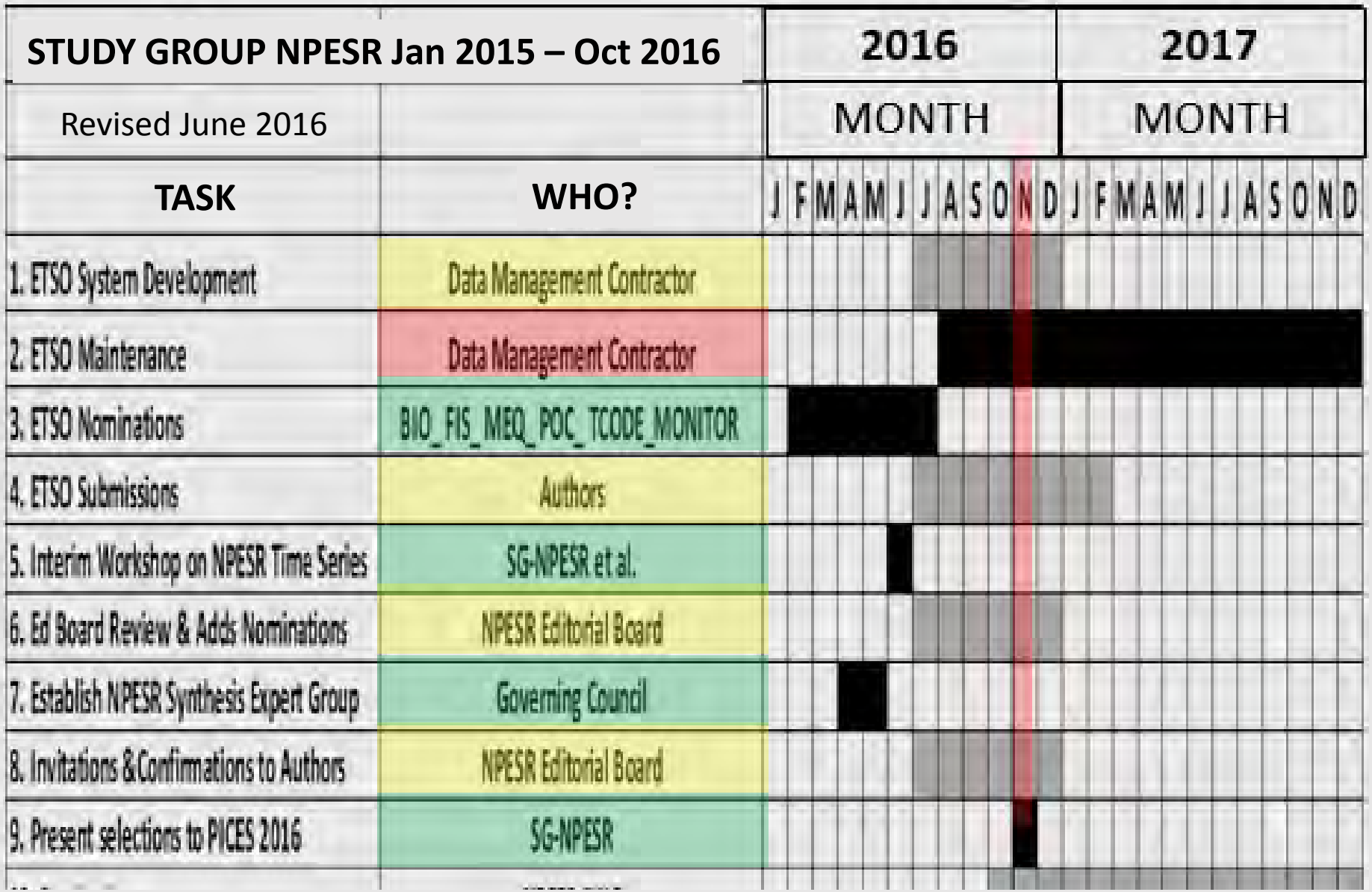
- PICES supports .. **software for receiving and processing ecosystem time series observations,**

- A working group .. **to include an editorial board of Committee Chairs or their designates,**

- The working group .. **to work with the authors of the individual ETSOs to develop regional syntheses, culminating in a North Pacific synthesis.**

NORTH PACIFIC MARINE SCIENCE ORGANIZATION

Study Group: North Pacific Ecosystem Status Report



Study Group: North Pacific Ecosystem Status Report

WORKING GROUP NPESR Approved May 2016		2016 MONTH											2017 MONTH										
TASK	WHO?	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
10. Synthesis	NPESR SWG																								
11. North Pacific Synthesis Workshop	NPESR SWG et al.																								
12. Editing	NPESR SWG, NPESR Editorial Board																								
13. Formatting NPESR	Data Management Contractor																								
14. Review and Adoption NPESR	NPESR Editorial Board																								

Revised June 2016

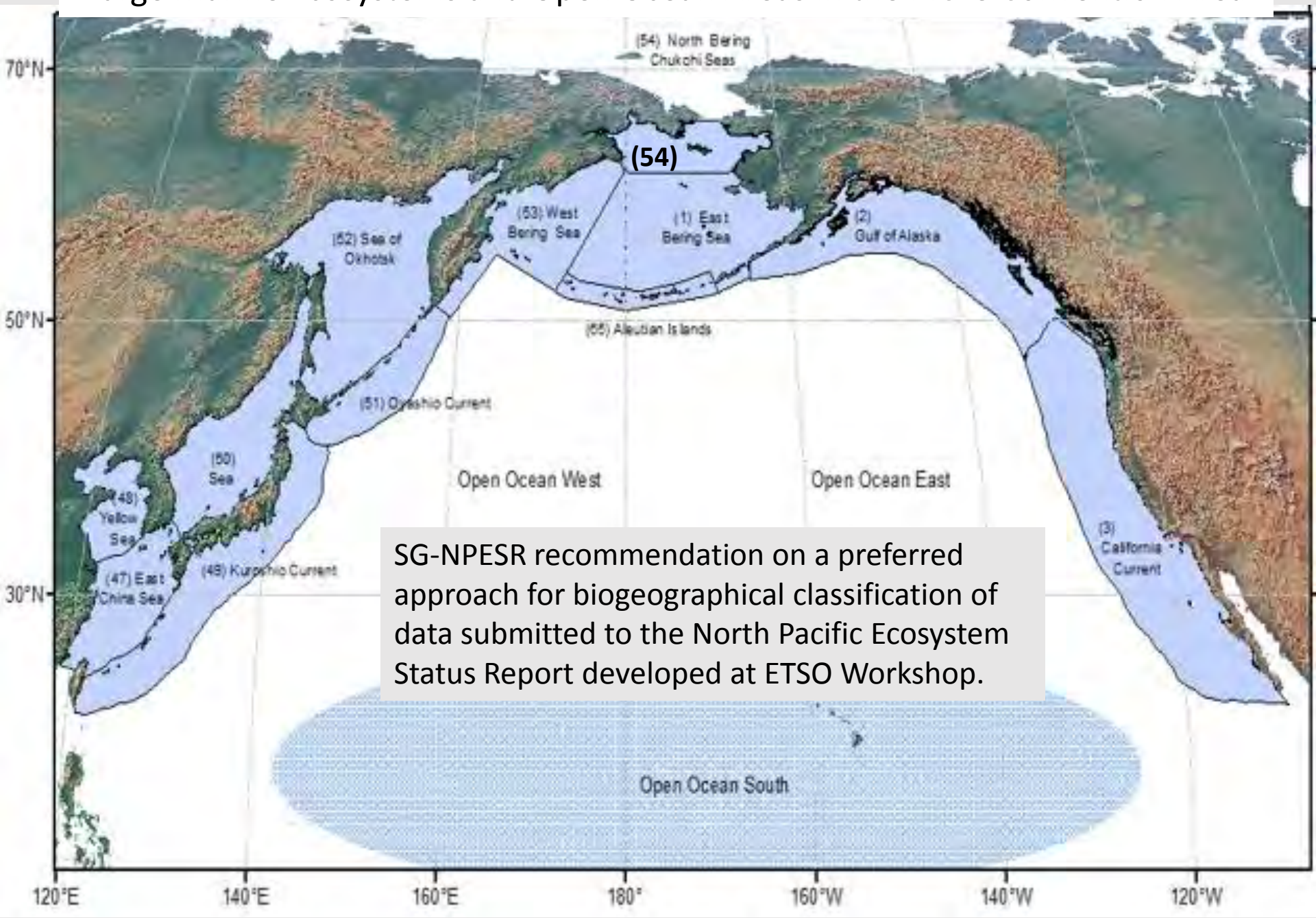
PICES INTERSESSIONAL WORKSHOP

North Pacific Ecosystem Status Report, Third Edition (NPESR-3)

Invitational Workshop: Evaluation and Synthesis North Pacific Time Series Observations

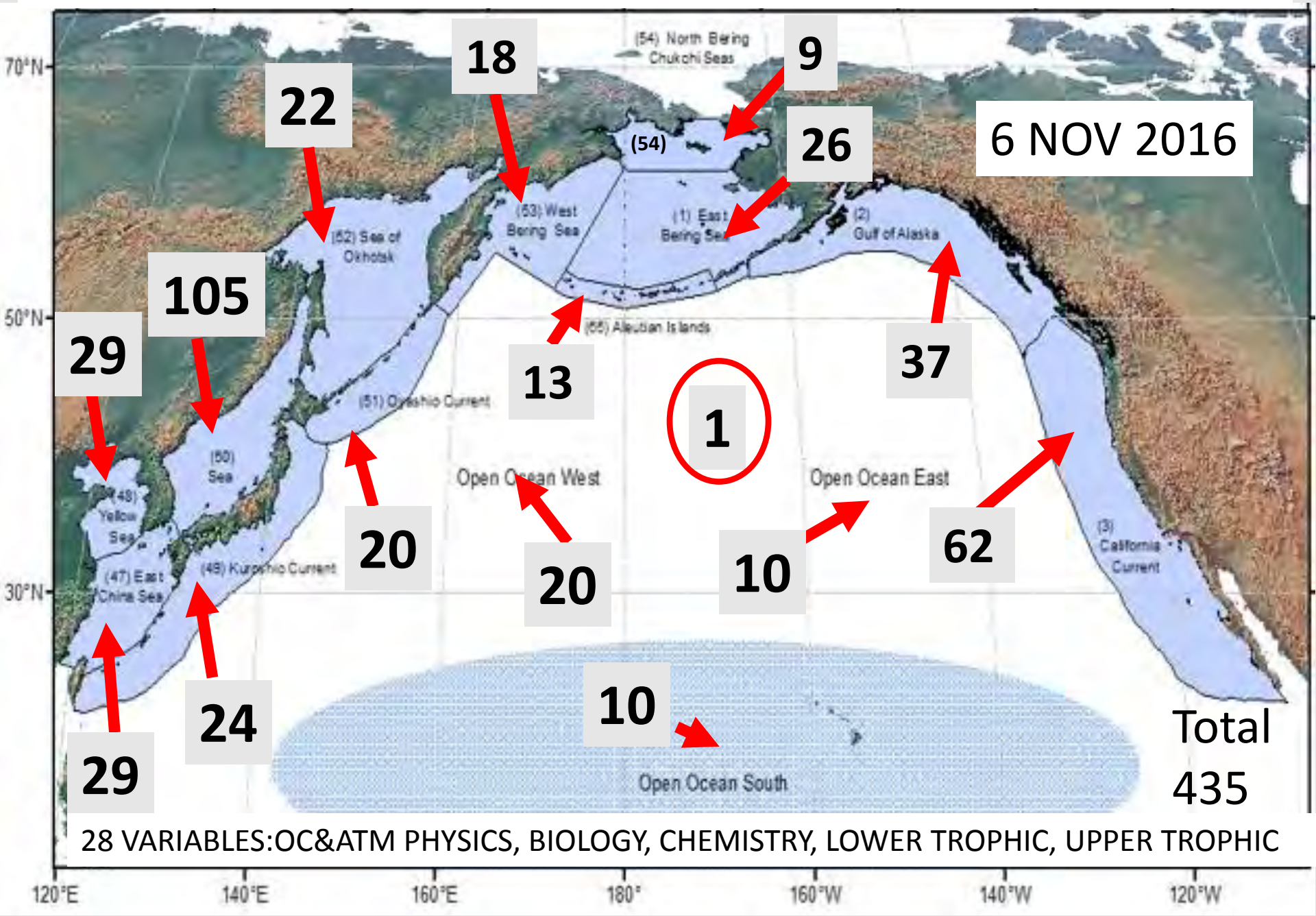
June 28 – 30, Sidney BC Canada

Large Marine Ecosystems and Open Ocean Areas in the PICES Convention Area



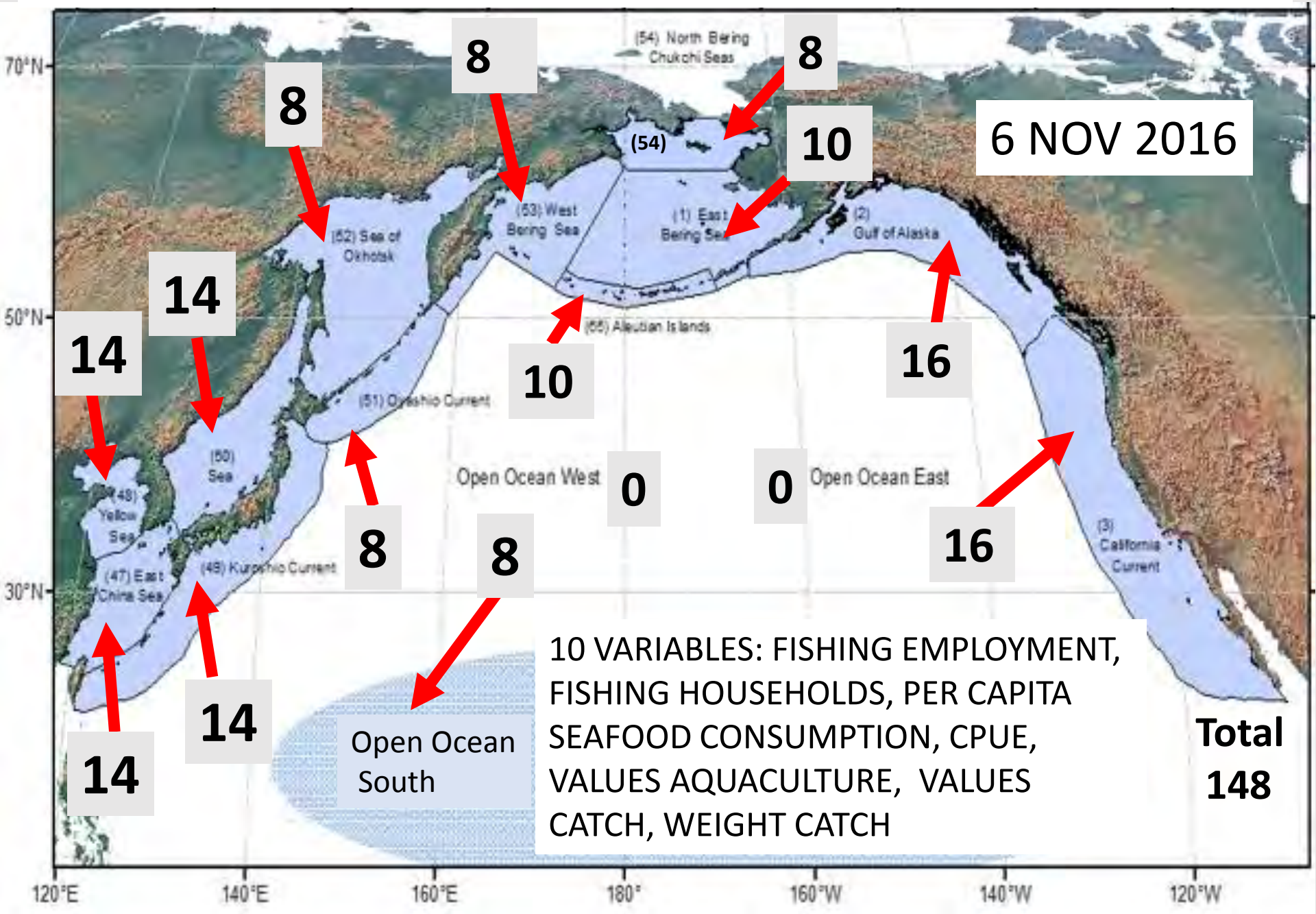
SG-NPESR recommendation on a preferred approach for biogeographical classification of data submitted to the North Pacific Ecosystem Status Report developed at ETSO Workshop.

Numbers ETSOs All Sources (Committees, S Human Dimensions, WG-31 Pollution)

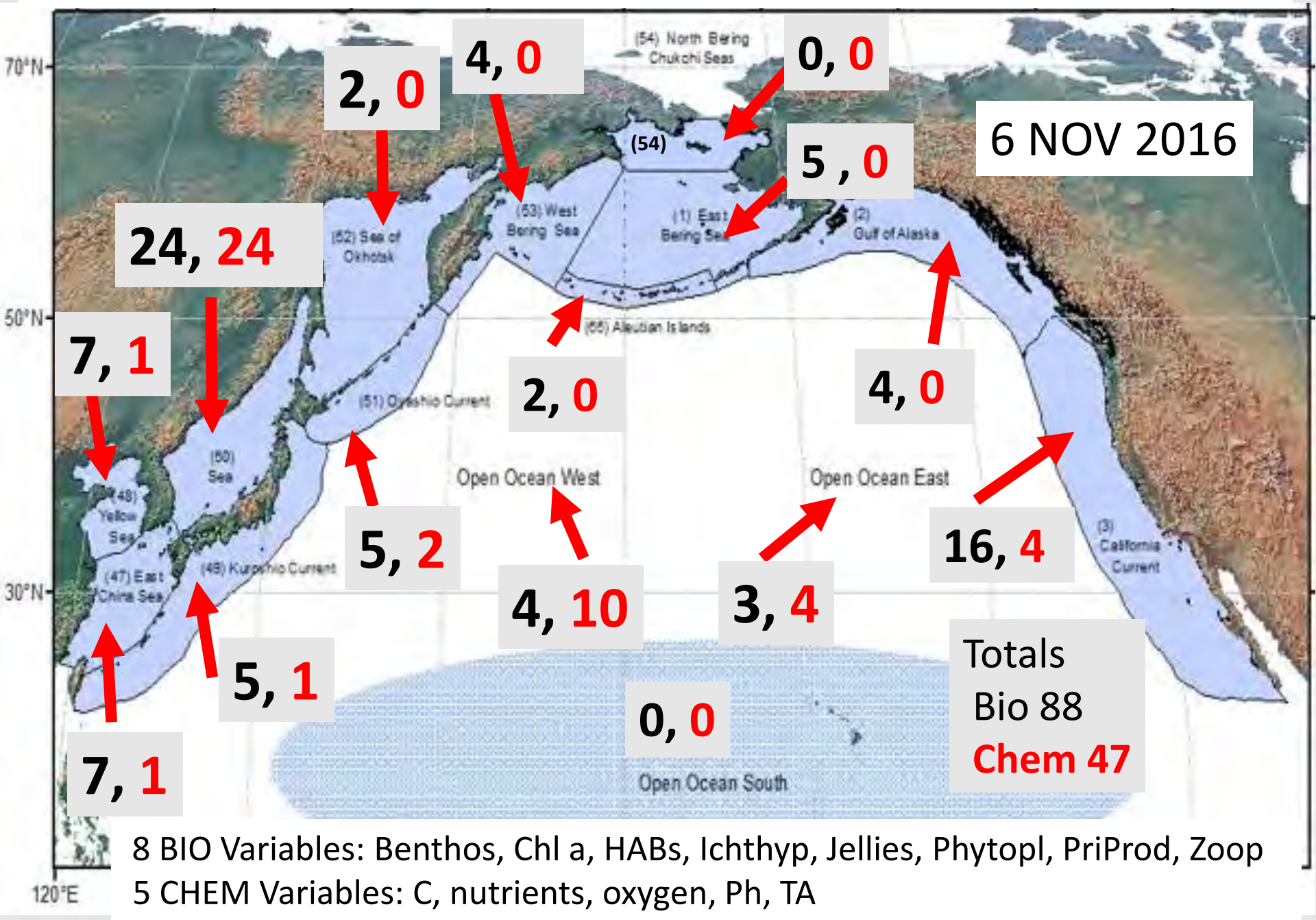


28 VARIABLES:OC&ATM PHYSICS, BIOLOGY, CHEMISTRY, LOWER TROPHIC, UPPER TROPHIC

Numbers ETSOs HUMAN DIMENSIONS



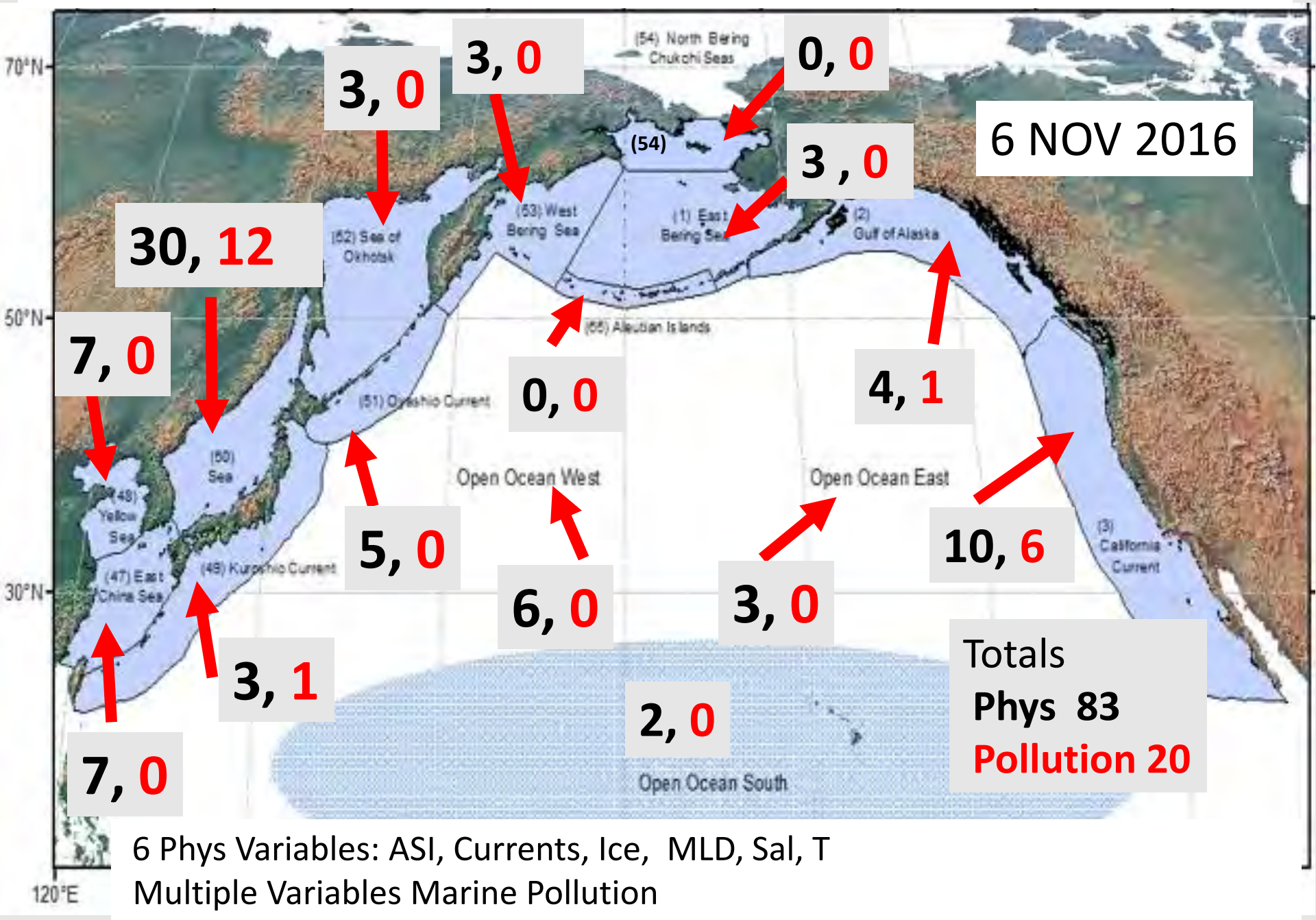
Numbers ETSOs Biological, Chemical Oceanography



8 BIO Variables: Benthos, Chl a, HABs, Ichthyp, Jellies, Phytopl, PriProd, Zoop

5 CHEM Variables: C, nutrients, oxygen, Ph, TA

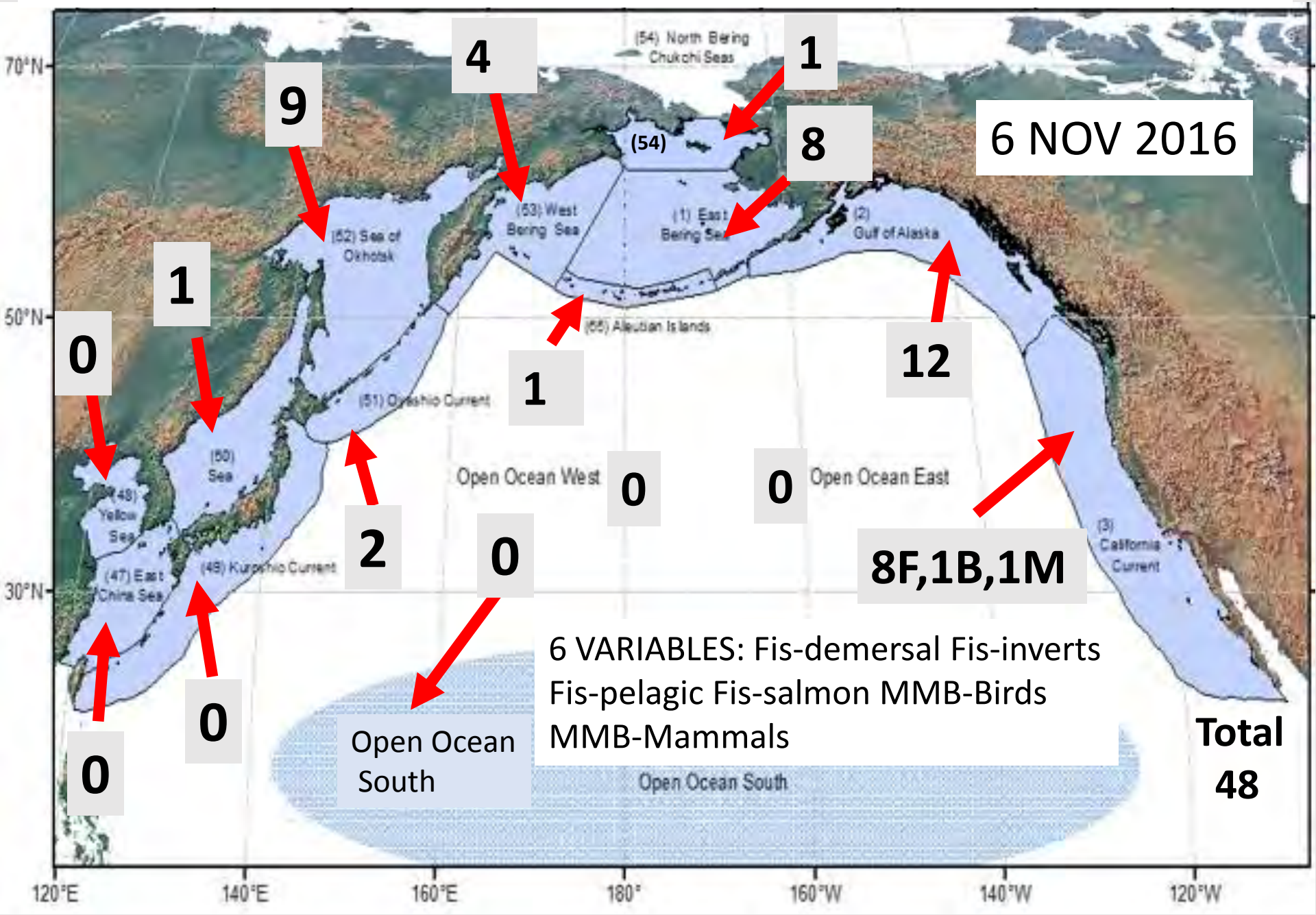
Numbers ETSOs Physical, Marine Pollution



6 Phys Variables: ASI, Currents, Ice, MLD, Sal, T

Multiple Variables Marine Pollution

Numbers ETSOs Fish, Birds, Mammals



ETSOMS
ENVIRONMENTAL TIME SERIES OBSERVATION MANAGEMENT SYSTEM

Step 1. Online **user interface** to a data management system that organizes ETSOs into an **ETSO data base**.

Step 2. Queries of the data base can **produce summaries and basic reports** that serve the needs of the newly formed NPESR Work Group

Step 3. NPESR Work Group including Editorial Board **use the system** to provide online reports, develop syntheses, prepare third edition.

PICES ETSO Data Management System
Example:
Researcher submitting ETSO

The human impact on the mercury accumulation in modern sediments of Amur Bay, the Japan/East Sea

Kirill Aksentov[1] [1]V.I. Il,ichev Pacific Oceanological Institute Far Eastern Branch Russian Academy of Science (POI FEB RAS), 43 Baltiyskaya Street, Vladivostok, Russia (aksentov@poi.dvo.ru)

It is important to study the processes of the distribution and migration of mercury in the environment because of its high toxicity. Since the onset of the industrial period anthropogenic emissions of mercury have increased and its global cycling have been significantly altered (Fitzgerald et al., 2007; Schuster et al., 2002). The Amur Bay has been being exposed to the intense anthropogenic influence since the middle of the 20th century. The sources of pollutants are the industrial discharges of the enterprises located in the Razdol'naya River basin and on the Murav'ev-Amurskii Peninsula (Vladivostok city). This study investigates the reconstruction of mercury accumulation in bottom sediments of Amur Bay.

TYPICAL ABSTRACT FORMAT
PREPARED FOR CUT AND PASTE

TITLE
AUTHOR
CONTACT INFORMATION
ABSTRACT

PLUS FIGURES AND REFERENCES
DATA ATTACHMENT OPTIONAL

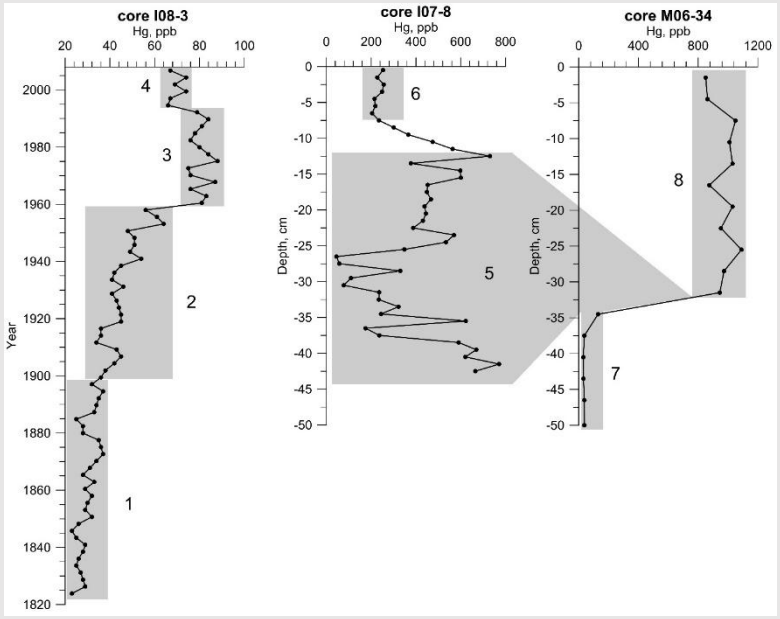
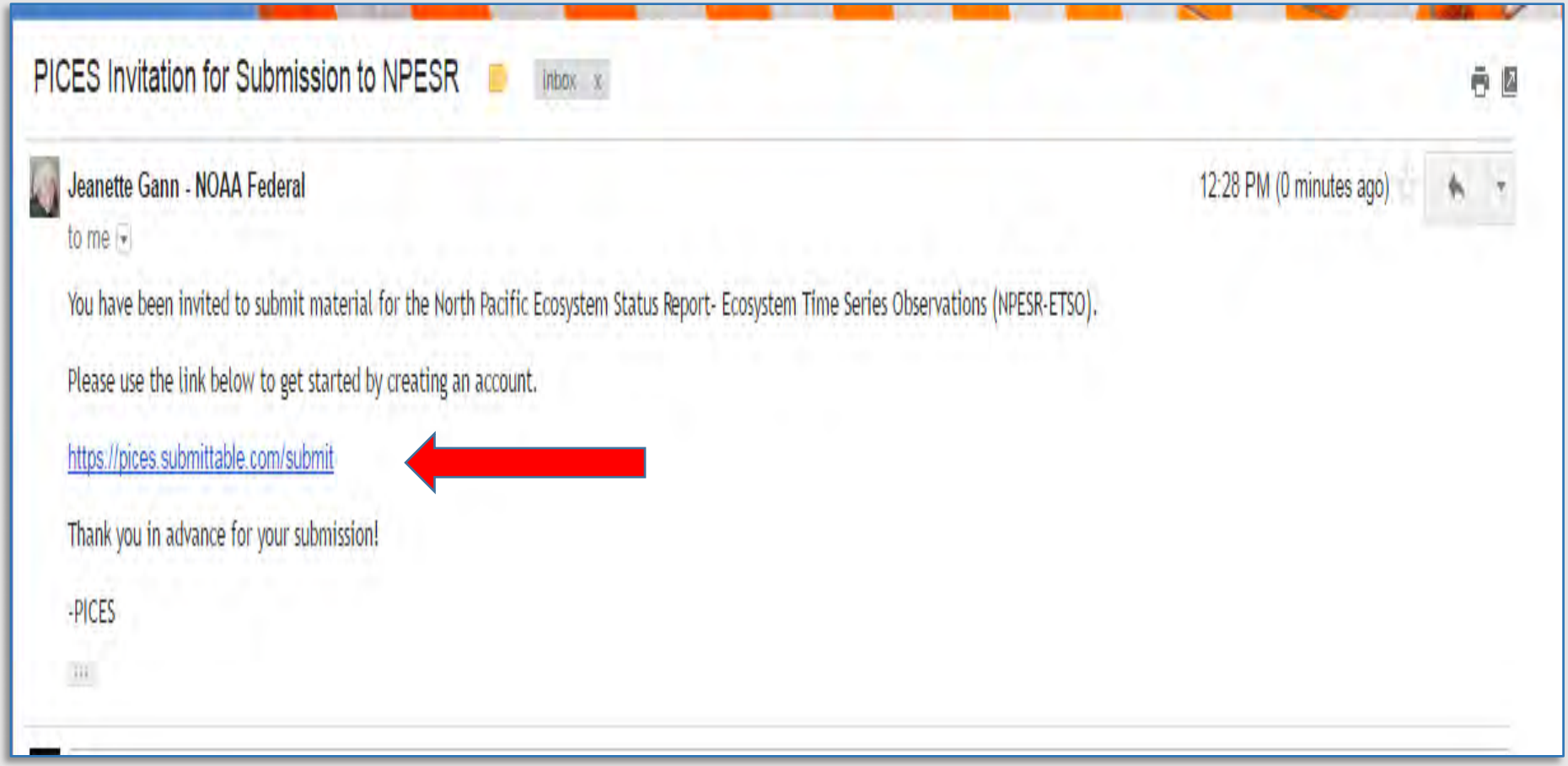


Figure 1. Vertical profiles of total mercury concentrations in the sediment cores from the Amur Bay (I08-3, I07-8) and the Zolotoi Rog Bay (M06-34). 1, 7 – background concentration; 2 – moderate impact, 3, 5 – intensive contamination; 4, 6, 8, - recent level.

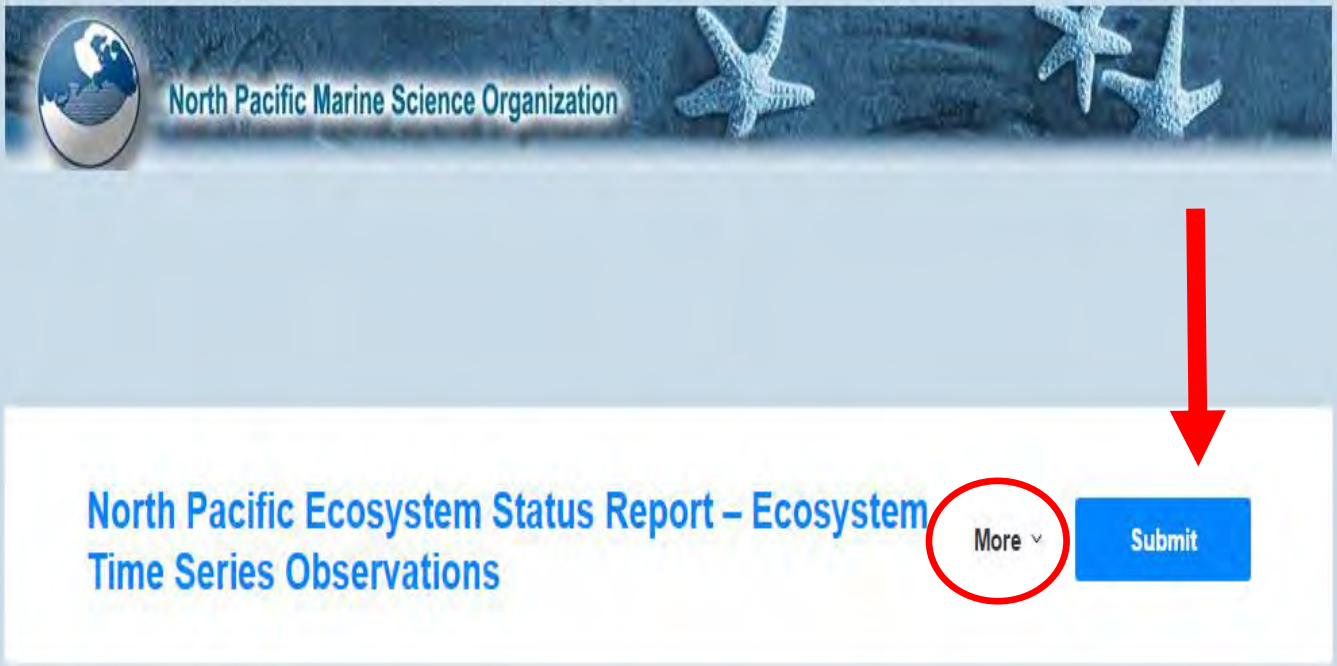
References

Researcher – Invitation to Submit

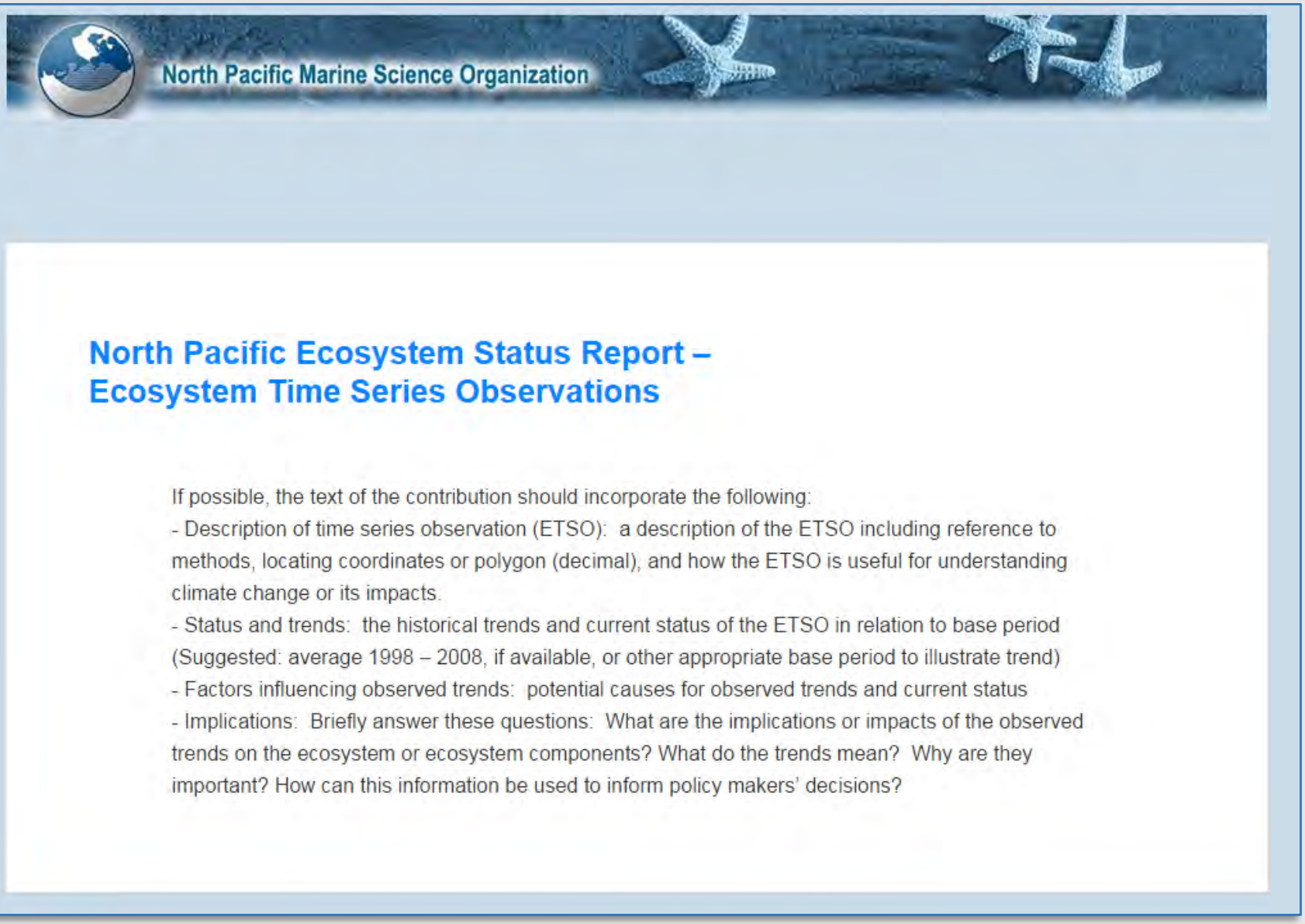
- Link from PICES Website
- Email invitation



Landing page from email link



Instructions under ‘more’ from first page



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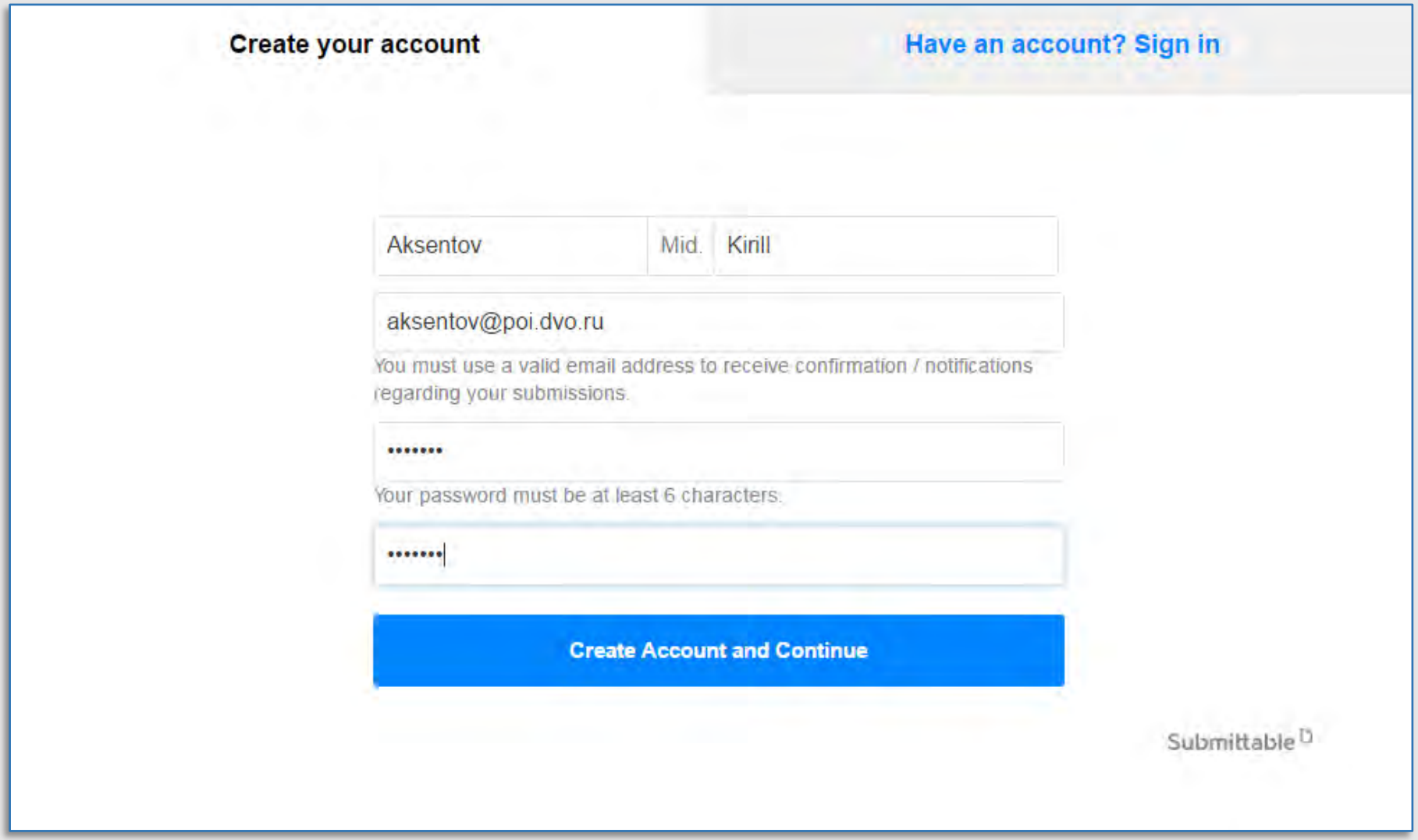


The form for submitting an ETSO, first page

Title *

The human impact on the mercury accumulation on modern sediments of Amur

Enter a title for your submission

NPESR Geographic Location *

Sea of Okhotsk

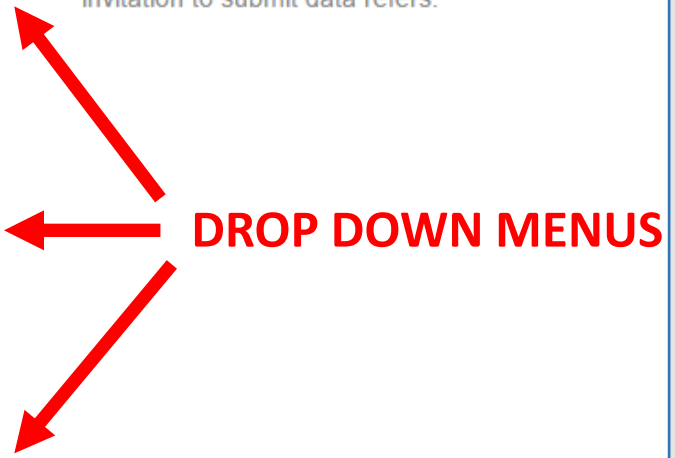
The geographic unit to which the invitation to submit data refers.

PICES Committee

MEQ - Marine Environmental Quality Committee

Nation

Russia



Form for submitting an ETSO, 2nd page, author's information

Contributed By:

Aksentov et al.

Contact Author: *

Kirill Aksentov

First and Last name of author to contact with questions.

Contact Author Address:

Mailing address, including nation

Contact Author email:

aksentov@poi.dvo.ru

email address of Contact Author

Form for submitting an ETSO, 3rd page

Body of Contribution *

Acceptable file types: **pdf, doc, docx, txt, rtf, jpg, gif, mp3, mp4, m4a, zip, tiff, png, wpf, odt, wav, mov, xls, wpd, ppt, pptx, avi, mpg, xlsx, sib, mus, 3gp, flv, webm, psd, ai, mobi, epub, wmv, eps, key, ogg, aac, flac, aiff, wma, mkv, musx, ibooks, iba, tex, bbl, ltx, m4v, svg, fdx.**

Choose Files

Upload a file containing the body of your contribution.

Select up to 8 files to attach.
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FILE UPLOADS

Figure(s) and/or Table(s) that illustrate the ETSO

Acceptable file types: **pdf, doc, docx, txt, rtf, jpg, gif, mp3, mp4, m4a, zip, tiff, png, wpf, odt, wav, mov, xls, wpd, ppt, pptx, avi, mpg, xlsx, sib, mus, 3gp, flv, webm, psd, ai, mobi, epub, wmv, eps, key, ogg, aac, flac, aiff, wma, mkv, musx, ibooks, iba, tex, bbl, ltx, m4v, svg, fdx.**

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Upload figures and tables as jpg, png, or pdf in highest resolution possible. Tables and figures are formatted for journal publication with axes suitably and legibly labeled.

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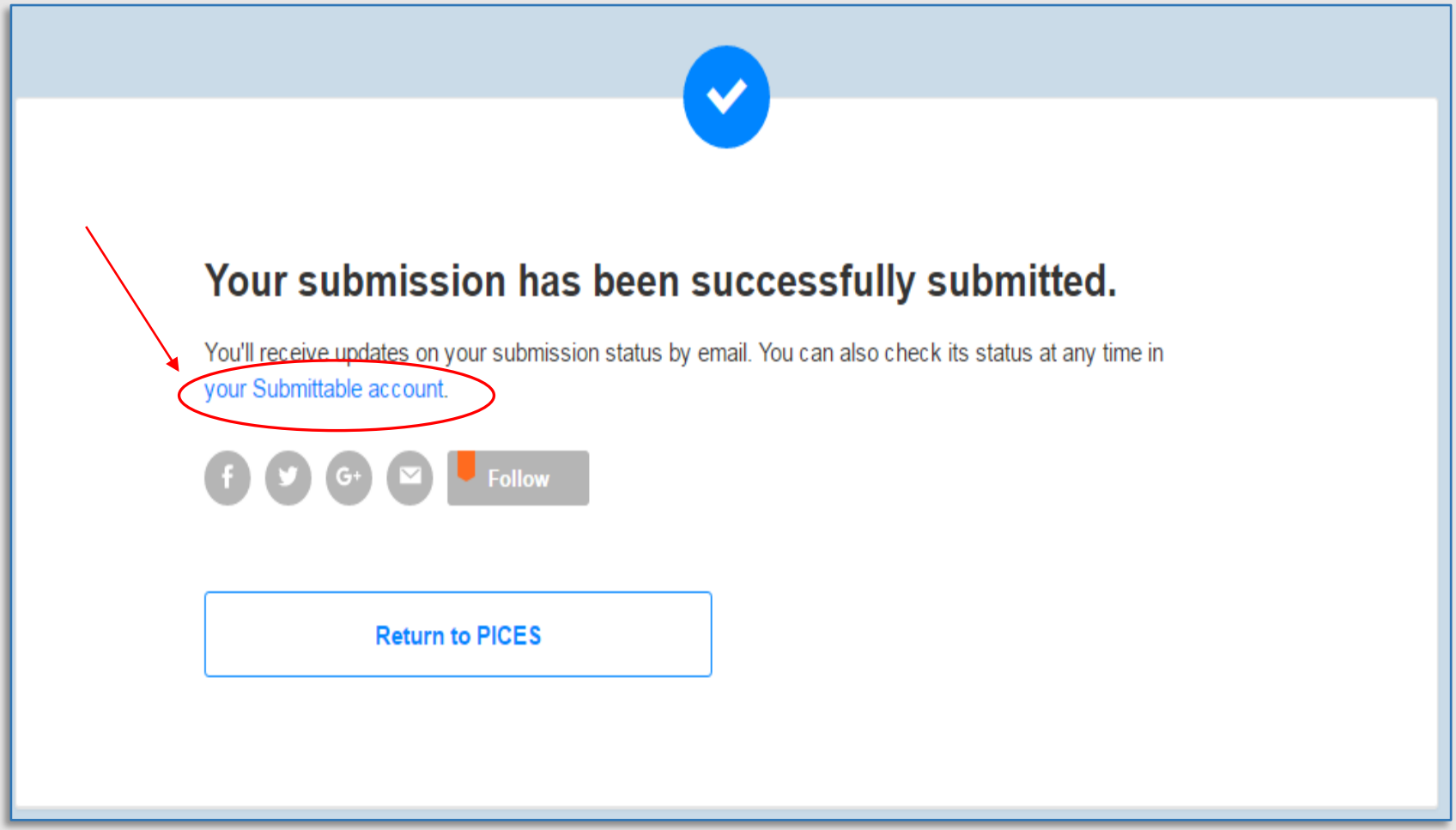

[PICES] Your submission has been received

caroline=submittable.com@email.sub... Actions

To: Chandler, Peter

Inbox Tuesday, October 25, 2016 2:45 PM

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Dear Peter,

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You can review your submission online by going here:

http://pices.submittable.com/user/submissions/6600118

Thanks!

-PICES.

Proposed Next Steps

- Invitations, confirmations to authors through (Dec 2016)
- ETSO Submissions by authors through (Feb 2017)
- Nominations to WG-NPESR
- WG-NPESR review and add ETSOs
- North Pacific Synthesis Workshop (Apr or May 2017)
- Synthesis through (Dec 2017)
- Publications (web based, printed reports with ISBN, special volumes in peer-reviewed science literature) starting in (2018)

END PRESENTATION

QUESTIONS ?