

# The North Pacific CPR Survey

Introduction and history

Sonia Batten

PICES Annual Meeting, October 18<sup>th</sup> 2019

- CPR basics
- Initiation of the North Pacific Survey
- Where are we now, 20 years later?



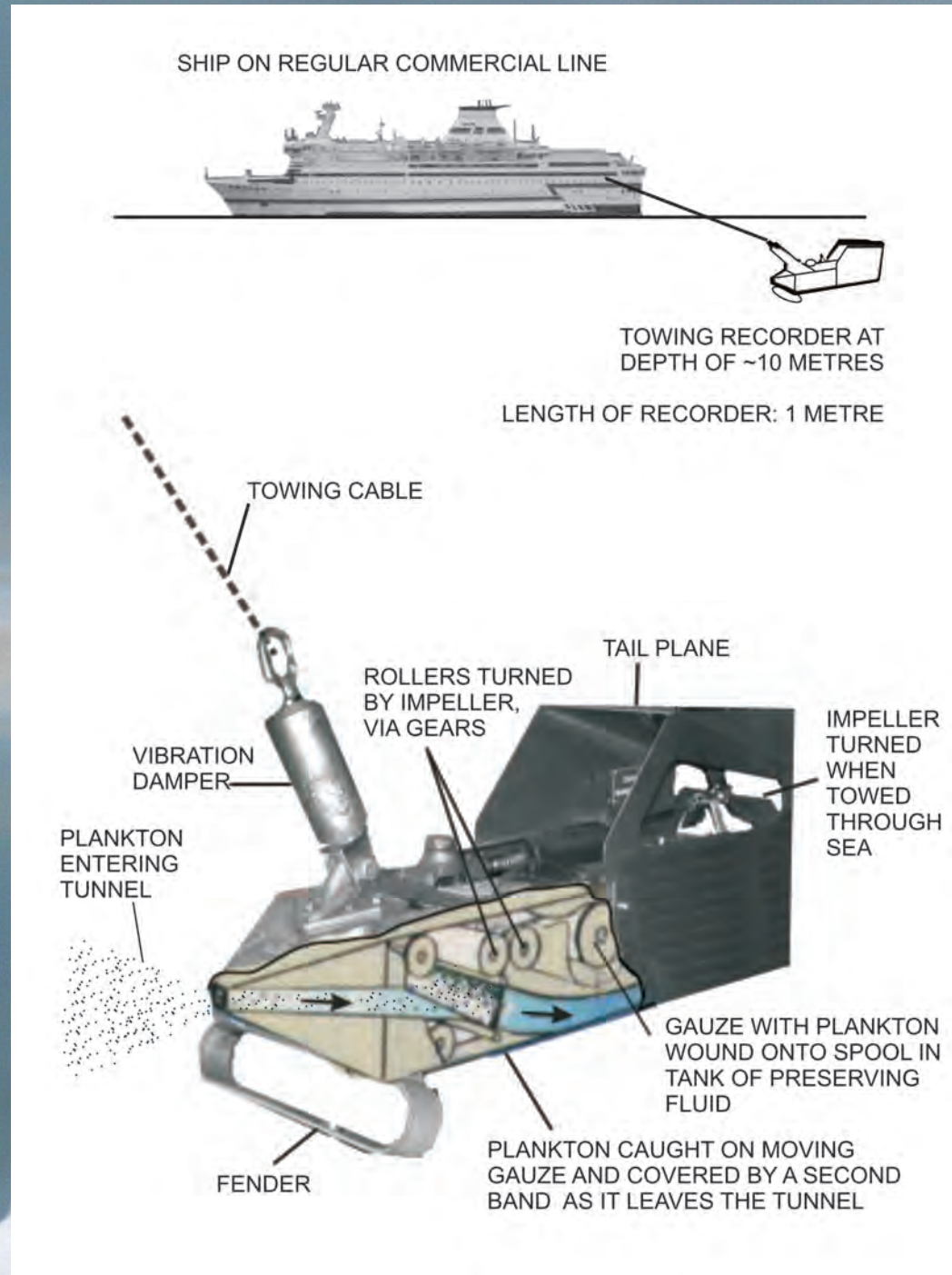
## CPR basics

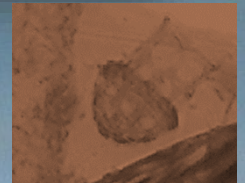
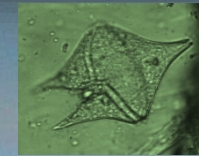
The instrument was designed by Alister Hardy in the 1920's



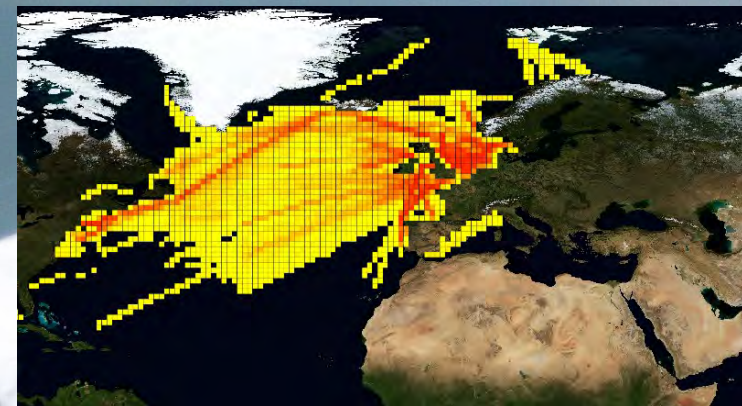
# What is a CPR?

- A robust device for collecting surface plankton over large spatial scales
- capable of operating at high speeds (>20 knots)
- needs a minimum of attention
- designed for “ships of opportunity”





After sampling, the mesh is cut into discrete 18km samples  
Microscopically analyzed to give taxonomically resolved abundances of large phytoplankton, micro- and mesozooplankton.  
80+ years of sampling in the North Atlantic:



# North Pacific Survey History

*Vision - T.R. Parsons, Canada. A proposal for a trans-Pacific Continuous Plankton Recorder (CPR) program.*

Pilot - In August 1997 a one-off pilot transect was operated from California to Alaska by the North Atlantic CPR organization, SAHFOS.

Invited by MONITOR Technical Committee to PICES 1998 meeting

First routine transects started in 2000.

NORTH PACIFIC MARINE SCIENCE ORGANIZATION (PICES)

ANNUAL REPORT

1st MEETING  
OCTOBER 1992

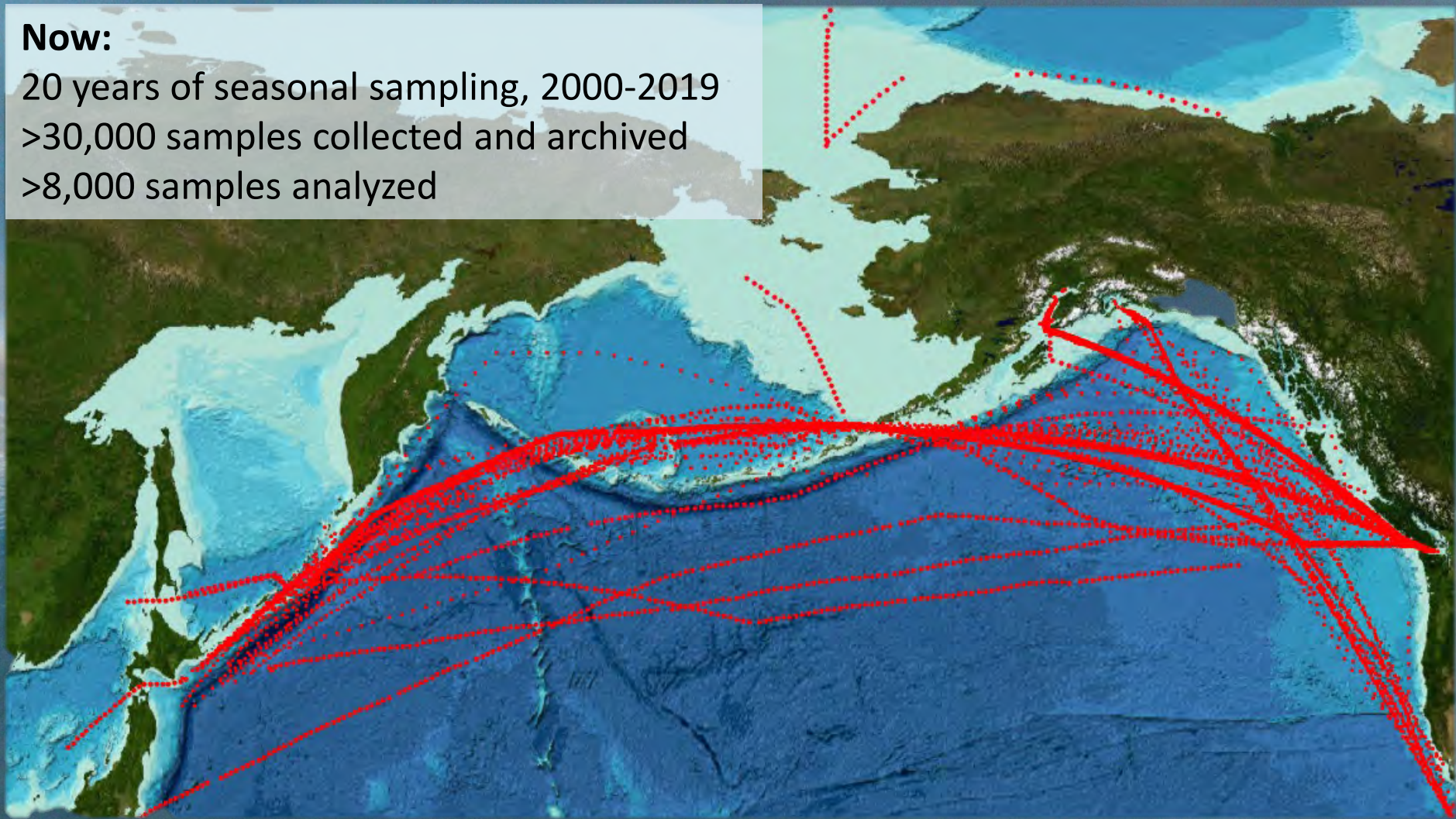


**Now:**

20 years of seasonal sampling, 2000-2019

>30,000 samples collected and archived

>8,000 samples analyzed



Funding has been achieved since 2003 through a consortium approach, with PICES receiving the funds from North American organizations.



MBA provide most of the expertise.  
DFO also provide lab facilities.



Japanese colleagues support western Pacific sample analysis.



Exxon Valdez  
Oil Spill Trustee Council



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada



Thank you!



# Outputs

~30 peer-reviewed papers (using both data and samples)

Freely available data, accessible through PICES website

Contributions to regular assessments:

State of the Physical, Biological and Selected Fishery Resources of Pacific Canadian Marine Ecosystems in 2017

Peter C. Chandler, Stephanie A. King and Jennifer Dokk (Editors)

Fisheries & Oceans Canada  
Pacific Biological Station  
3190 Hammond Bay Road  
Nanaimo, B.C. V9T 6N7  
Canada

2018

Canadian Technical Report of Fisheries and Aquatic Sciences 3266

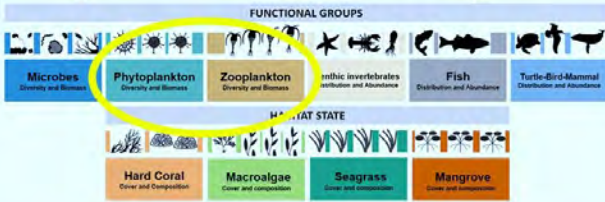
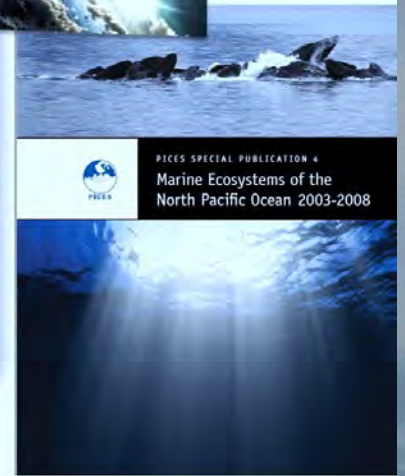


Alaska Marine Ecosystem Status Reports

Home Data Assessments Report Cards Noteworthy Links

Ecosystem Status Reports are produced annually to compile and summarize information about the status of the Alaska marine ecosystems for the North Pacific Fishery Management Council, the scientific community and the public. As of 2016, there are separate reports for the Eastern Bering Sea (updated 2015), Aleutian Islands (updated 2015), the Gulf of Alaska (updated 2015), and Arctic (forthcoming) ecosystems. These reports include ecosystem report cards, ecosystem assessments, and ecosystem and ecosystem-based management indicators that together provide context for ecosystem-based fisheries management in Alaska.

<b>Eastern Bering Sea</b> <ul style="list-style-type: none"><li>Executive Summary</li><li>Assessment</li><li>Report Card</li><li>Noteworthy (Formerly Hot Topics)</li><li>Full Report (pdf)</li><li>EBR in Brief (pdf)</li></ul>	<b>Aleutian Islands</b> <ul style="list-style-type: none"><li>Executive Summary</li><li>Assessment</li><li>Report Card</li><li>Noteworthy (Formerly Hot Topics)</li><li>Full Report (pdf)</li></ul>
<b>Gulf of Alaska</b> <ul style="list-style-type: none"><li>Executive Summary</li><li>Assessment</li><li>Report Card</li><li>Noteworthy (Formerly Hot Topics)</li><li>Full Report (pdf)</li></ul>	<b>Arctic (2015)</b> <ul style="list-style-type: none"><li>Assessment</li><li>Noteworthy (Formerly Hot Topics)</li><li>Full Report (pdf)</li></ul>



International Group for Marine Ecological Time Series

Analysis and synthesis of global marine ecological changes as seen through biogeochemical and plankton time series.

## Published papers include

- Single species studies
- Response of plankton to climate variability
- Trophic interactions (fish, birds)
- Biogeographical distributions, and changes, over basin scales
- Used in modelling studies to support fisheries
- Molecular analyses

Some will be reviewed here as well as today's talks and the W5 poster.

## Today:

09:55 10:35	<b>Pierre Helaouet (Invited)</b> 60 years of plankton community in the northern North Atlantic Ocean
10:35 11:05	<b>Tea/Coffee Break</b>
11:05 11:25	<b>Brian Hunt</b> Defining isoscapes in the Northeast Pacific as an index of ocean productivity
11:25 11:45	<b>Brian Allan Hoover*</b> Interannual variation in regional zooplankton community structure in the eastern North Pacific
11:45 12:05	<b>Clare Ostle*</b> Extending the North Pacific CPR Survey pole-ward into the Arctic and potential future investigations

**Yutaka Fukai\*** Seasonal abundance, population structure, and diel changes in abundance of five large dominant copepods evaluated by CPR samples collected in the western subarctic Pacific

## **And thank you also to:**

- Doug Moore and Akash Sastri, the local heroes
- The volunteer ships and shipping companies
- Analysts who work at the microscopes in the UK
- Kinnetic Labs in Anchorage for local servicing
- Today's speakers and audience, we welcome your thoughts at the discussion on future directions!

