

ICR(22)10

# BASIN-SCALE EVENTS TO COASTAL IMPACTS: AN OCEAN INTELLIGENCE SYSTEM FOR A CHANGING WORLD

*A UN Decade of Ocean Science Program Proposal by the North Pacific Marine Science Organization (PICES), the North Pacific Anadromous Fish Commission (NPAFC), and partners*

Mark Saunders (NPAFC)  
Presentation to IASRB, 5 June 2022





# UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT



**2021  
2030** United Nations Decade  
of Ocean Science  
for Sustainable Development



[Basin-scale Events to Coastal Impacts \(BECI\)](#)

An Ocean Intelligence System for a Changing World



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# UNDOS: Basin Events to Coastal Impacts Program (BECI)



- **Objective:** Develop and implement an international ocean intelligence system of monitoring, research and analytical approaches that provide timely knowledge and advice to decision makers about the impact of current and future climate on ocean conditions in high seas and coastal socio-ecological systems. Salmon will be an exemplar species but a modular approach will ultimately include all species of interest.
- **Lead organizations:** North Pacific Marine Science Organization (PICES)/North Pacific Anadromous Fish Commission
- **Partners (to be confirmed):** Pacific Salmon Foundation, Tula Foundation/Hakai Institute, International Council for the Exploration of the Sea, Pacific Salmon Commission, National Center for Ecosystem Analysis and Synthesis, Long Live the Kings, North Pacific Rim countries/agencies, North Pacific Research Board, and others.
- **Duration:** 2021-2030
- **Organization and Scale:** Proposed as special project in PICES and potential cost for the decade is \$85-\$100M (through in-kind and donations). Phase 0 planning is underway with goal to complete a science plan in the next six months and receive formal approval from PICES.
- **Transformative elements:** basin scale partnership, enhanced monitoring through the use of remote and autonomous technology, coupling of biophysical ocean models, ecosystem models and salmon life history models to inform annual to decadal predictions and projections to support management.



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# TRANSFORMATIVE ELEMENTS

- basin scale partnership
- enhanced monitoring of ocean conditions and fish distribution through the use of remote and autonomous technology, tagging and microchemistry.
- data mobilization and synthesis
- coupling of biophysical ocean models with ecosystem models and salmon life history models to inform annual to decadal predictions and projections to support management.



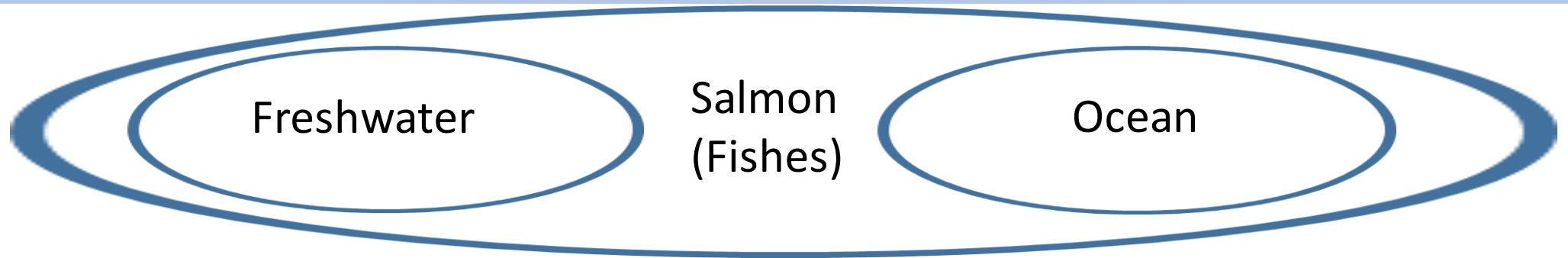
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# AN OCEAN INTELLIGENCE SYSTEM

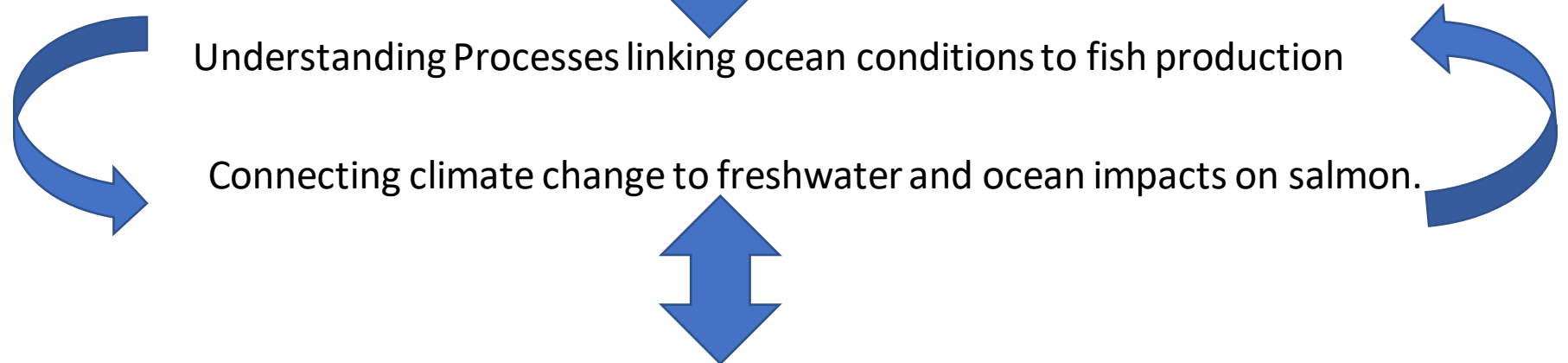
Surveillance



Data Mobilization

Modelling and Research

Decision Support & Communication



Community Impacts - Inclusion - Communication



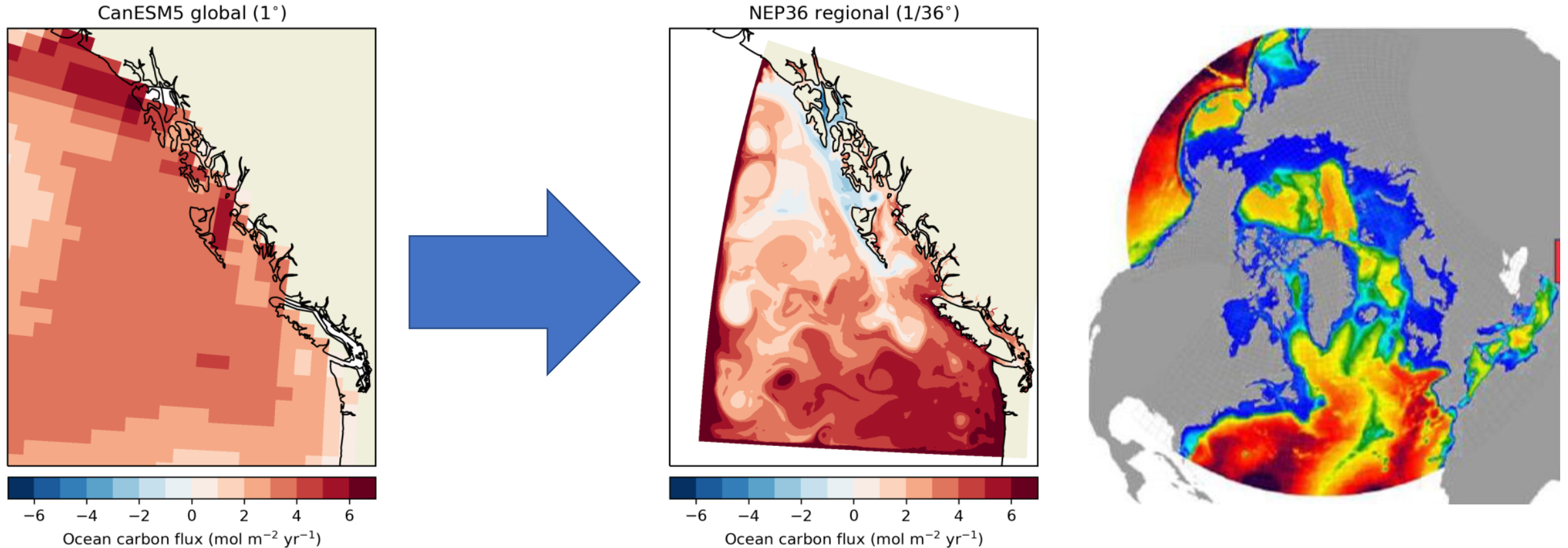
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# USING OCEAN MODELS TO UNDERSTAND MECHANISMS AND DRIVE PREDICTIONS AND PROJECTIONS



Figures from Neil Swart: Canadian Centre for Climate Modelling and Analysis, Environment and Climate Change Canada.



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# BECI TIMELINE

- **BECI Planning Phase 0 Present – September 2022**
  - Establish Interim Project Office. Tula Foundation to provide administrative support for BECI for 6-12 months
  - Develop high level BECI Implementation/Science plan through four workshops
  - Submit plan to PICES for approval as Special Project
- **Phase 1 - Detailed Planning Phase and Initial Implementation - October 2022-October 2023**
- **Phase 2 - BECI Implementation Phase October 2023-December 2030**



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# IASRB CONSIDERATIONS

- Endorsement of BECI by the UN DECADE and a strong connection between PICES and ICES in the UN DECADE through their SMARTNet Program makes engagement in BECI by Atlantic partners a ready opportunity.
- The IYS has demonstrated that salmon research and management agencies across the Northern Hemisphere share common problems and can benefit from collaboration. BECI is a significant opportunity to leverage investments by partners across the hemisphere to address the crisis we collectively face with salmon.



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