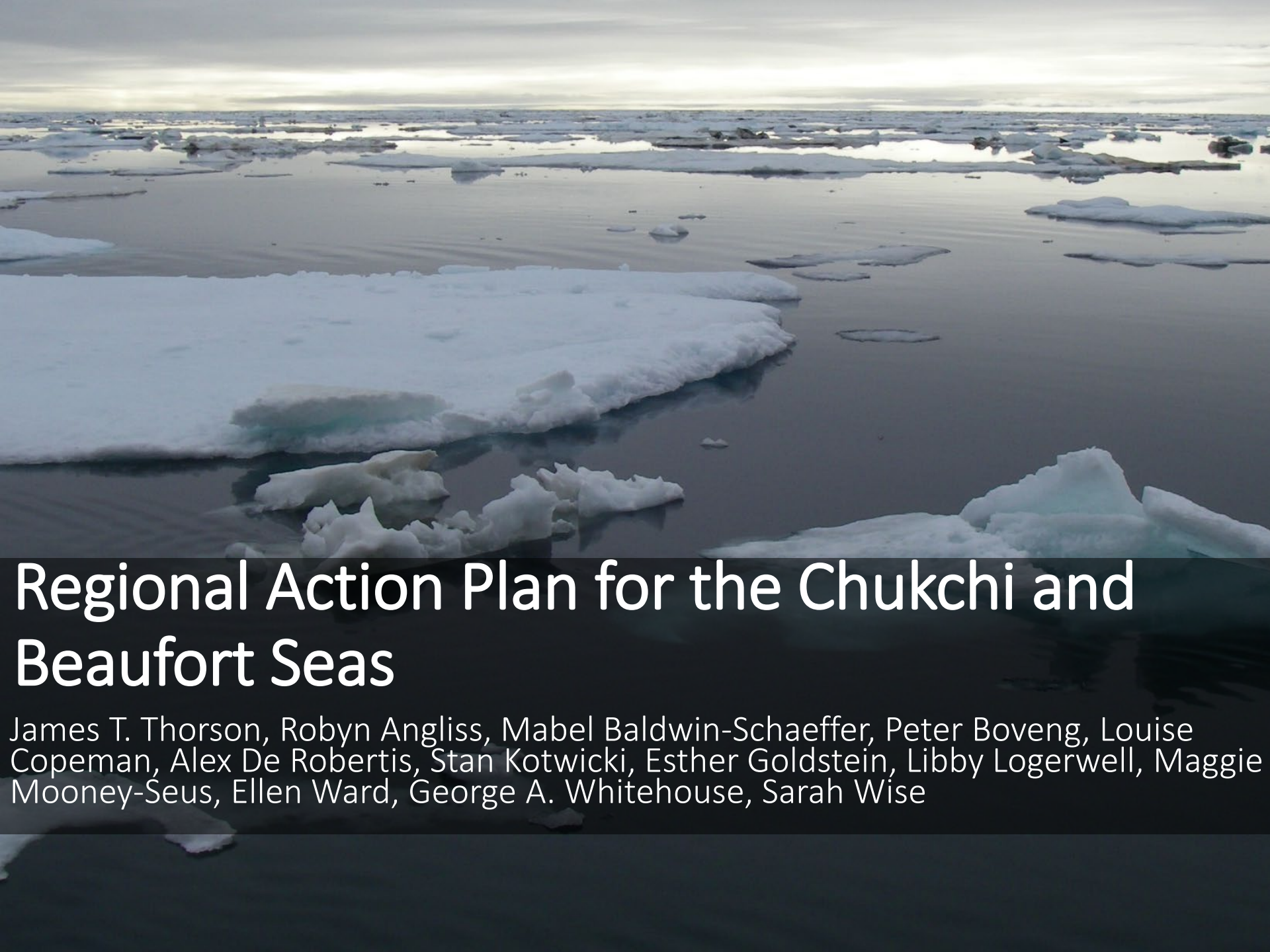


Regional Action Plan for the Chukchi and Beaufort Seas

James T. Thorson, Robyn Angliss, Mabel Baldwin-Schaeffer, Peter Boveng, Louise Copeman, Alex De Robertis, Stan Kotwicki, Esther Goldstein, Libby Logerwell, Maggie Mooney-Seus, Ellen Ward, George A. Whitehouse, Sarah Wise

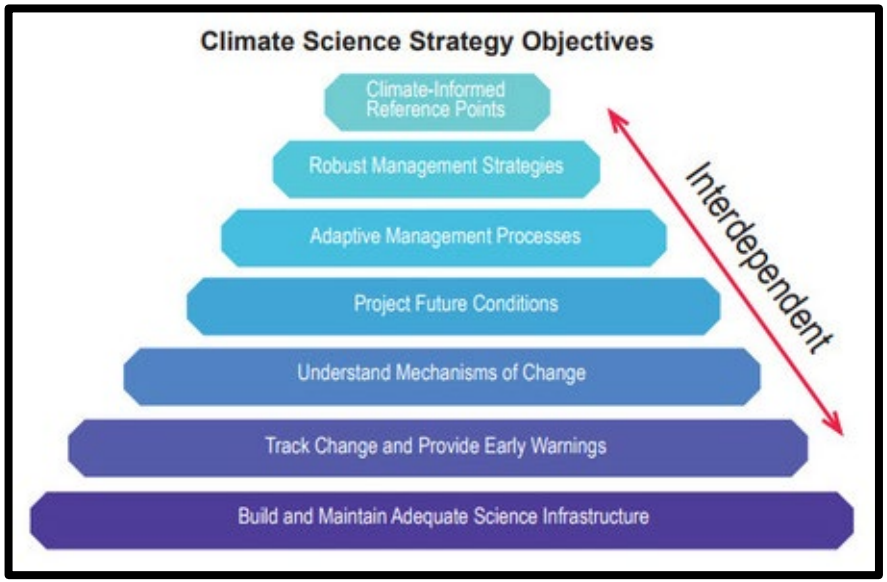
What is the Arctic RAP

The Arctic RAP is:

- A regional process to implement, envision, discuss, communicate, and track activities responding to the NOAA Fisheries Climate Science Strategy (NFCSS)
- An AFSC-led document that can be used to:
  - Prioritize reimbursable funding for activities in the plan (RWP, NCRP, EFH)
  - Identify areas where researchers can collaborate within AFSC and with external partners
  - Develop agreement regarding key science gaps in the Arctic

Five AFSC planning categories for all RAPs:

- Monitoring
- Process research
- Management-oriented synthesis
- Marine mammals
- Socio-economic and human dimensions



Where is the Arctic RAP?

- Chukchi and Beaufort Seas
- US exclusive economic zone (not Alaska State waters)

Development process

1. All programs invited to nominate representatives
2. Convene two virtual seminars with presentation from all representatives
3. Consensus agreement about “sub-lead” for aeach AFSC category
4. Open-invite (“opt-out”) process to identify potential activities
5. Sub-leads identify top 2-3 priorities for activities
6. Lead author and sub-leads discuss, edit, merge, and modify as needed
7. Re-circulate for input from all programs and AK Regional Office

- In the Arctic RAP, we envision:
  - a targeted portfolio of monitoring, process research and synthesis efforts including lower trophic, fish, marine mammal, and human components of the ecosystem that would occur from 2022-2024.
  - developing a collaborative research environment in which discussions and partnerships with Alaska Natives communities is a central element, so that the next Arctic Regional Action Plan can involve components that are co-produced with Alaska Native communities. 2022-2024

- Two sections:
  - Inventory of previous and on-going ecosystem monitoring programs
  - Recommended future activities (11)

Future Activities

1. Bridging knowledge to inform Arctic Management

Goals:

- Promote interdisciplinary partnerships;
- Document Indigenous Conceptual Models;
- Demonstrate collaborative methods.

Future Activities

2. Communications To Support Co-Producing Science with Arctic Communities

Goals:

- Conduct radio interviews and local newspaper features;
- Develop educational efforts targeting students, teachers and parents in the communities.
- Use NMFS communications platforms to highlight collaborative efforts

Future Activities

3. Local Knowledge, Traditional Knowledge, and Subsistence Taskforce for Arctic Region

Goals:

- Convene Arctic LKTKS Task force

Future Activities

4. Expand involvement with Distributed Biological Observatory (DBO)

Goals:

- Add beam trawls
- Extend exploratory large-mesh trawling
- Add benthic respirometer
- Add environmental DNA

Future Activities

5. Predicting HABs and juvenile snow crab status using satellite-based ocean color

Goals:

- Develop a phytoplankton community size structure algorithm,
- Advance a specific algorithm for the detection of small photosynthetic bacteria (*Synechococcus*),
- Develop an algorithm for diatom abundance and
- Explore satellite metrics to predict HAB prevalence and juvenile crab abundance

Future Activities

6. Overwinter survival of gadids

Goals:

- Predict impact of summing warming on juvenile condition
- Predict impact of condition on overwinter survival

Future Activities

7. Vessel-based cetacean survey of the Chukchi Sea

Goals

- Maintain and improve passive acoustics;
- Develop and implement vessel and/or aerial survey

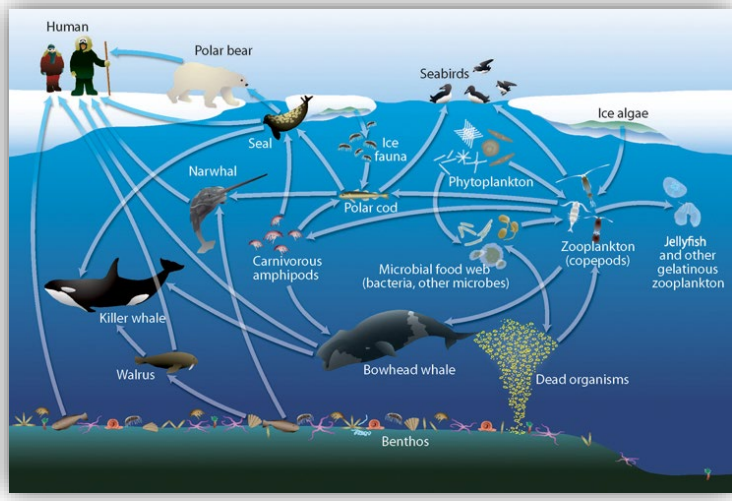
Future Activities

8. Trophic roles of ice seals

Goals:

- Estimate seasonal prey requirements
- Expand to total ice-seal consumption

Future Activities

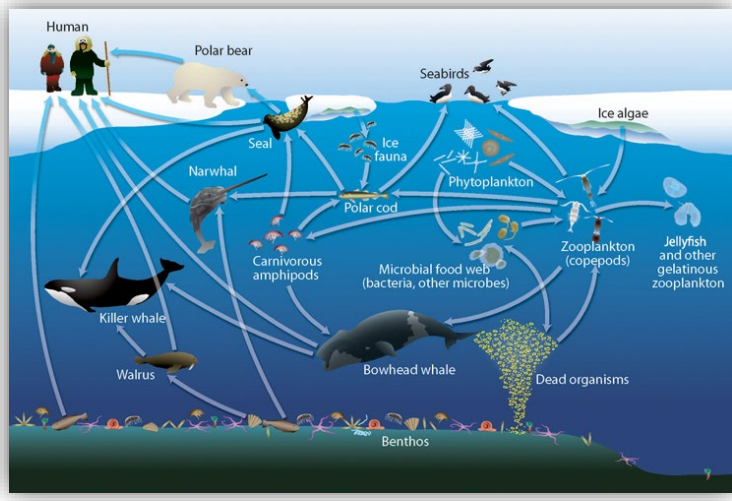


9. Arctic Ecosystem Status Report

Goals:

- Update the Arctic ESR during 2022-2024

Future Activities



10. Expand Arctic Ecosystem Modelling

Goals:

- Update Chukchi food web model
- Develop Beaufort food web model
- Compare system-level optimum yield across all Alaska ecosystems
- Spatio-temporal synthesis model for survey planning:

Future Activities

11. Bottom trawl and acoustic-trawl survey to detect northward distribution shifts

Goals:

- Develop survey design
- Conduct short gear trial
- Implement combined sampling effort

Acknowledgements

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