

Alaska Native Tribal Health Consortium:
The Unmet Needs of Environmentally
Threatened Alaska Native Villages (2024)

2024 EESM PI Mtg – Local/Regional Testbeds

Earth system models in a community and regional planning and decision support context: Perspectives from Arctic Alaska

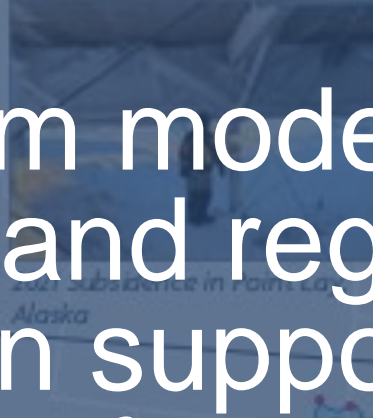
- Hajo Eicken
- *International Arctic Research Center on the UAF Troth Yeddha' Campus*
iarc.uaf.edu; northernclimaterereports.org; arcticeds.org; arcticdatascience.org



2021 Flooding in Buckland, Alaska



2022 Flooding in Golovin, Alaska



2021 Flooding in Pomona, Alaska



2020 severe erosion in Newtok, Alaska



2021 Flood protection structure in Fort Yukon, Alaska



2020 snow thaw in Chefornak, Alaska



2022 storm surge berm lost in Shaktoolik, Alaska



2022 Erosion in Nelson Lagoon, Alaska



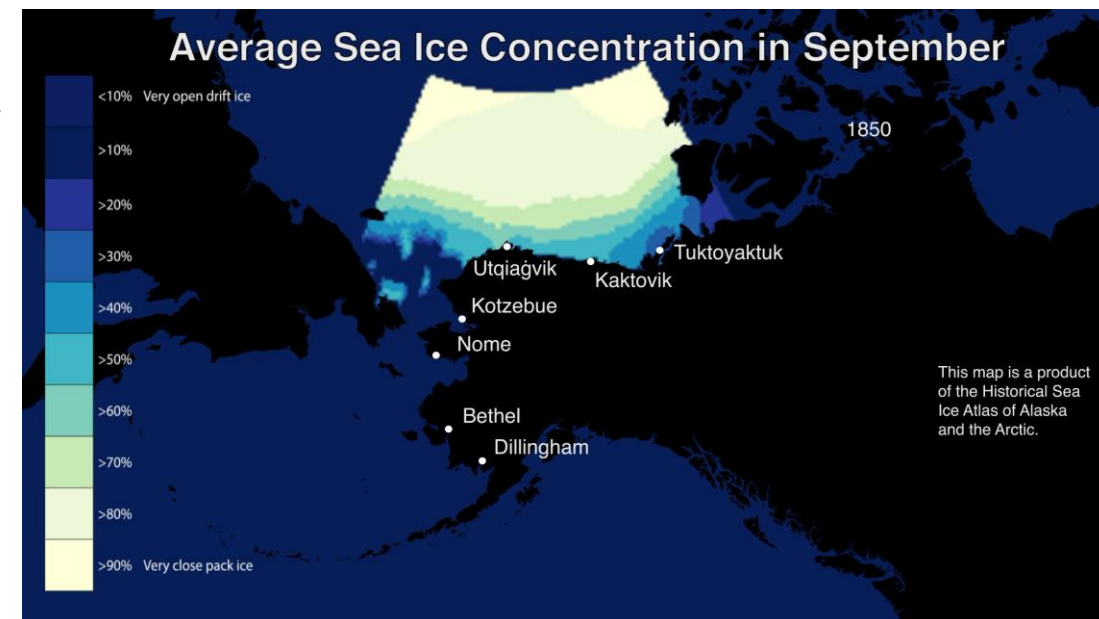
International Arctic Research Center



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Local/Regional Testbeds: Integrative framework for multidisciplinary model development & applications

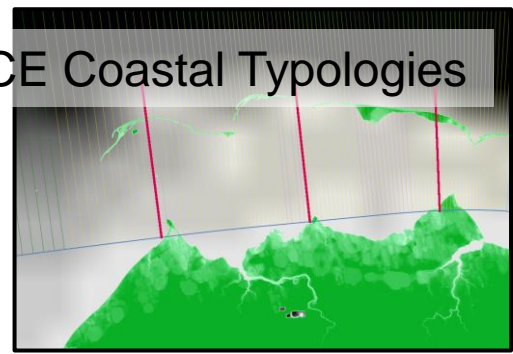
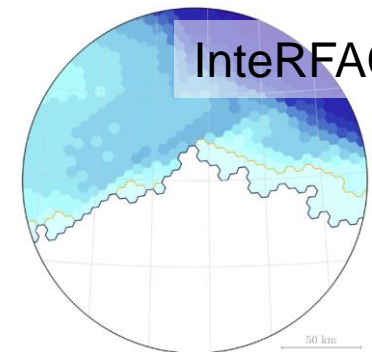
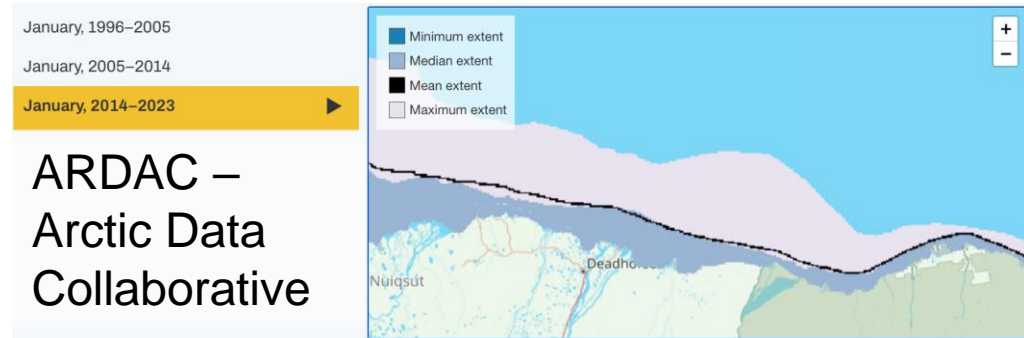
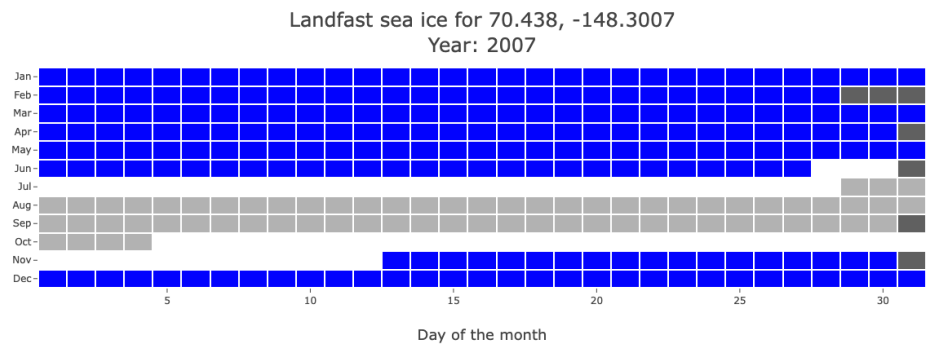
- Why local/regional testbed? **Convergence of decadal-scale changes, pressing information needs, planning & decision-making (PDM) at local scale**
- Location & opportunities? **Centennial-scale knowledge & obs. time series; >100 threatened communities; energy & national security infrastructure**
- Grand challenge? **Work at the intersection of (i) critical information needs, (ii) ESM capabilities, (iii) tangible benefits**
- Role for other agencies? **Draw on IARPC CoPs & direct partnering (e.g., USGS-supported AK-CASC; NOAA Arctic Testbed)**





ESMs and planning & decision-making (PDM)

- Constraints on actionable ESM output for PDM Testbed
 - (1) Relevant processes captured
 - (2) Output resolution aligns with needs
 - (3) Robustness/uncertainty measure
 - (4) Information appropriate for PDM context
 - (5) ESM output compatible with knowledge co-production



ESMs & PDM

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