

Circumpolar Biodiversity Monitoring Program

Coordinating for Arctic Conservation

Mike Gill
CBMP Chair
Environment Canada
Whitehorse, Canada



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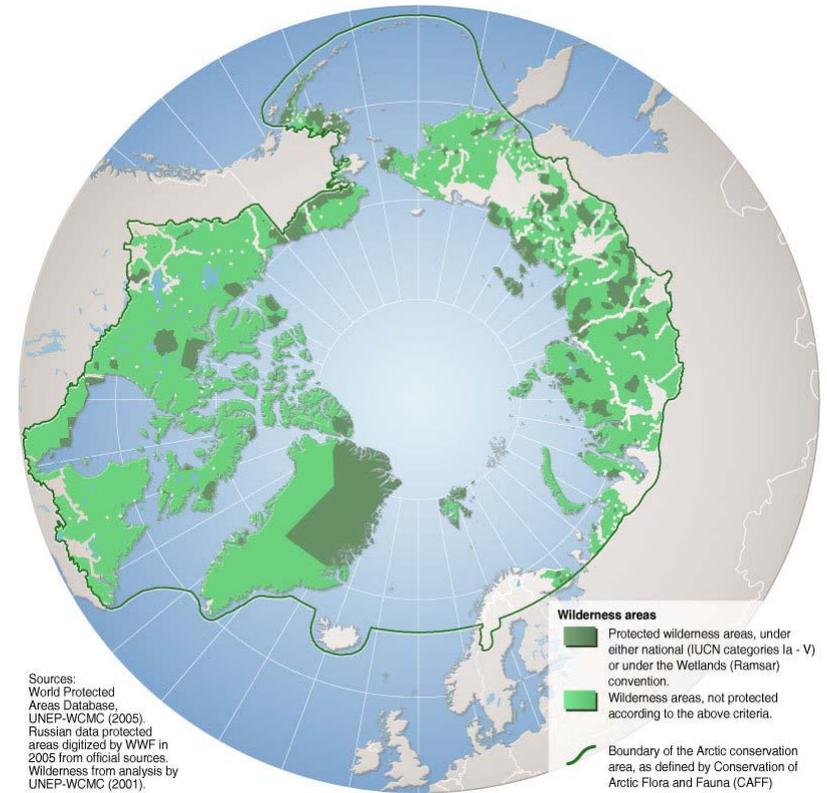
Outline

- The Arctic's Challenge
- Meeting the Challenge: The CBMP
- Coordinated Arctic Monitoring and Reporting



The Arctic

- 3X Size of Europe
- Remote with extreme environment
- Multiple jurisdictions
- High proportion of migratory species
- Under increasing pressure (multiple drivers)
- Arctic communities have strong ties to the land



CAFF Designated Area



Current Biodiversity Monitoring: Limitations



\$500 M+ spent each year, BUT:

- Lack of coordination and long-term commitment
- Incomplete and irregular coverage
- Existing information ignored or inaccessible
- Limited involvement of local people

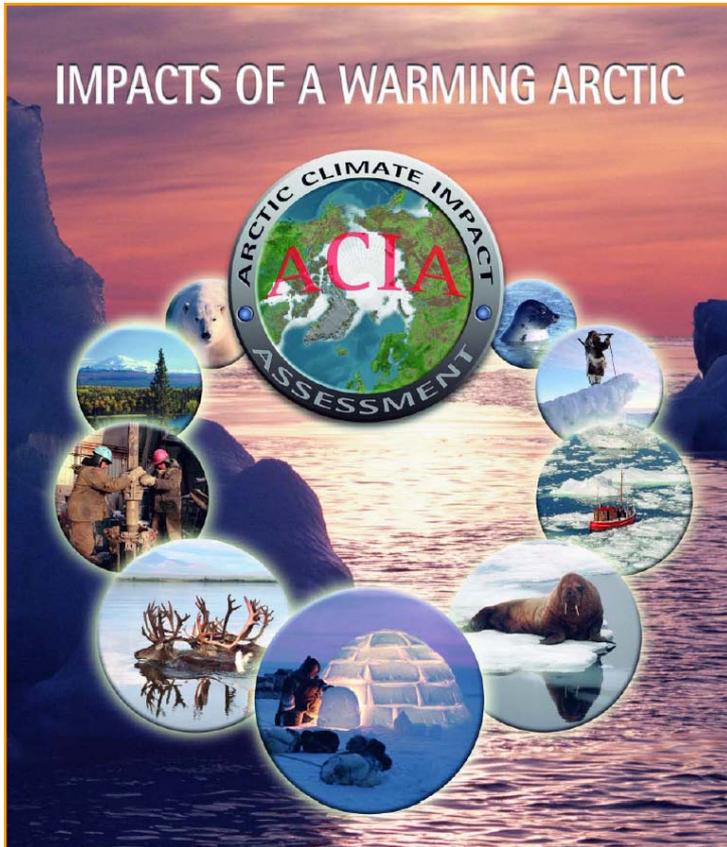


Current Biodiversity Monitoring: Limitations

- Leading to:
 - Lack of integrated, circumpolar perspective
 - Limited ability to detect and understand change
 - Weak linkages to public and decision/policy makers



What is the CBMP?

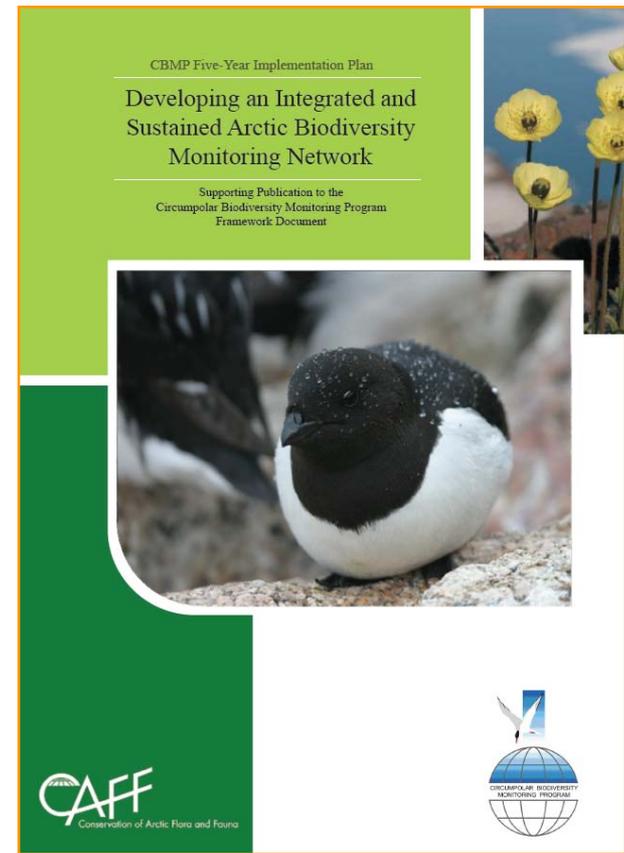


- ACIA recommendation:
 “expand and enhance long-term Arctic biodiversity monitoring”
- International network working to:
 - improve detection, understanding, and reporting of and response to Arctic biodiversity trends
- A focal point for cutting edge Arctic biodiversity information
- Cornerstone program of CAFF



CBMP Objectives: Adding Value

- Monitoring networks **coordinated, integrated** and **cost-effective**
- **Best monitoring practices** utilized and promoted
- Arctic people **involved** in monitoring and interpretation of results
- **Current, timely** and **accurate** information on Arctic biodiversity **accessible** to decision-makers, including the public



Program Status

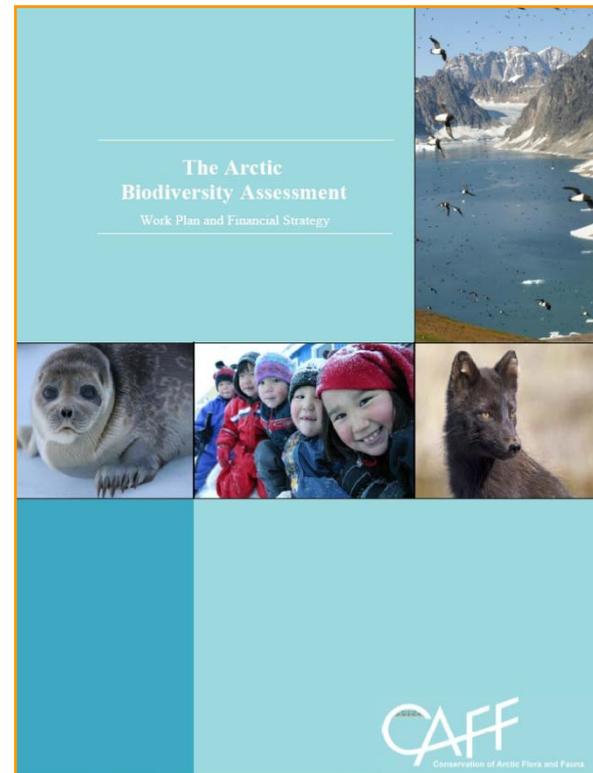


- Led by Canada
 - CBMP Office in Whitehorse
- Multiple project funding sources in Canada, US, Finland, Norway, Sweden and EU
- Over 60 partners and 600 members



Strategic Links

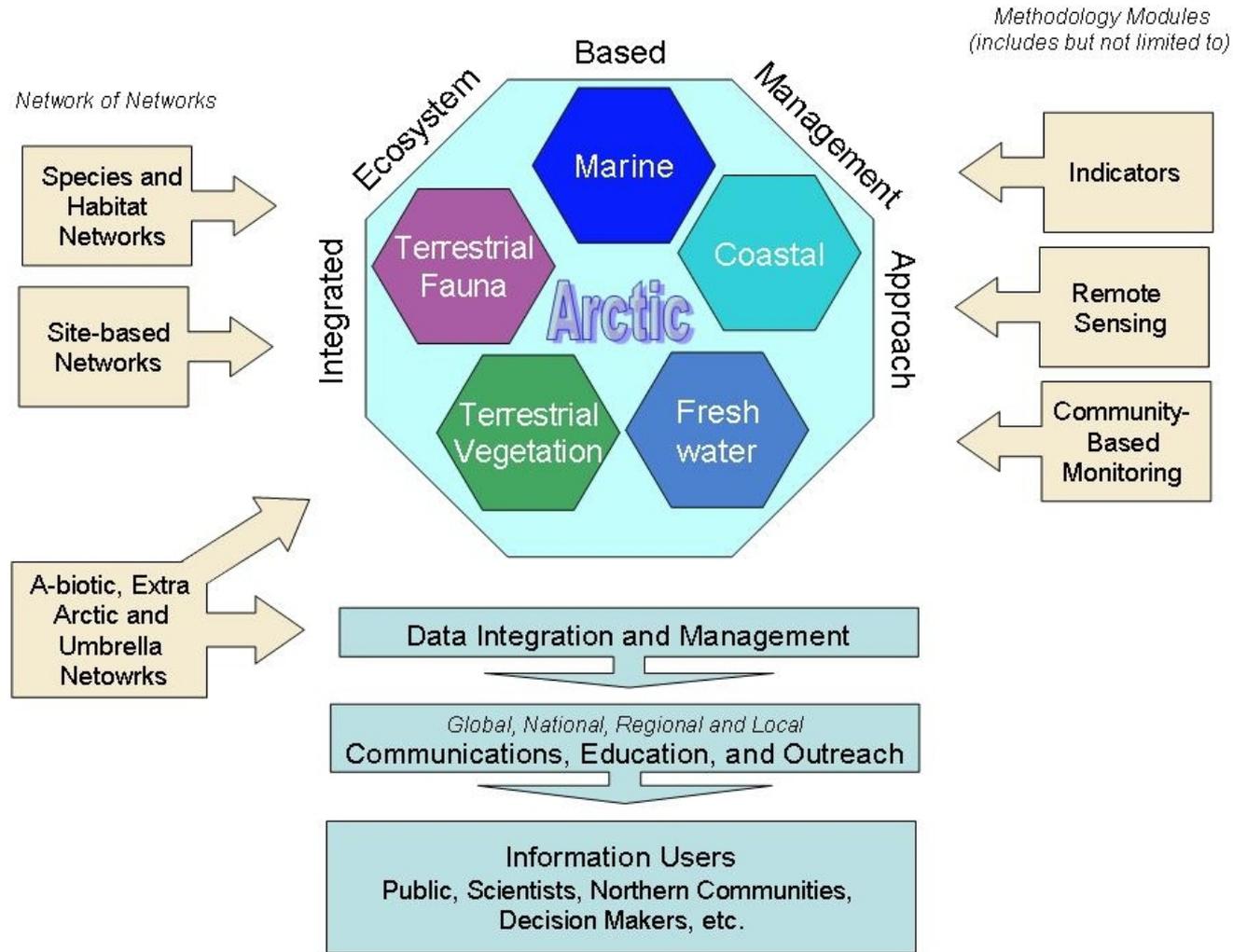
- Arctic Biodiversity Assessment
- International Polar Year
- Sustaining Arctic Observing Networks
- State of the Arctic Reporting
- 2010 Biodiversity Indicators Partnership



CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM

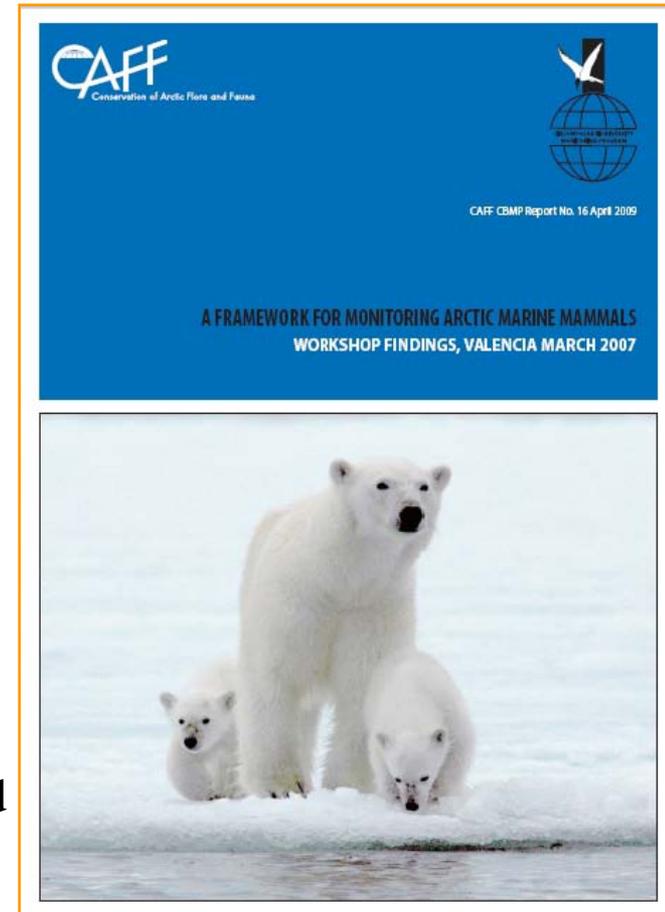
Organization

- Coordinated and Integrated Monitoring
- Data Management
- Capacity Building
- Communications, Education and Outreach
- Reporting

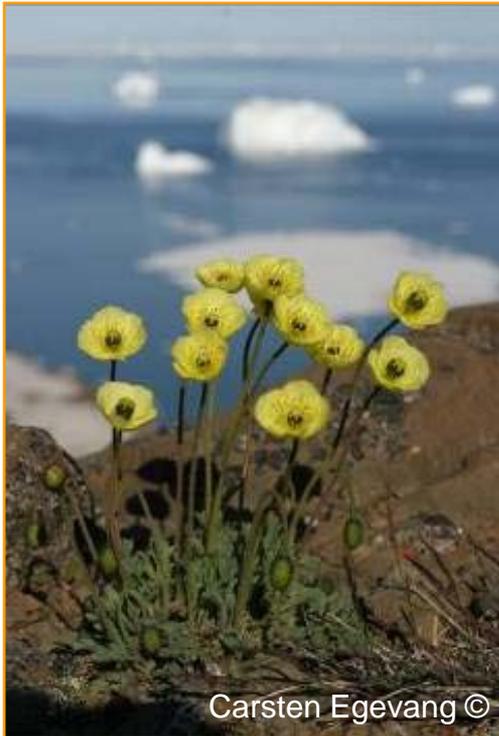


Coordinated and Integrated Monitoring

- Expert Monitoring Groups:
 - Marine, Coastal, Freshwater, and Terrestrial
 - Integrated, ecosystem-based, network of networks
 - Based largely on existing research and monitoring
 - Forum for scientists and community experts
 - Developing pan-Arctic, integrated monitoring plans
- Other:
 - 33 theme- and site-based networks (CBIRD, ITEX, CARMA, etc.)
 - Monitoring Frameworks (e.g. Circumpolar Protected Areas, Arctic Marine Mammals, Seabirds, etc.)



Integrated Monitoring Plans (IMP)



- Respond to science questions and user needs
- Core set of standardized measures, plus regionally specific measures
- Linked to relevant and multiple drivers
- Using existing monitoring capacity and information
- Address current gaps in coverage
- Optimal sampling and partners identified
- Establish statistical baselines and retrospective assessments



IMP Development - Overall Process

- Background paper (scope, focal areas/habitats, selection criteria)
- 1st Workshop (what and where?)
- Draft Integrated Monitoring Plan
- 2nd workshop (who, when and how?)
- IMP Finalized
- Arctic Council Endorsement and Implementation



Systematic Scoping: Adaptive Environmental Assessment and Management

- Simplifies ecosystem approach (priority issues) while maintaining inter-disciplinarity
- Process...
 - Describe system (ID priority Components and Drivers)
 - Develop Cause Effect charts and Impact Hypotheses
 - ID priority indicators and research, monitoring and management needs and actions
 - ID optimal sampling schemes and standards
 - Identify existing networks and infrastructure



Indicator Selection Criteria

- Ecologically relevant, and relevant to, and resonates with, diverse audiences;
- Relatively simple and practical to measure allowing for cost-effective, repeatable and accurate measurements;
- Reflective of and sensitive to ecosystem change, either through natural or anthropogenic drivers;
- Scalable;
- Subject to targets and threshold setting;
- Long-term commitments to monitor and existing time series.



Indicator Suite Criteria

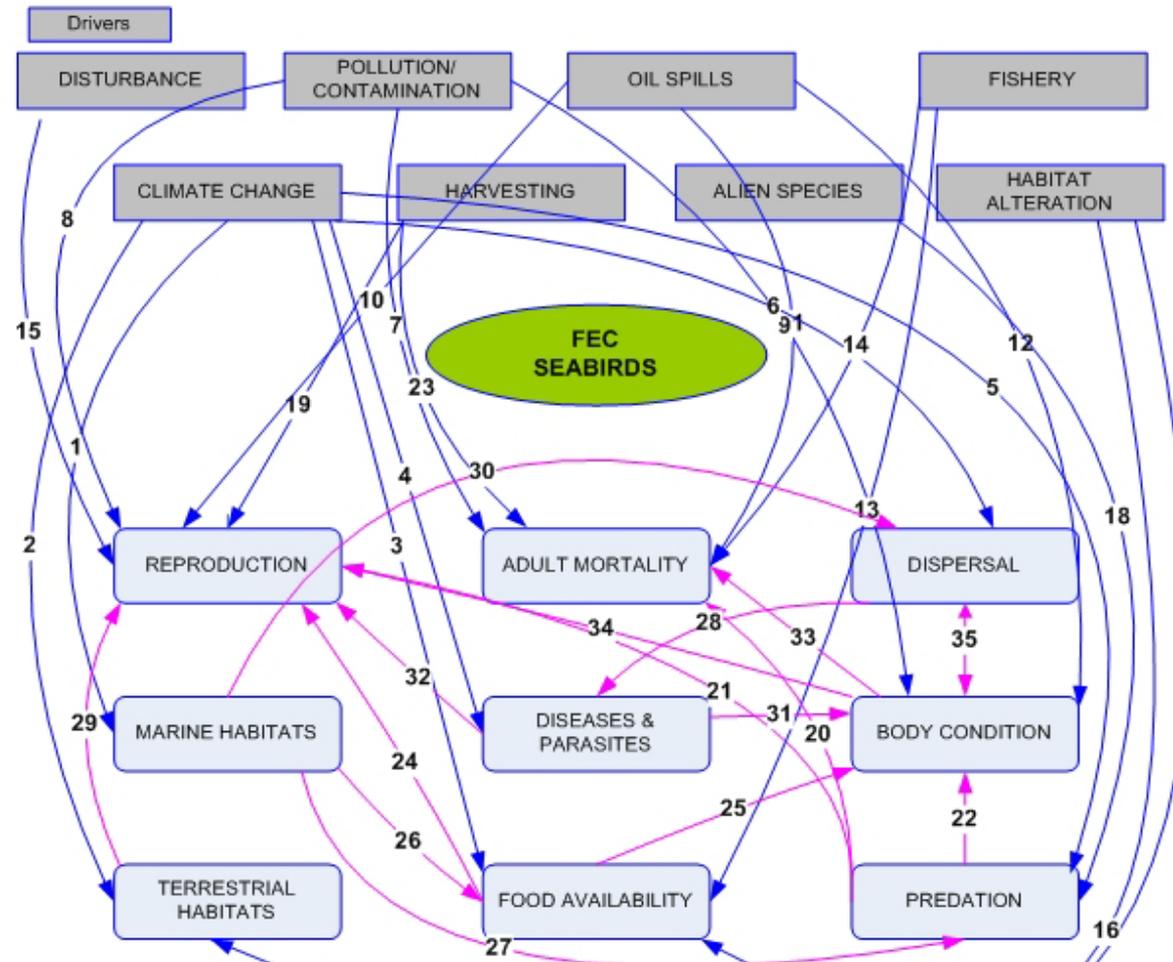


- Key drivers addressed;
- All relevant and central elements of the system covered (genetic, species, processes, habitat...)
- All trophic levels covered;
- Both common species as well as those of public concern and importance to local communities covered.



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Cause Effect Charts



Coordinated and Integrated Reporting

- Arctic Report Cards
- CBMP Biodiversity Indices/Indicators
 - Arctic Species Trend Index
 - Arctic Red List Index
 - Arctic Trophic Level Index
 - Arctic Wilderness Index
 - Arctic Human well-being Index
- Down-scaled products

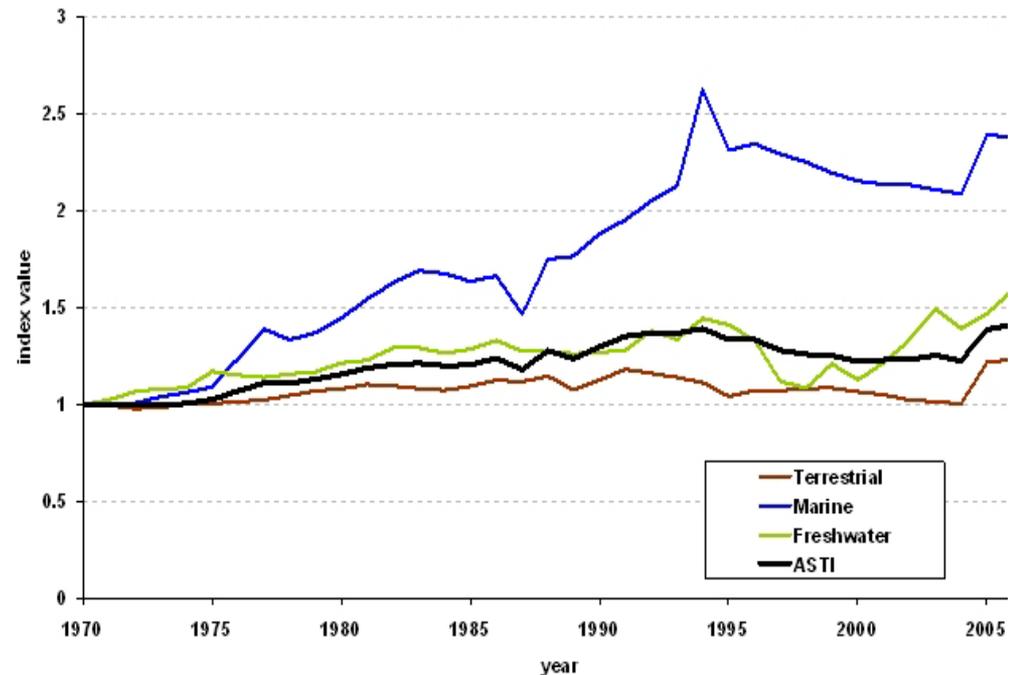


Figure 4: Arctic Species Trend Index disaggregated by system – terrestrial (n = 329), marine (n = 277) and freshwater (n = 130).





SEABIRD INFORMATION NETWORK

Seabird Search

Species:

Activity:

Date: (mm/dd/yyyy)

Start Date

End Date

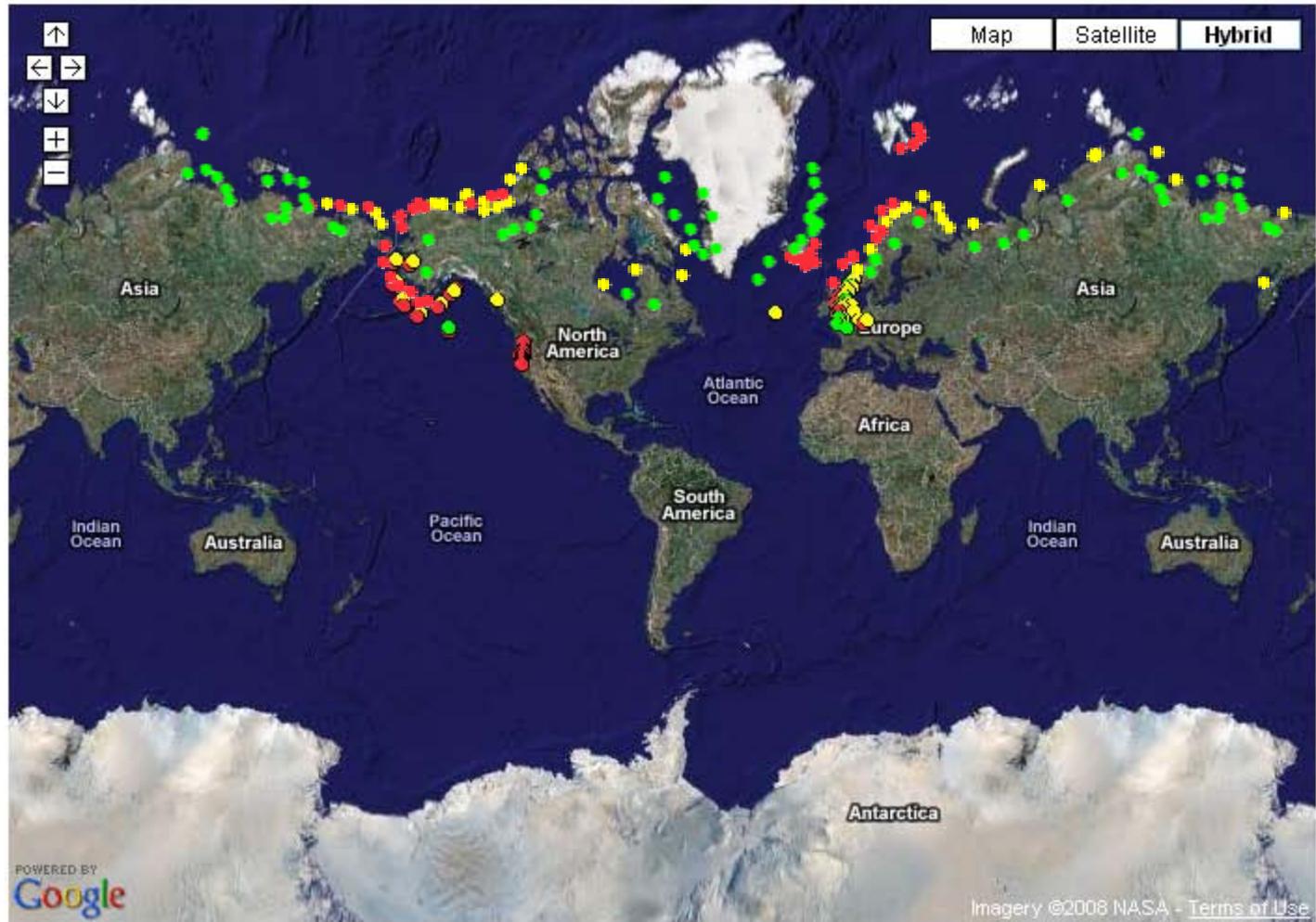
[Seabird Gallery](#)

Notes

Put your mouse over a colony to see latest data
Click on a colony to see detailed data for the colony.

Map Key

High Productivity



Funding Strategies - How to Sustain

- Be relevant - Direct link to mandates, important to local people, gives politicians a headache;
- Stay focused – core set of standardized measures;
- Normalize monitoring in core operations (simple, repeatable measures);
- Clear reporting and data management strategies (direct link to reporting mandate); and,
- Direct links to research and decision-making (local, regional, national, global)





Rules of Thumb/Lessons Learned

- Clearly define scope
- Build upon existing information and capacity
- Keep it simple and flexible
- Don't forget extreme events
- Don't force standardization but look for opportunities
- Support baseline tools (inventories, common classifications, taxonomy)



Thank-you!

