



The Circumpolar Biodiversity Monitoring Programme's Arctic Terrestrial Biodiversity Monitoring Plan:

An invitation to engage

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Program for this session

- Mora Aronsson & Tom Christensen: Introduction to session and CBMP Terrestrial Monitoring Plan. An Introduction to CBMP, the Terrestrial Plan and next steps (20 minutes)
- Gabriella Ibarguchi: The CBMP- Terrestrial Bird Group. An example on priority FEC's attributes & planned initiatives (10 minutes).
- Jesper Madsen: Current estimates of goose population sizes in the northern hemisphere: a gap analysis and an assessment of trends (10 minutes).
- Aleksander Sokolov; Terrestrial biodiversity monitoring in Yamal, Russia: from past experience to future perspectives (15 minutes).
- Don Russell: Development of CARMA's integrated landscape model to assess cumulative effects of development and climate change on migratory tundra Rangifer (15 minutes).
- Facilitated discussion (Morten I. Wedege):



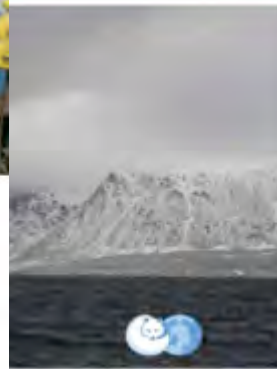
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- Arctic Councils Biodiversity Monitoring Programme (under CAFF) and response to ACIA's recommendation to expand and enhance Arctic biodiversity monitoring and bridge the information
- Bridging the information-policy gap; including reporting
- CBMP contains of expert Monitoring Groups (EMGs)/ Steering Groups (SG):
 - **Marine, Coastal, Freshwater, Terrestrial**
 - Builds an Ecosystem-based approach and consist on network of networks
 - Forum for scientists and community experts (more than 100 international experts directly involved)
 - 3 Pan-Arctic, integrated monitoring plans
- Four Year Strategic Plan direct the CBMP in the coming years



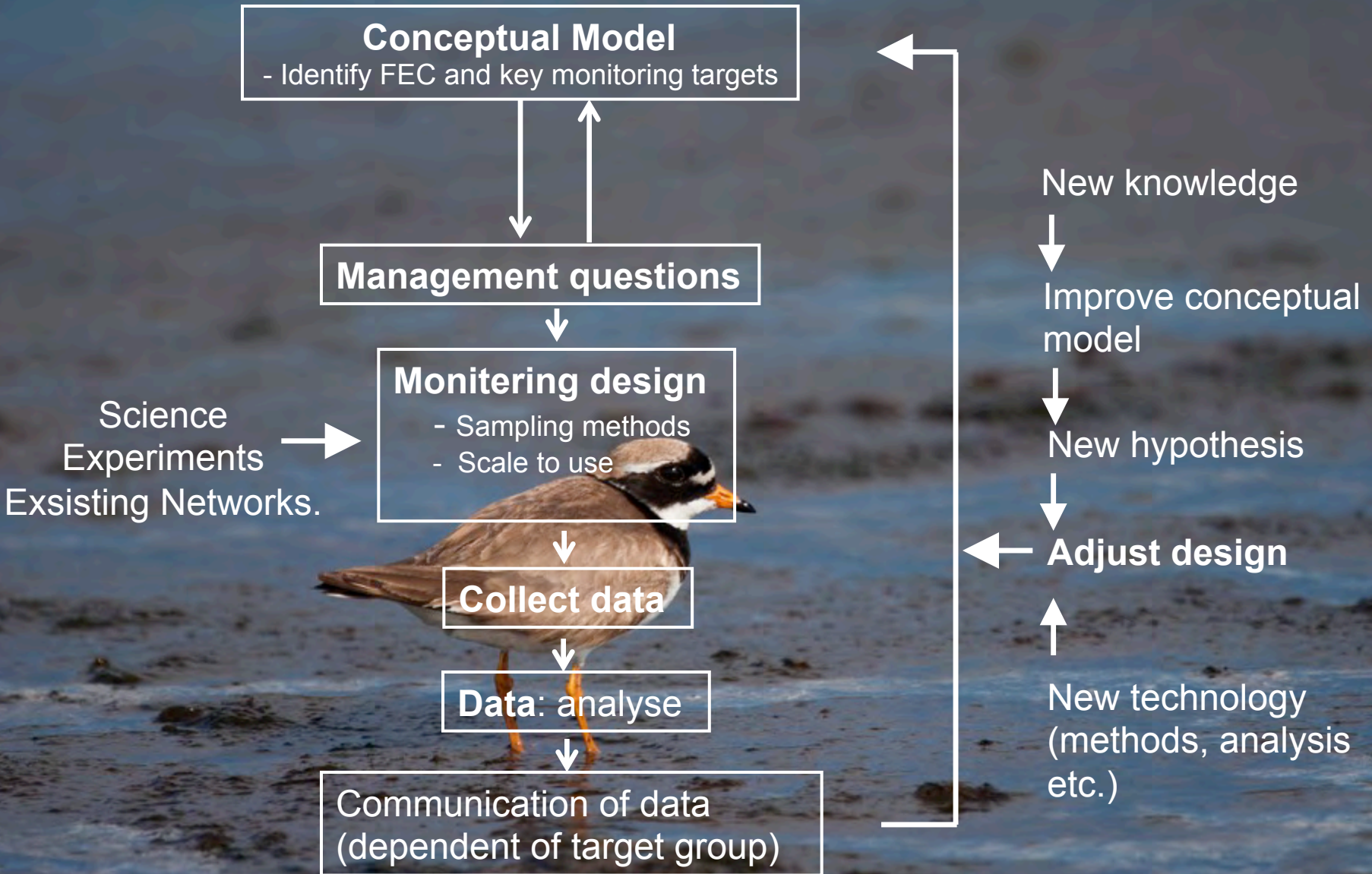


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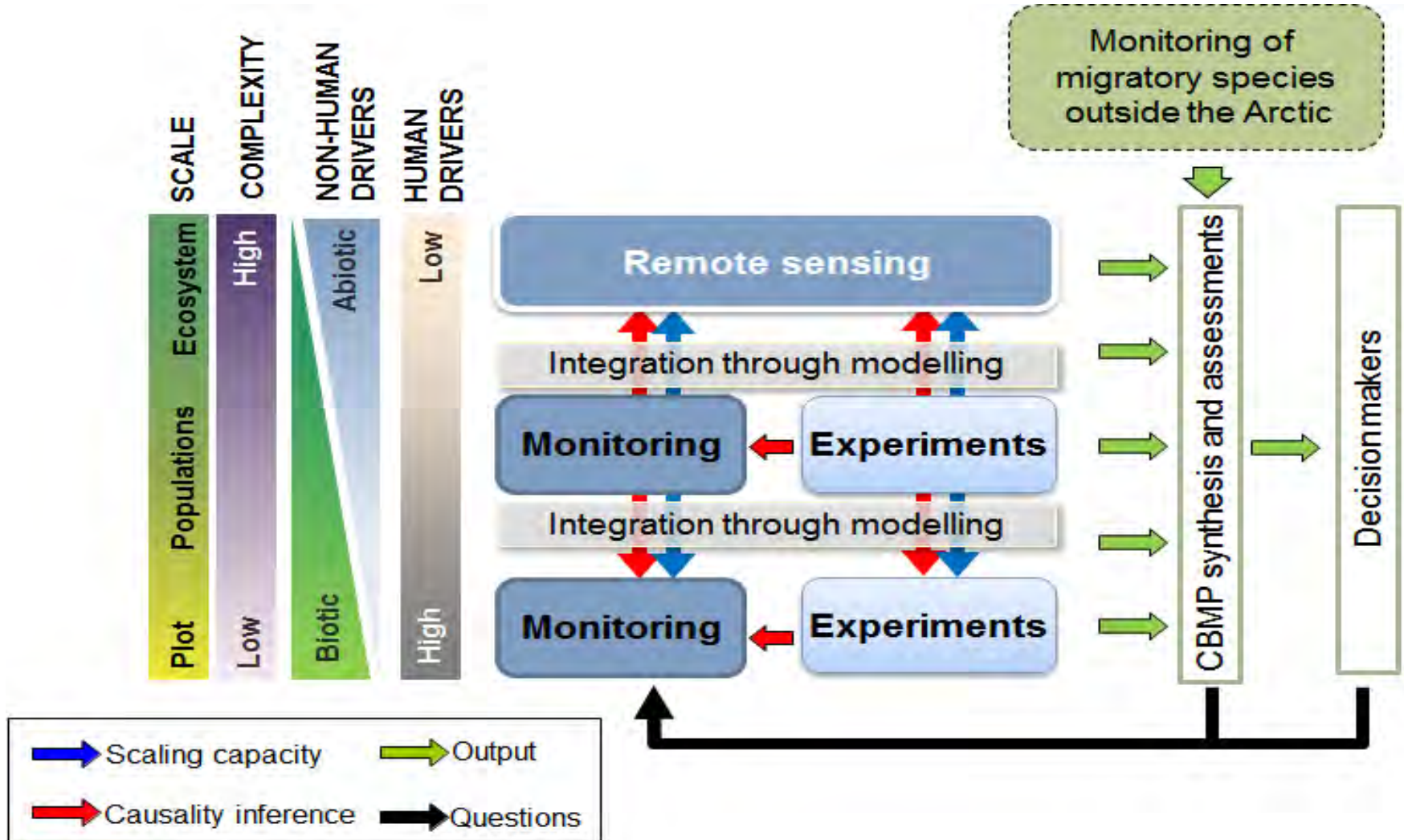
- Builds on the platform established by the CBMP five year implementation plan and the Arctic Biodiversity Assessment.
- Is the continued response to Arctic Council recommendations on biodiversity and ecosystem monitoring.
- A step to ensure integration of the different monitoring disciplines within CAFF.
- To bring on ground monitoring up on a regional and international scale through various products.
- Will have focus on ABA implementation in coming years





Monitoring approach

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- What monitoring do we have?
 - Inventory of long-term terrestrial biodiversity monitoring
- What information do we need?
 - Description of key management questions & key monitoring questions
- What are the key features of Arctic biodiversity?
 - Development of conceptual ecological models



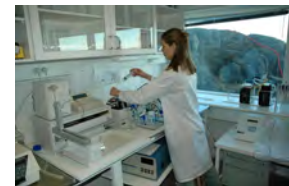
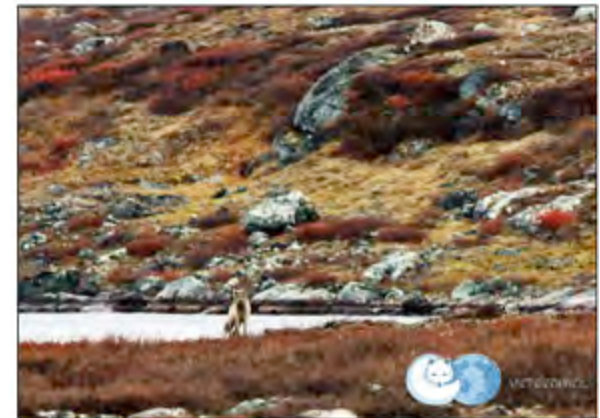
Plan “Focal Ecosystem Components” & design



The CBMP Terrestrial Plan

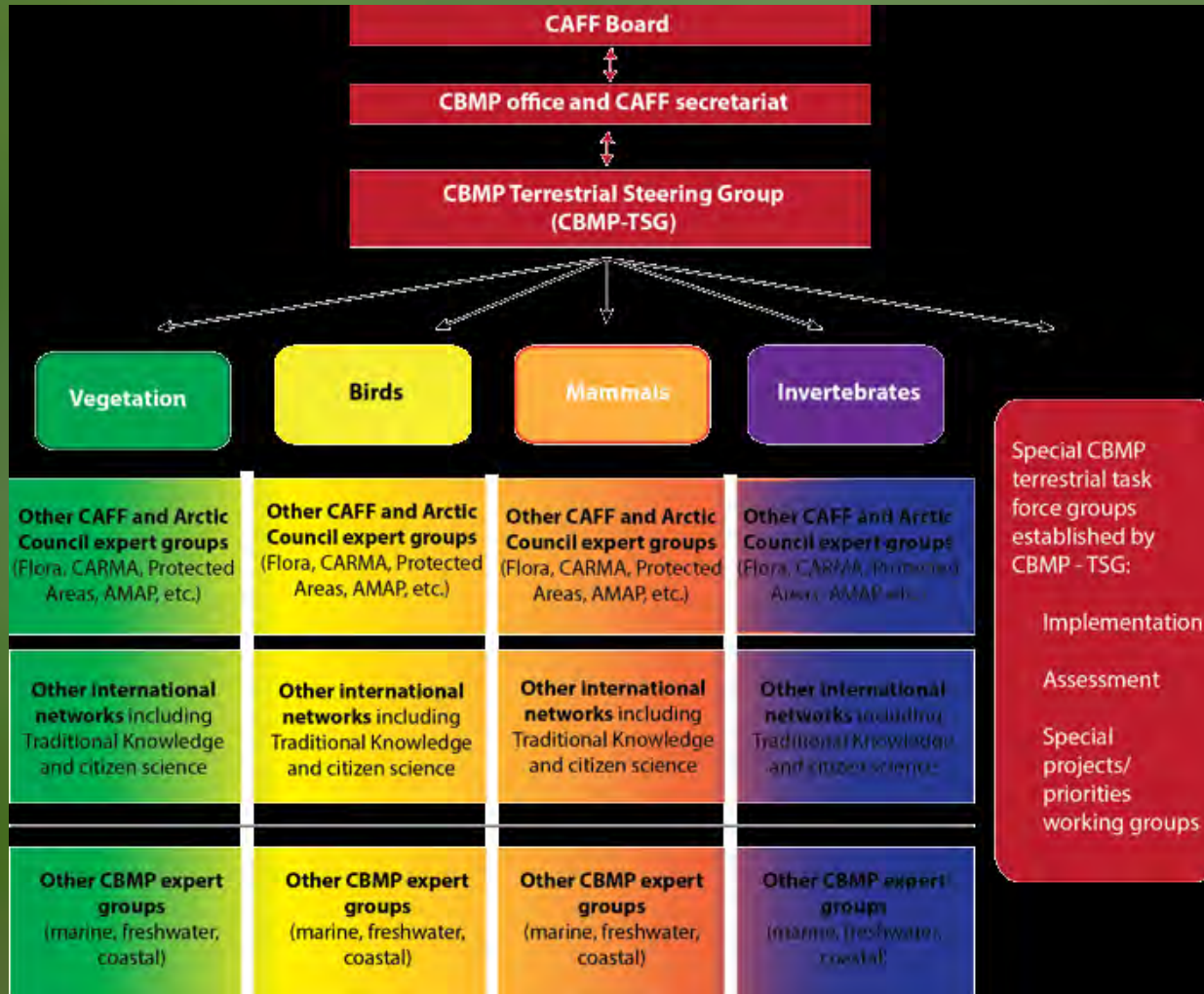
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- Arctic Terrestrial Biodiversity Monitoring Plan approved by CAFF and published October 2013
- CBMP Terrestrial Steering Group tasked with coordinating implementation of the plan



Organisation – Terrestrial Monitoring Plan

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For each biotic group we will

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- Apply a common set of steps for a set of priority Focal Ecosystem Component (FEC) attributes
 - Identify data sources, networks and on-going work to support analysis. Develop relationships.
 - Identify methods to harmonize and coordinate available data and methods.
 - Develop tools, as required.
 - Conduct integrated assessments.
 - Identify gaps & propose solutions.
 - Make data and tools available.



Status – Terrestrial Monitoring Plan

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- Implementation meeting in Akureyri, February 2014.
- Rotating chair. Currently Chaired by Canada (2014 – 2015). Sweden (2015 – 2016). Norway next.
- The Annual report include a three year workplan, leading to the State of the Arctic Terrestrial Biodiversity Plan - 2017.
- Work implemented by biotic group networks: birds, mammals, arthropods, vegetation
- First Annual Meeting is scheduled in Canada in February 2015.
- Cooperation with relevant Arctic Monitoring networks



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- **Vegetation:** Diversity, composition and abundance, productivity, and phenology at various scales; abundance of rare and non-native species
- **Birds:** Abundance and distribution of shorebirds, carnivores / scavengers (e.g., raptors/ravens) and herbivores (e.g., geese)
- **Mammals:** Abundance, distribution, demographics and health of caribou, muskox, Arctic fox and lemmings/voles
- **Invertebrates:** abundance and diversity of blood-feeding insects, pollinators, prey, herbivores, decomposers.
- **Cross-cutting :** Develop a sampling design for integrative, placebased assessment of Arctic change to assess ecosystem processes and linkages. Identify recommendations for monitoring parameters, protocols and study design.



Example vegetation FEC

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- Vegetation diversity, composition and abundance
- Productivity
- Phenology
- Rare species
- Non-Native species
- Food species



Cooperation: CBMP and INTERACT

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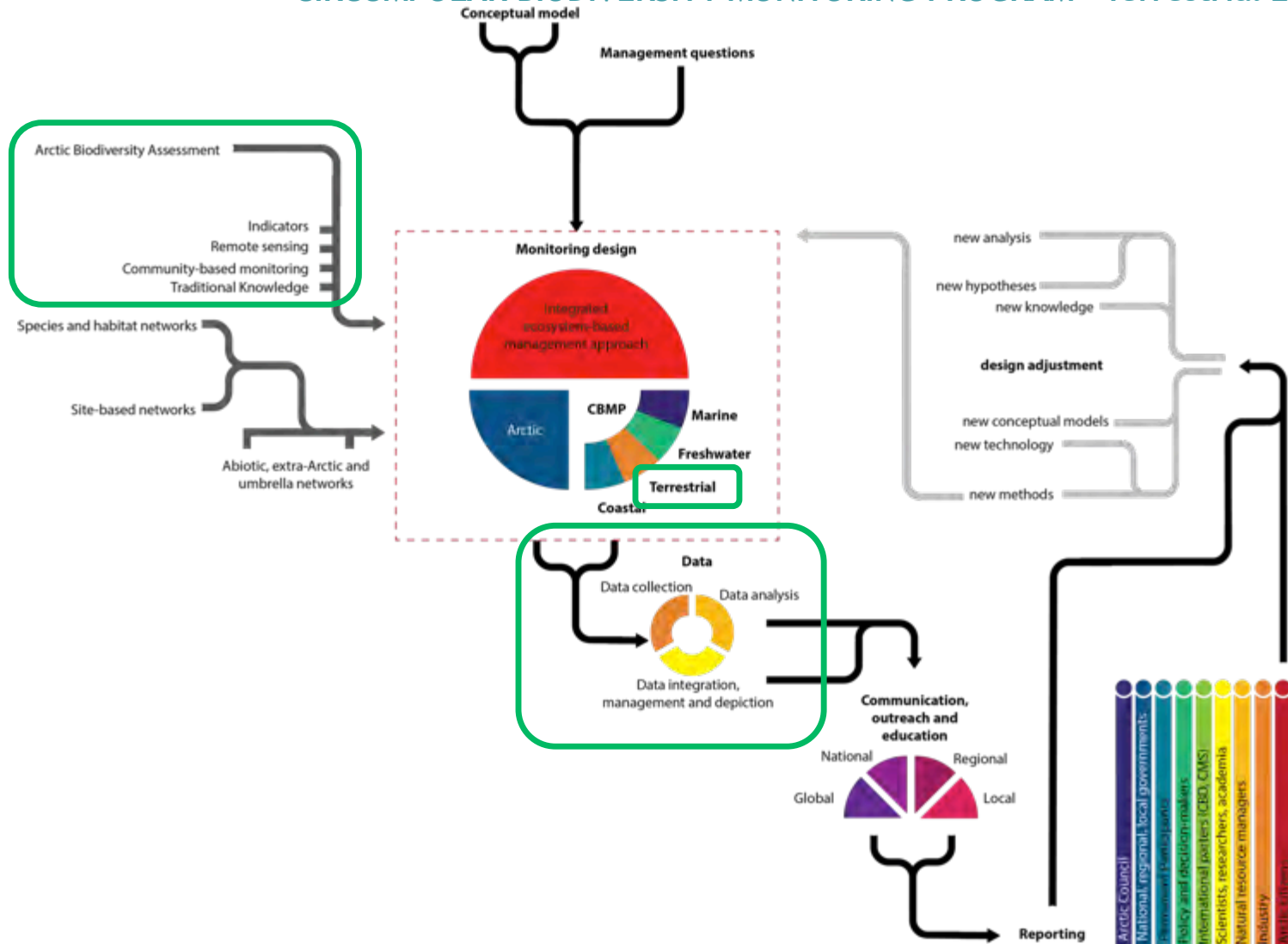
- International Network for Terrestrial Research and Monitoring in the Arctic, Builds on SCANNET
- Within the CAFF area more than 30 INTERACT stations
- INTERACT II –answer beginning of 2015 on CBMP WP
- Task 1. Coordinate and establish a CBMP/ INTERACT working group
- Task 2. Development of three CBMP ecosystem specific reference stations: Zackenberg (self funded) and CHARs (self funded) RIF (75.000 Euros)
- Task 3. Include INTERACT data into CBMP assessments



- INTERACT Observer station
- INTERACT station



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Questions for discussion

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- What opportunities exist to better coordinate Arctic Terrestrial Biodiversity Monitoring?
- How do we better integrate across disciplines?
- How your initiative helps to deliver on the ABA recommendations.
- Lessons learned related to terrestrial biodiversity monitoring
- How can we best assess cumulative effects?
- Are there stressors that are expected to have rapid and significant impacts related to your topic and issues where knowledge is lacking?

