

# Circumpolar Biodiversity Monitoring Program (CBMP)

*Koordinering og harmonisering  
af biodiversitets- og økosystem  
monitering I Arktis*

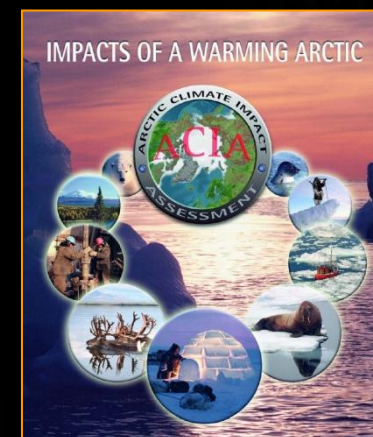
Af:

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Kirsten Christoffersen, Medlem af Limnisk EMG, Københavns Universitet



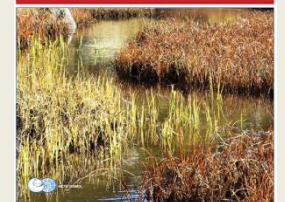
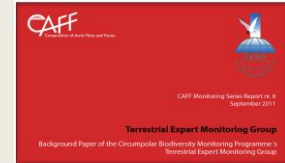
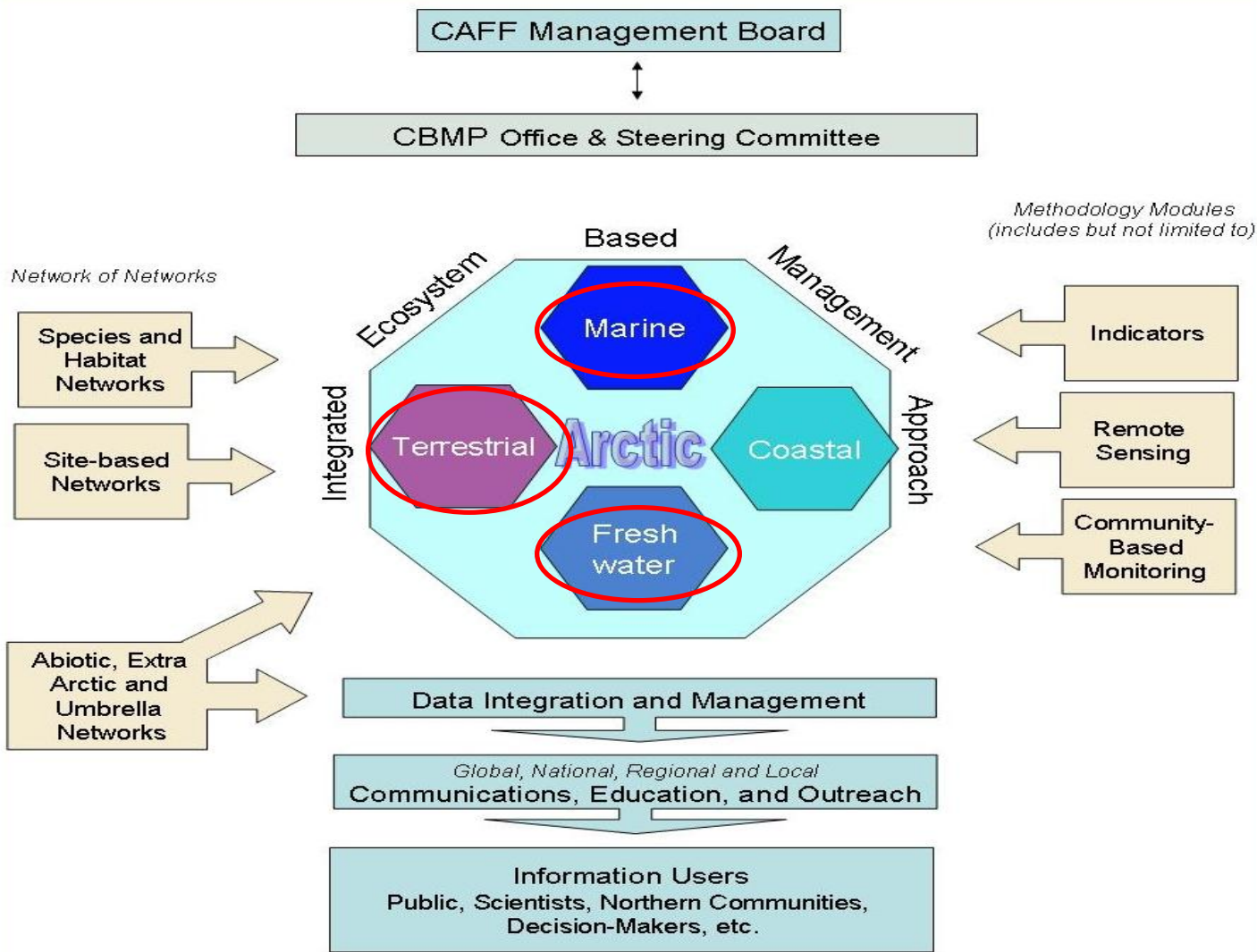
## Formål:

- CAFF's Opfølgning på ACIA: *"expand and enhance long-term Arctic biodiversity monitoring"* - At etablere langtidsserier som kan sammenlignes circumpolart.
- At skabe synergi og "cost benefit" mellem eksisterende monitoring af biodiversiteten via en økosystembaseret tilgang så ændringer spores bedre.
- Bygge bro mellem videnskab og beslutningstagere/ befolkninger: Hurtigere, bedre og mere målrettet information.
- Udarbejdelse af regelmæssige assessments
- Supplere andre AC initiativer





# CBMP organisation & status





# CBMP økosystem-modelbaseret monitoring

(Lindenmayer & Likens)



## Konceptuel Model

- Identificer FEC og "key monitoring targets"
- Definer geografiske og økologiske parametre
- Identificer stressorer og impact
- Identificer eksisterende monitoringsprogrammer
- Forventede effekter af forvaltningstiltag



## Management questions



## Monitorings design

- Indsamlings metoder
- Skala der bringes til anvendelse
- Design af protokol



## Indsamling af data/ fortolkning



## Data: analyser og fortolkning



Formidling af data (anvendte medier afhængig af målgruppe)

Forskning / eksperimenter



## Tilpas design til:

Øget/ ny viden



Forbedret konceptuel model



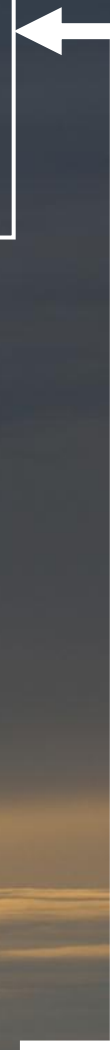
Nye hypoteser



Justeret design



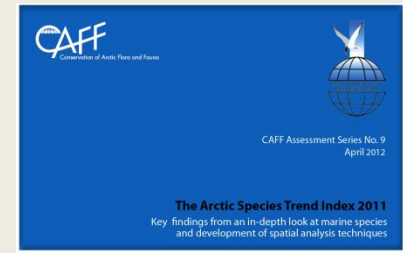
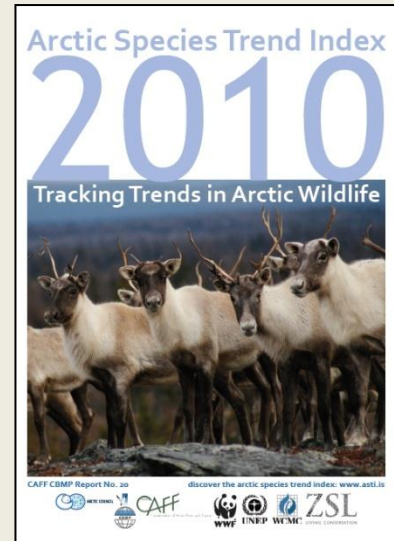
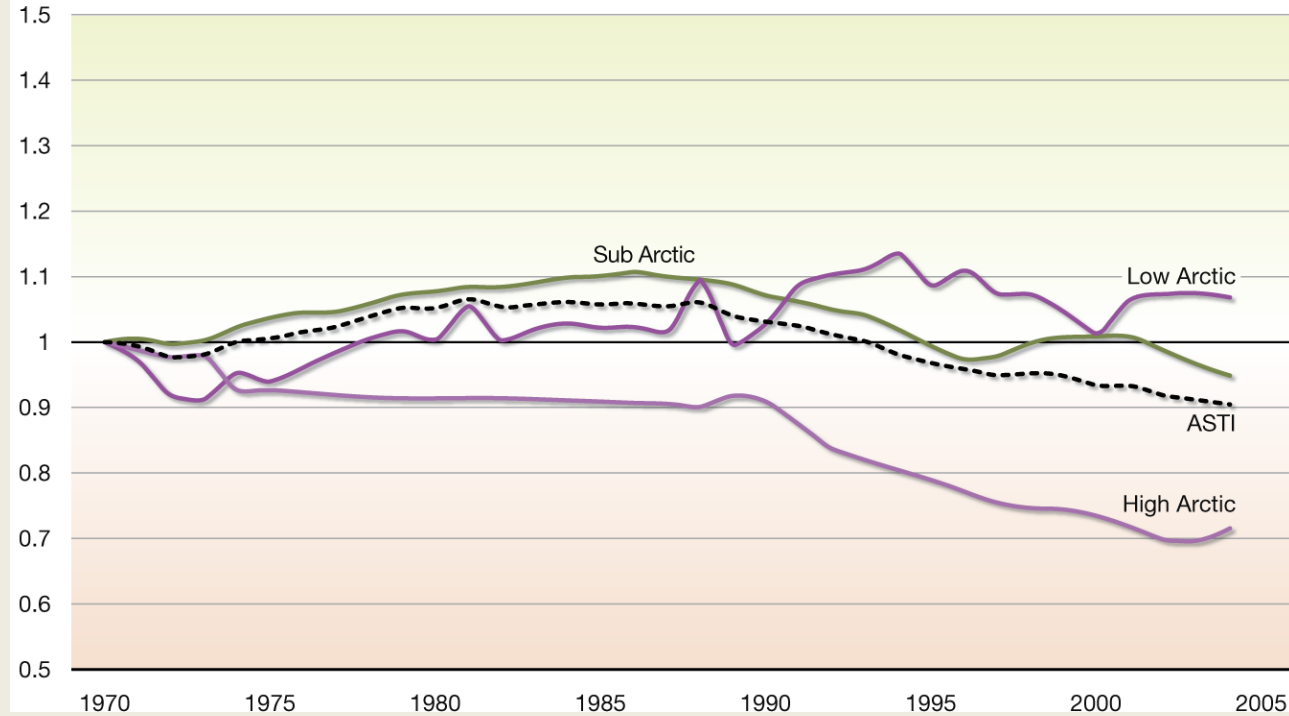
Ny teknologi  
(metoder, analyser mv.)





# CBMP outputs: Arctic Species Trend Index

Arctic terrestrial species trends  
Index 1.0 = 1970



[www.asti.is](http://www.asti.is)





# CBMP output: Arctic Biodiversity Data Service



DRAFT - Seabird Information Net

ABDS

Birds Portal Meta Data Survey Portal



ARCTIC PORTAL

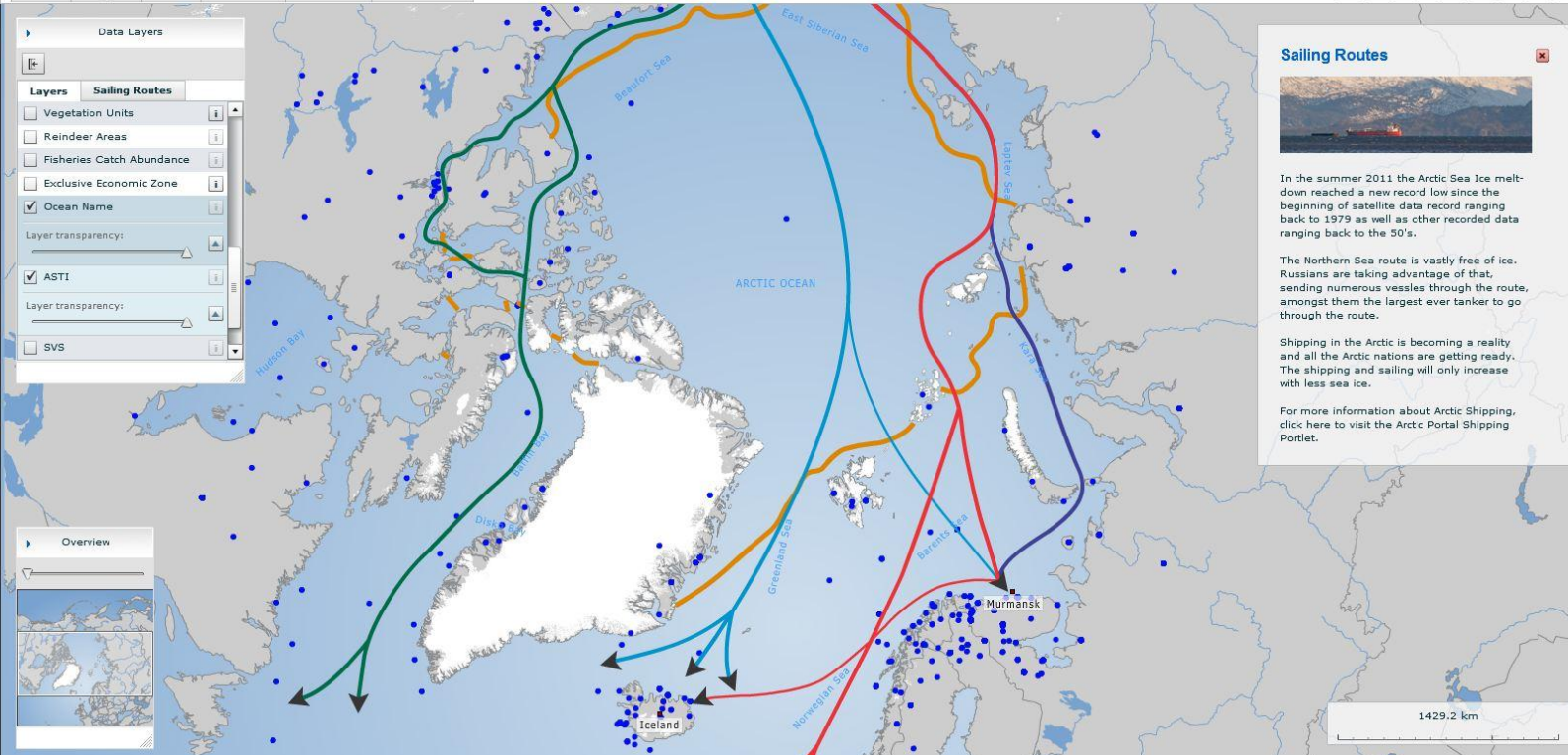
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Arctic Peoples World North Pole South Pole Arctic Council

Data Layers

Layers Sailing Routes

- Vegetation Units
- Reindeer Areas
- Fisheries Catch Abundance
- Exclusive Economic Zone
- Ocean Name
- Layer transparency: [slider]
- ASTI
- Layer transparency: [slider]
- SVS



### Sailing Routes

In the summer 2011 the Arctic Sea Ice melt-down reached a new record low since the beginning of satellite data record ranging back to 1979 as well as other recorded data ranging back to the 50's.

The Northern Sea route is vastly free of ice. Russians are taking advantage of that, sending numerous vessels through the route, amongst them the largest ever tanker to go through the route.

Shipping in the Arctic is becoming a reality and all the Arctic nations are getting ready. The shipping and sailing will only increase with less sea ice.

For more information about Arctic Shipping, click here to visit the Arctic Portal Shipping Portlet.

About Help

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Groups Search Measure

- Arctic Tourism
- Organizations in the Arctic
- Arctic Boundary Lines
- Arctic Coastal Dynamics
- Arctic Shipping
- Arctic Definition
- Arctic Sea Ice
- The three Arctic Poles
- Weather in the Arctic
- Webcams around the Arctic
- Fire Information
- Potential Oil & Gas fields

POWERED BY Google Earth

seabirds

Start Date: 10/17/1829

sets and web mapping services. Sign up to receive updates and layers.

data from circumpolar networks and assessments.

use in publications and reports.

publications and reports.

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Designed by Arctic Portal

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Glaucous-winged Gull



## Internationale links:

- Arctic Biodiversity Assessment – ABA
- Andre Arktisk Råds arbejdsgrupper og projekter; AMAP, PAME (AMSA follow up), AMSA, EBM, SAON
- INTERACT
- Biodiversitetskonventionen. COP10 Decision X/13 samt, delmål 5 (om tab af naturlige levesteder), 10 (om sårbare økosystemer, 11 (om beskyttede områder), 12 (om truede arter), 14 (økosystemydelse).
- UNEP Biodiversity Partnership (fokuserer på CBD 2020 mål)
- Global Earth Observation: Biodiversity Observation Network (GEO BON)
- Global Biodiversity Information Facility (GBIF)

## Nationale links:

- GEM – strategien (reelt en national CBMP).
- En række eksisterende monitoringsindsatser relateret til strategisk vigtige arter i Grønland
- En række mål i Rigets arktiske strategi
- Nye etablerede danske platforme, herunder ARC



TAK



**Fotos af:**

Carsten Egevang/[ARC-PIC.COM](http://ARC-PIC.COM)

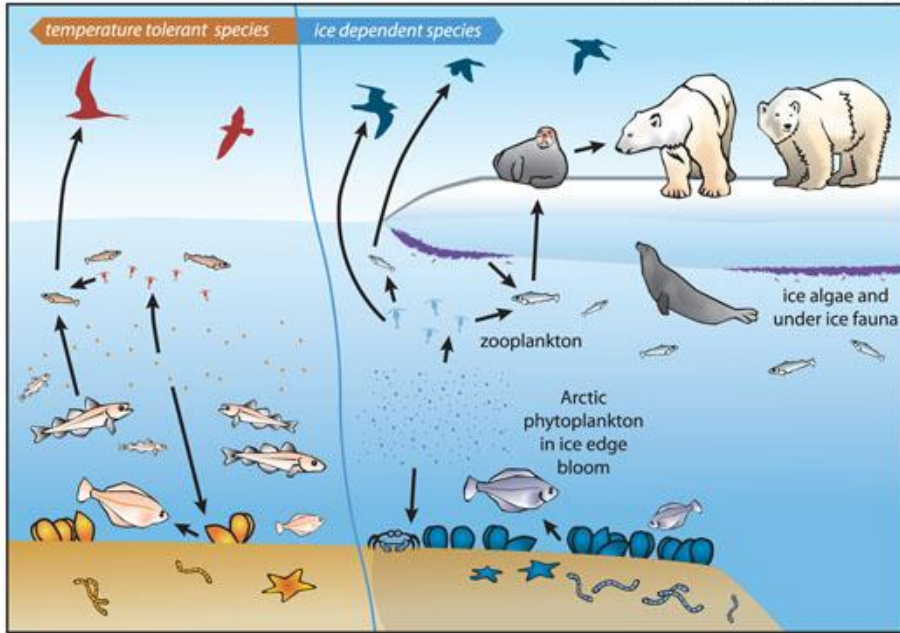
David Boertmann

Lars Holst Hansen

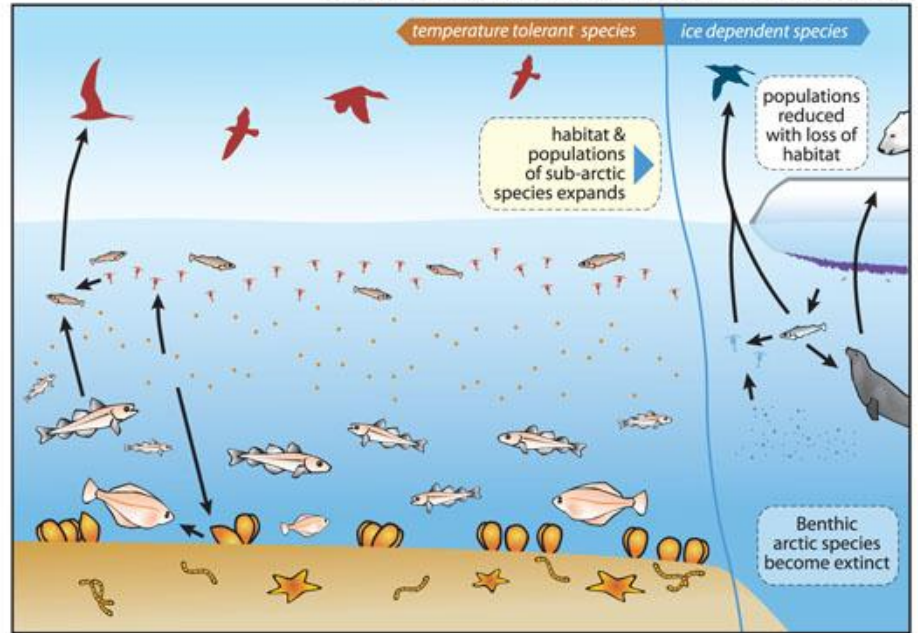
Pavel Svoboda/[shutterstock.com](http://shutterstock.com)



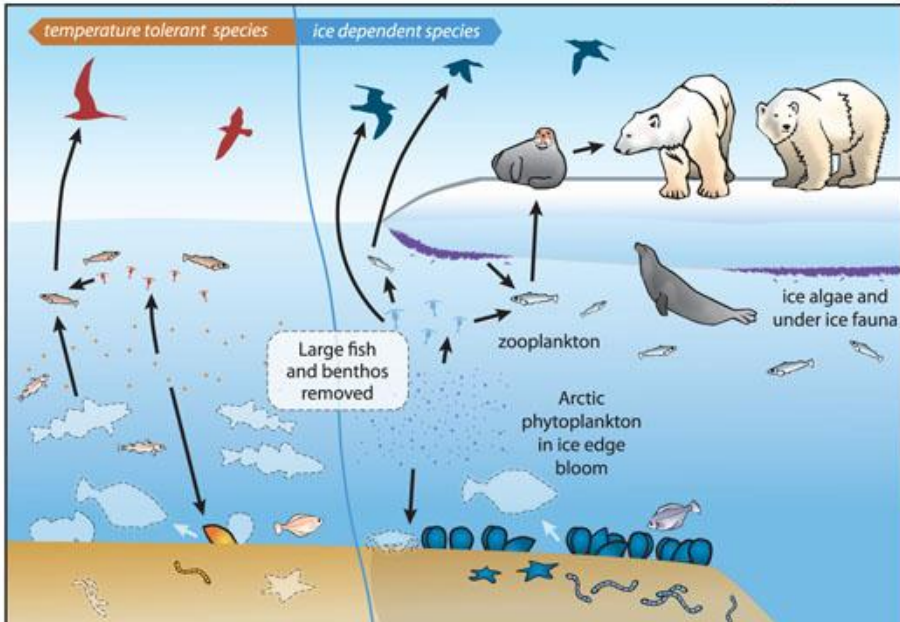
**Normal Arctic Food Web**



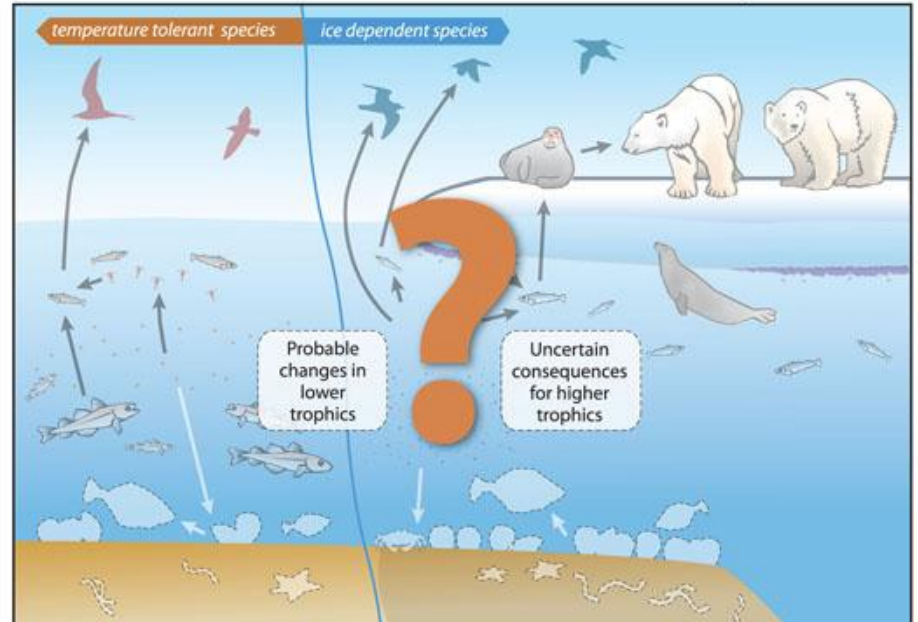
**Arctic Food Web as influenced by Climate Change**



**Arctic Food Web as influenced by Fisheries**



**Arctic Food Web as influenced by acidification**





# CBMP outputs: Årlige Arctic Report Cards

## Arctic Report Card: *Update for 2011*

Tracking recent environmental changes

Home
About
Printouts ▾
Previous Report Cards
NOAA Arctic Theme Page
Contacts

**HOME**

Executive Summary

Baselines & Trends

**ATMOSPHERE**

Temperature & Clouds

Carbon Dioxide & Methane

Ozone & UV Radiation

**SEA ICE & OCEAN**

Sea Ice

Wind-driven Ocean Circulation

Ocean Temperature & Salinity

Sea Level

Ocean Acidification

**MARINE ECOSYSTEMS**

Ocean Biogeophysics

Primary Productivity

Benthic Organisms

Polar Bears

Whales & Seals

Pacific Arctic Marine Ecology

**TERRESTRIAL ECOSYSTEMS**

Vegetation

Caribou & Reindeer

**HYDROLOGY & TERRESTRIAL CRYOSPHERE**

Snow

Glaciers & Ice Caps

Greenland Ice Sheet

Permafrost

What's new in 2011?

**Persistent warming has caused dramatic changes in the Arctic Ocean and the ecosystem it supports.**

Ocean changes include reduced sea ice and freshening of the upper ocean, and impacts such as increased biological productivity at the base of the food chain and loss of habit for walrus and polar bears.

**2011 by Chapter**

**Atmosphere** ●

Higher temperatures in the Arctic and unusually lower temperatures in some low latitude regions are linked to global shifts in atmospheric wind patterns.

**Marine Ecosystems** ●

Since 1998, biological productivity at the base of the food chain has increased by 20%. Polar bears and walrus continue to lose habitat in Alaskan waters.

**Hydrology & Terrestrial Cryosphere** ●

Continued dramatic loss of ice sheet and glacier mass, reduced snow extent and duration, and increasing permafrost temperatures are linked to higher Arctic air temperatures.

**Status**

●

●

●

Significant change

Some change

Little or no change

Arctic Report Card 2011 Share ▾ More info

▶ ⏪ 0:00 / 2:26 ⌂ YouTube ⌵