



# Circumpolar Biodiversity Monitoring Program

## IMPLEMENTATION

Arctic Biodiversity Congress  
Rovaniemi, Finland 2018



- A reminder that the mandate for CBMP is
  - to address the conservation of Arctic biodiversity, and to communicate its findings to the governments and residents of the Arctic, helping to promote practices which ensure the sustainability of the Arctic's living resources
- This includes Monitoring, assessment, data management, communication
- We are interested in how SAMBR helps address or implement this mandate – made an initial assessment through series of interviews with

scientists and resource managers



## Elements Of Implementation

- Outreach
- Application of Report Findings
- Addressing Data Gaps



- Helped to think about steps in implementation
- The first step is outreach, in this case, generally broadcasting availability of the report as broadly as possible – make report available
- The next aspect is the application of report findings, in other words how is the description of the Arctic and various trends used .
- Finally, addressing data gaps includes acceptance of picture painted and then efforts to fill data gaps identified in the report



## Outreach

- Report and Key Findings Documents
- Presentations at National and International Conferences
- Direct contact



Outreach important to let people know about report so they can use it and also report back to the scientific community that provided information.

Key Outreach Accomplishments:

1. Written report and key findings – both in print and available digitally
2. Scientific meetings – AMSS and World Conference and this Biodiversity forum
3. Direct contact – this is a specific effort we took in the US to essentially survey users and those that may contribute to data gaps so the resource management community and the scientific community

## Application of Report Findings

- Primarily in Resource Management agencies
- Useful summary report
- Relationship with other agency priorities

- Direct use of findings in the report, such as the projected trends and environmental characteristics
- Management agencies involved in evaluating resource extraction and other environmental impacts found report generally useful; helpful for preparing background aspect of environmental reviews
- In terms of using recommendations to specify required studies; specific agency priorities override these recommendations



## Use of Advice for Monitoring

- Overlap with existing programs
- Challenges
  - Incorporation of traditional knowledge
  - Data archiving and accessibility
  - Coordination



- Subset of Application of Report findings - As part of our interviews, asked about the utility of the general advices provided to improve monitoring.
- The advices in general resonated with folks we talked with.
- Specific Challenges were noted with the incorporation of traditional knowledge; which is a complex issue. All agencies and most researchers mentioned that they and their institutions strive for inclusion with varying success. Many differing strategies are employed and no single strategy stands out as universally successful although strategies that focus on inclusion of Traditional knowledge through partnership is recognized as an important aspect Note lots of efforts to increase effectiveness of communication both in presenting scientific information and in collating and presenting traditional knowledge.
- Another suite of challenges relates to data, both collection and archival.
- This comes under coordination – and highlights the need to increase coordination between various monitoring efforts so that data collection is comparable

## Addressing Data Gaps

- Conclusions resonated
- Brought people together
- Active identification of projects which could build upon and leverage work of SAMBR

As a first check – the report did resonate with a wide variety of scientists – reflected current state of knowledge.

Bringing scientists together and creating linkages provides a basis for future collaborations – some examples include Lis at Seattle



## Incorporation in other Monitoring programs

- Active incorporation
- Passive – related to overlapping personnel
- Funding sources have their own sets of priorities
- Difference in scale (site specific vs regional vs circumpolar)

- A primary goal is to advocate for and seek active incorporation of CBMP monitoring into existing monitoring efforts as well as future ones (inclusion in overall program guidance) This is an aspect that the US will be pursuing
- There is passive incorporation and this is related to overlapping personnel – same people involved in CBMP are also involved in regional monitoring efforts – for example Norway has ecosystem based management plans for Norwegian sea areas; common indicators between ebm and CBMP; scientists same or well known
- Priorities are driven by funding sources (e.g. NSF; NPROB) in some cases, there is overlap but not all (potential area to explore)
- Advise is Circumpolar and large scale; many programs are more site specific. To work up to regional level, need to recognize diffs in scale and to develop standards for data collection so information throughout region is comparable.

## Data standards



## CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM

# Status of circumpolar marine biodiversity monitoring by Focal Ecosystem Component and Arctic Marine Area



Quick note that one outcome we hope for is to change the colors of these spots – move from sporadic/none to good/moderate

This also provides a spotlight on regions that are truly data and information deficient

## Status table

Species	Subpopulation/ Stock	CBMP Arctic Marine Area	Abundance (with 95% confidence interval (CI) or coefficient of variation (CV) if available)	Year	Status: Unknown (U), Reduced (R) or Not Reduced (N)	Trend: Unknown (U), Increasing (I), Stable (S), Declining (D)	Harvest: harvested without quota (H), harvested with quota (HQ), currently protected (P)	Survey/trend reference from Laidre et al., unless noted
Bearded seal	<i>E. nauticus</i> subspecies		Unknown total					
	-Bering Sea	Pacific Arctic	>299,000	2012	Unknown	Unknown	HQ (Russia), H (USA)	Conn et al 2014
	-Chukchi Sea	Pacific Arctic	27,000	2000	Unknown	Unknown	HQ (Russia), H (USA)	Cameron et al 2010
	-Beaufort Sea	Beaufort	Unknown		Unknown	Unknown	H	
	-East Siberian Sea	Pacific Arctic	Unknown		Unknown	Unknown	HQ (Russia), H (USA)	
	<i>E. horbatus</i> subspecies		Unknown total				H	
	- Eastern Canada and West Greenland	Arctic Archipelago, Davis-Baffin, Hudson Bay			Unknown	Unknown	H	
	"Canadian waters component"	Arctic Archipelago, Davis-Baffin, Hudson Bay	190,000	1958-1979	Unknown	Unknown	H	Cleator 1996
	- East Greenland	Atlantic Arctic	Unknown		Unknown	Unknown	H	
	- Svalbard & Barents Sea	Atlantic Arctic	Unknown		Unknown	Unknown	H	
	- White, Kara & Laptev Seas	Atlantic Arctic, Kara & Laptev	Unknown		Unknown	Unknown	HQ (Russia), H (Norway)	
Ribbon seal	Bering Sea	Pacific Arctic	143,000	2007	Unknown	Unknown	HQ (Russia), H (USA)	Boveng et al. 2013
Harp seal	Northwest Atlantic	Davis-Baffin, Atlantic Arctic	7,420,000 (95% CI 6,360,000 - 8,360,000)	2012	Not Reduced	Stable	H (Greenland), HQ (Canada)	Harmill et al. 2015
	Greenland Sea	Atlantic Arctic	627,410 (95% CI 470,540 - 784,280)	2012	Not Reduced	Increasing	H (Greenland), HQ (Norway)	ICES 2013
	White Sea	Atlantic Arctic	1,419,800 (95% CI 1,266,910-1,572,690)	2013	Reduced	Stable	HQ (Norway) P (Russia)	ICES 2013
Hooded seal	Northwest Atlantic	Davis-Baffin, Atlantic Arctic	593,500 (95% CI 404,400-728,300)	2005	Reduced	Increasing	H (Greenland), HQ (Canada)	Harmill and Stenson 2006
	Greenland Sea	Atlantic Arctic	84,020 (95% CI 68,060-99,980)	2013	Reduced	Decreasing	H (Greenland), P (Norway)	Øigård et al. 2014
Spotted seal	Bering sea	Pacific Arctic	>460,000	2012	Unknown	Unknown	H	Han et al. 2010



# Recommendations

Maintain Scientists involvement  
Enhance data systems  
Improve communication with and involvement of stakeholders

