

# Integrating Scales Across Different Knowledge Systems for EBM

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# NAMMCO

## North Atlantic Marine Mammal Commission

*26 years of Regional Marine Mammal Management in the North Atlantic*



### Intergovernmental Organisation

Providing Advice for Marine Mammal Management in the North Atlantic

Four Member Parties:



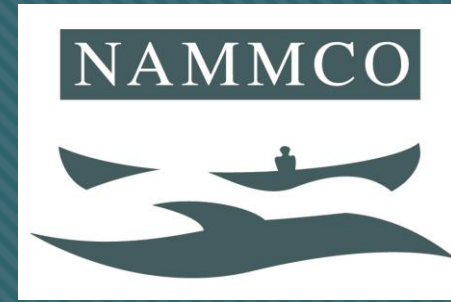
*Sustainability - Responsibility*  
*Transparency - Accountability*



Photo Credit: Audun Rikardsen

# NAMMCO

## North Atlantic Marine Mammal Commission



Parties Recognise:

the **rights, needs and duties** of coastal communities



Parties Committed To:

Effective  
conservation

Sustainable and  
responsible  
utilisation

Best available  
science & local  
knowledge

Ecosystem-  
based approach

# Management Advice for a Complex Socio-Ecological System

## Hunting

## Climate Change

- Ecosystem changes
- Sea ice loss
- New/invasive species
- Disease

## Fishing

- By-catch
- Habitat disruption & destruction
- Competition



## Pollution

- Oil spills
- Contaminants
- Plastics

## Noise Disturbance

- Oil & gas exploration
- Wind farm construction
- Pipelines
- Shipping

## Shipping

- Ship strikes
- Habitat disruption & destruction



# Different Knowledge Systems

- Compartmentalised
- Quantitative (numerate)
- Written Documentation
- Abstraction
- Generalisable
- Value-free ideal
- Short timeframe

(Western Science)

- Holistic
- Qualitative (innumerate)
- Oral Documentation
- Lived Experience
- Particular & Specific
- Integrated with morals & beliefs
- Long timeframe

(Local/Traditional Knowledge)

*not necessarily a complete match - can be variation within each*

# Choices Regarding Scale are Not Neutral

*'particular scalar fixes and configurations are discursively and materially constructed in order to strengthen the power and control of some while disempowering others'*

*Swyngedouw 2000, p.71*

## **The Politics of Scale**

Choices Regarding “Meaningful Scale” for EBM  
Can Favour Some Actors and Knowledge Systems  
& Disadvantage Others

# NAMMCO

## North Atlantic Marine Mammal Commission



**Geographic Scale:**  
North Atlantic

**Jurisdictional Scale:**  
Inter-governmental

**Temporal Scale:**  
Short-term advice (3-10 years)



# Upcoming Case: Narwhal in East Greenland

Quota restrictions recommended on the basis of science are being introduced step-wise while the population appears to be declining

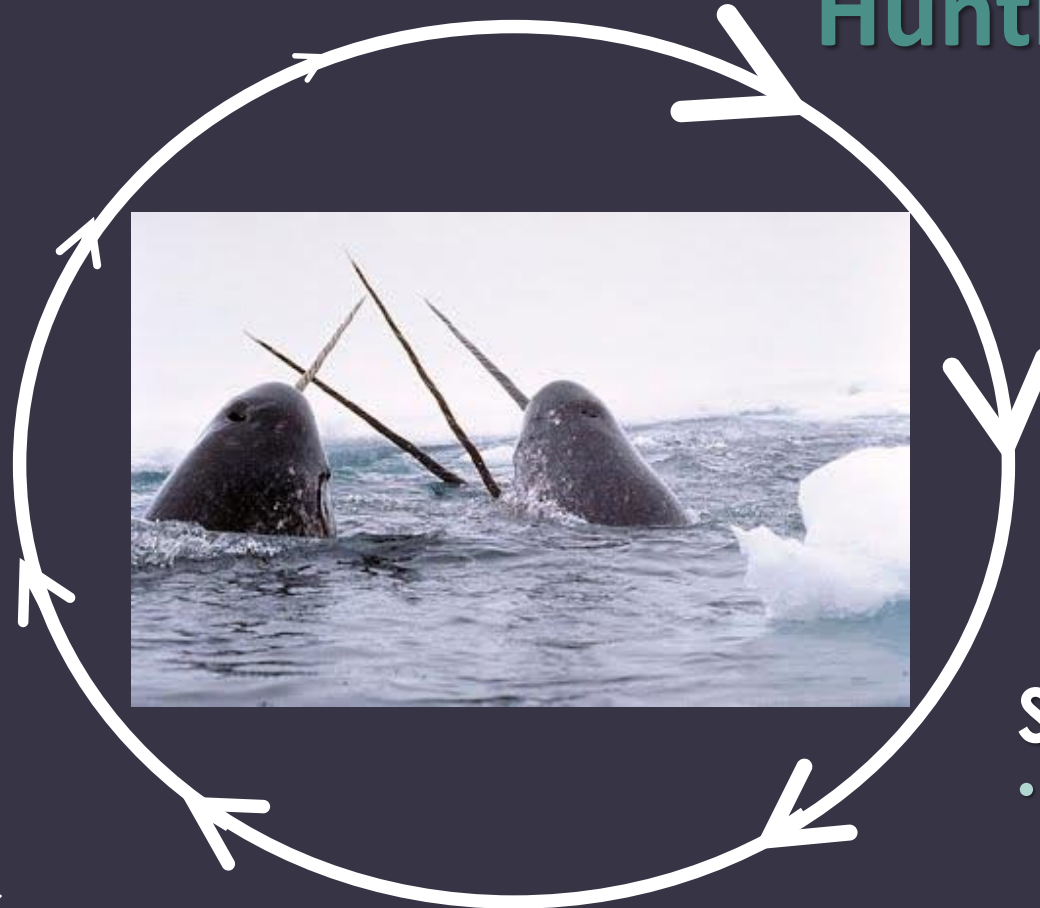
**Appropriate temporal scale?**

Disagreement between Scientists and Hunters on abundance & quotas - questions of distribution & migration patterns

**Appropriate geographical scale?**

Following EU ban on seal products, high value of mattak as delicacy is extremely important to hunters

**Appropriate jurisdictional scale?**



**Hunting**

**Fishing**

- Competition with Greenland Halibut

**Disturbance**

- Demonstrated sensitivity to noise

**Shipping**

- Source of potential disturbance

**Pollution**

- Contaminants
- Plastics

**Climate Change**

- Arctic species, affected by changes in ice/temperature





# Cross-Scale Integration

## Challenges

- Ignorance
- Mismatch
- Plurality

## Responses

- Institutional Interplay
- Co-management
- Boundary/Bridging Organisation

**Choices on scale in EBM  
are not neutral and can  
impact the ability to  
integrate different  
knowledge systems**

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*How are your choices on scale made?*

*What impact might these choices have?*

*Who might these choices favour/benefit?*

*Who might these choices disempower?*

