

# Integrated Ecosystem Assessment of the Central Arctic Ecosystem – a step towards implementing Ecosystem Approach to Management

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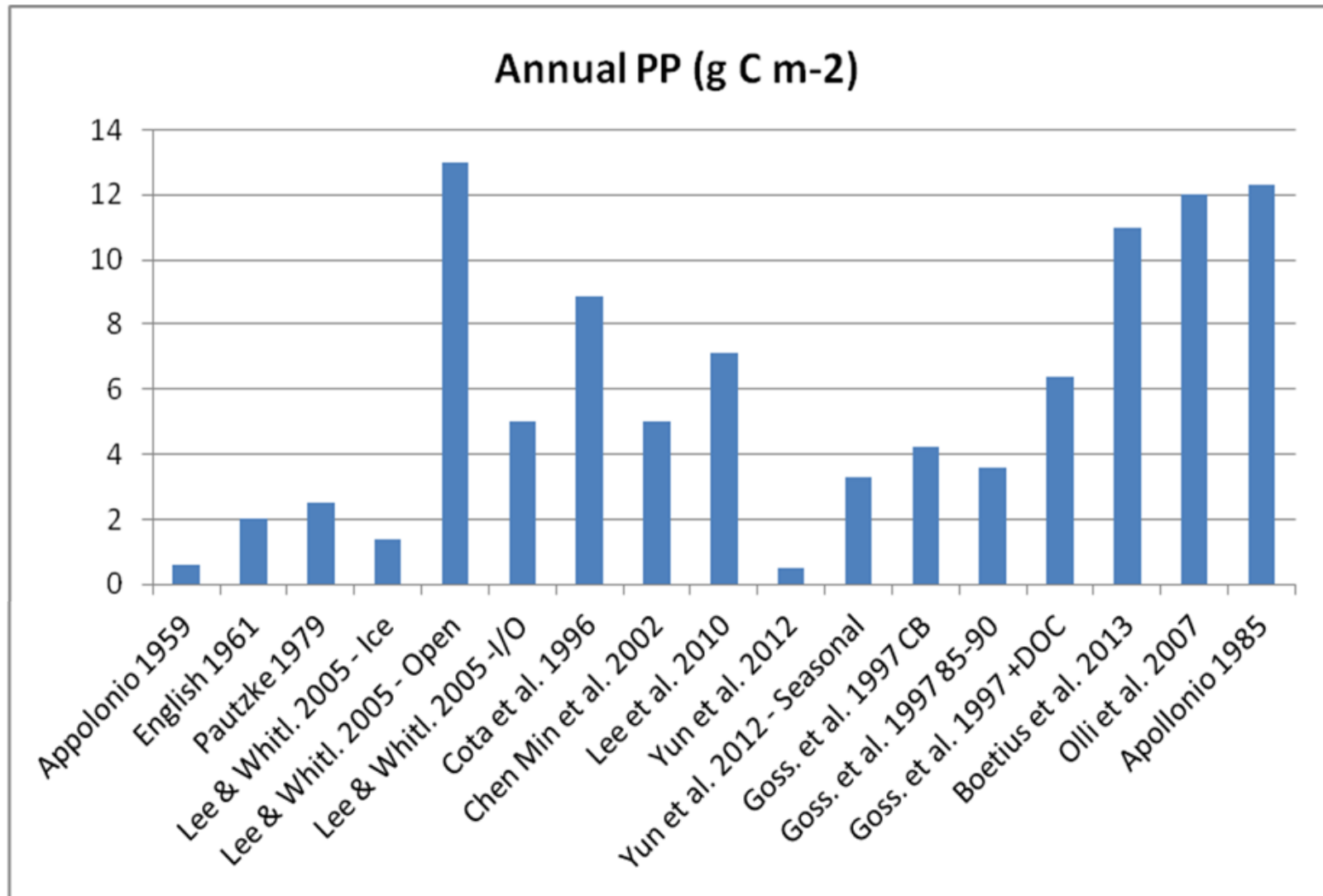
# ICES/PICES/PAME WGICA

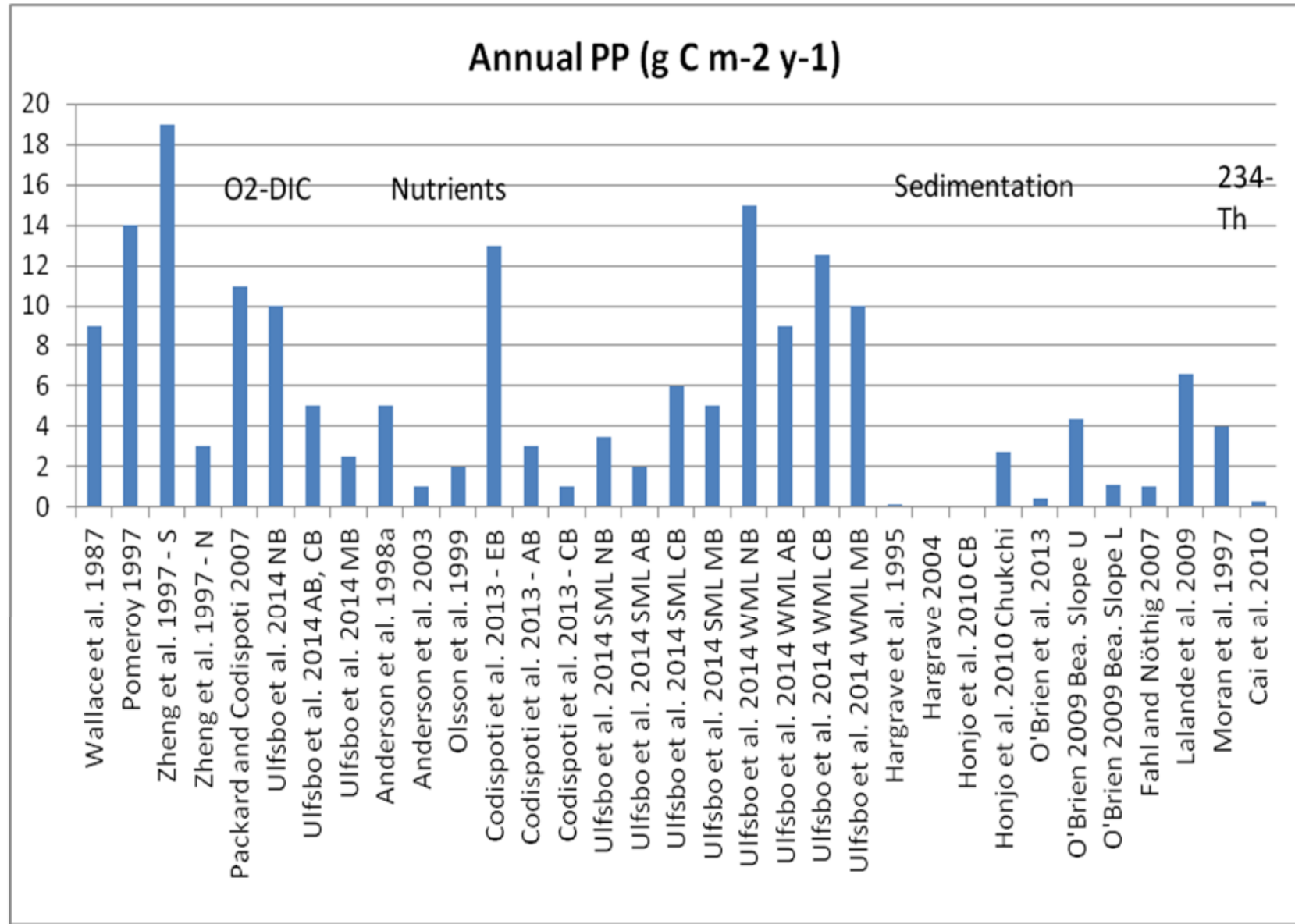
- Working Group on Integrated Ecosystem Assessment of the Central Arctic Ocean
- ICES – **International Council for Exploration of the Sea**
  - Science and Advice
- PICES – **North Pacific Science Organization**
- PAME – Protection of the Arctic Marine Environment
- 3 co-chairs:
  - John Bengtson, NOAA, USA
  - Sei-Ichi Saito, Univ. of Hokkaido, Japan
- 3rd meeting in St. John's, Newfoundland, Canada



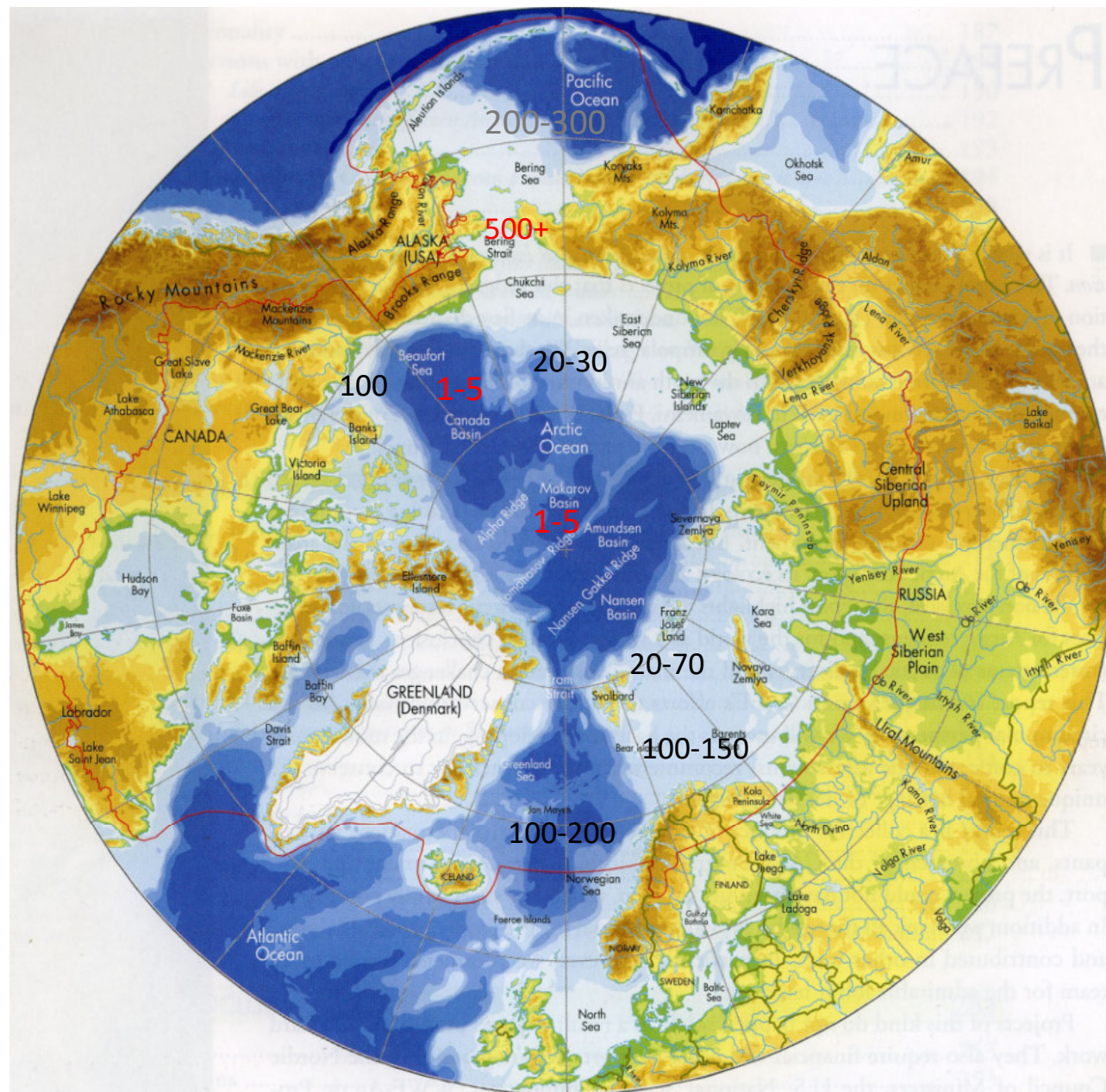
# IEA report for the CAO

- **Integrated Ecosystem Assessment of the Central Arctic Ocean: Ecosystem Description and Vulnerability Characterization**
- Ecosystem description with emphasis on **spatial aspects** and trophic (**food-web**) connections
- Oceanography, plankton, ice biota, benthos, fish, birds and marine mammals
- Vulnerability
  - general aspects (concepts, terminology, methodology)
  - Initial considerations of vulnerability to human activities – climate, pollution, fisheries,
  - **Shipping**

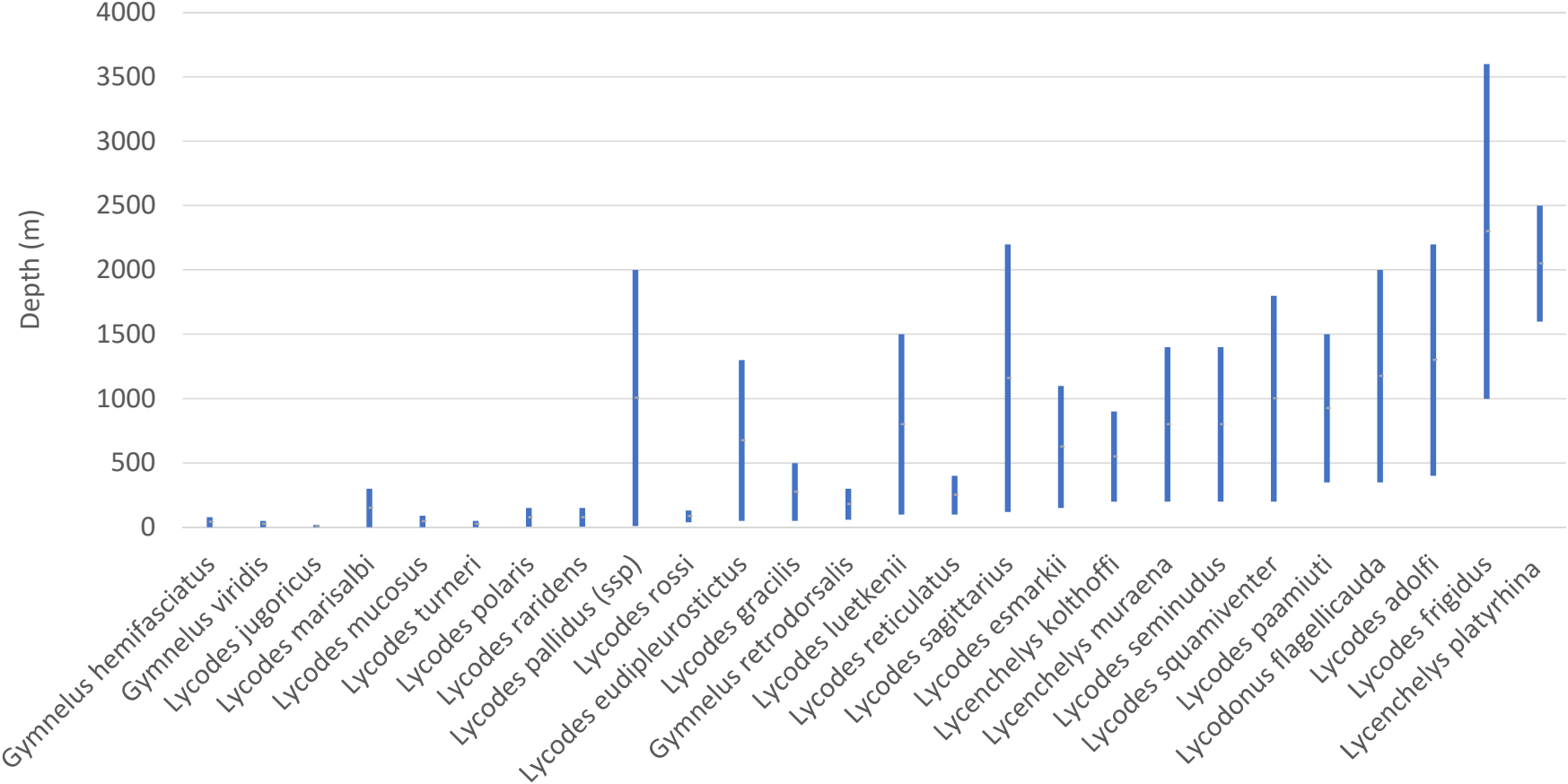




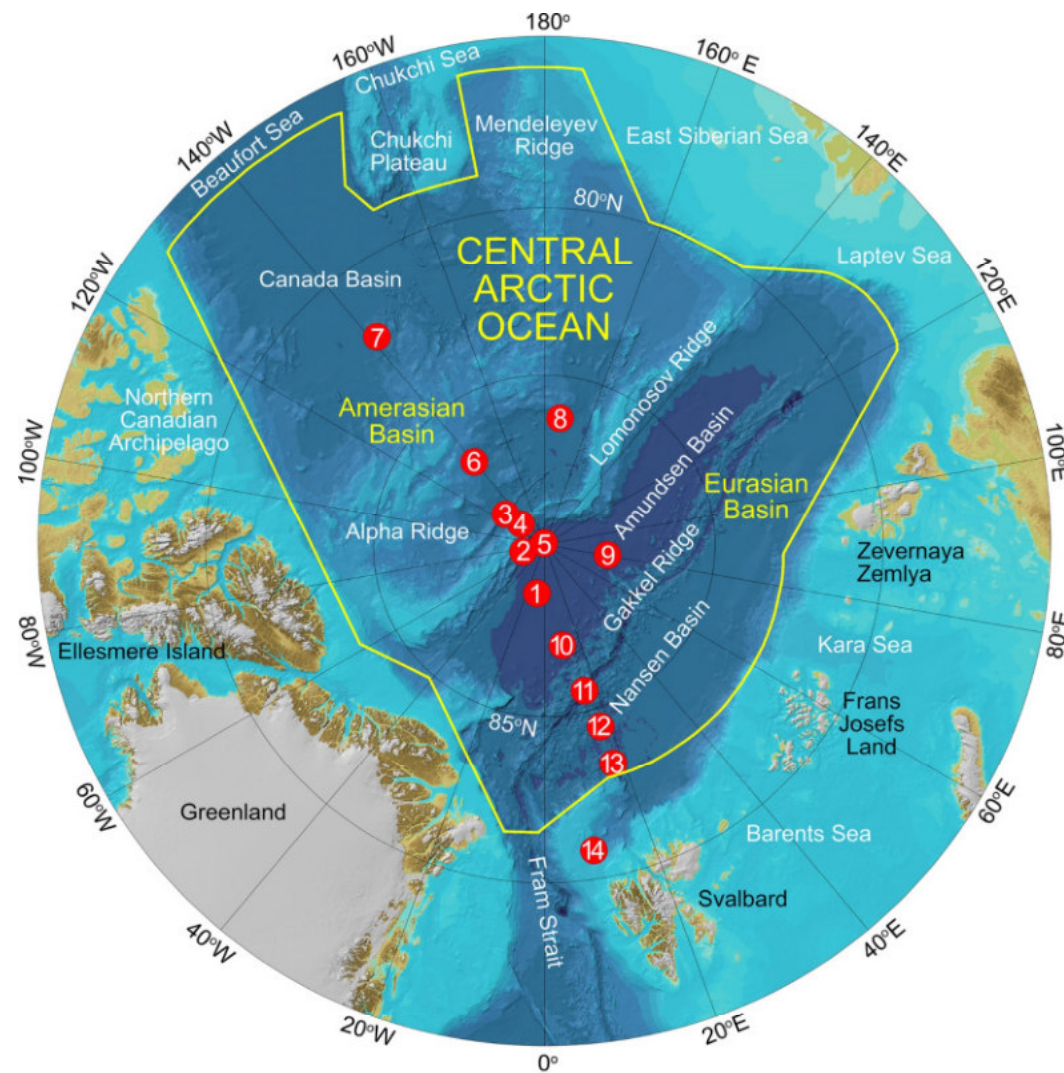




Eelpouts - Lycodidae

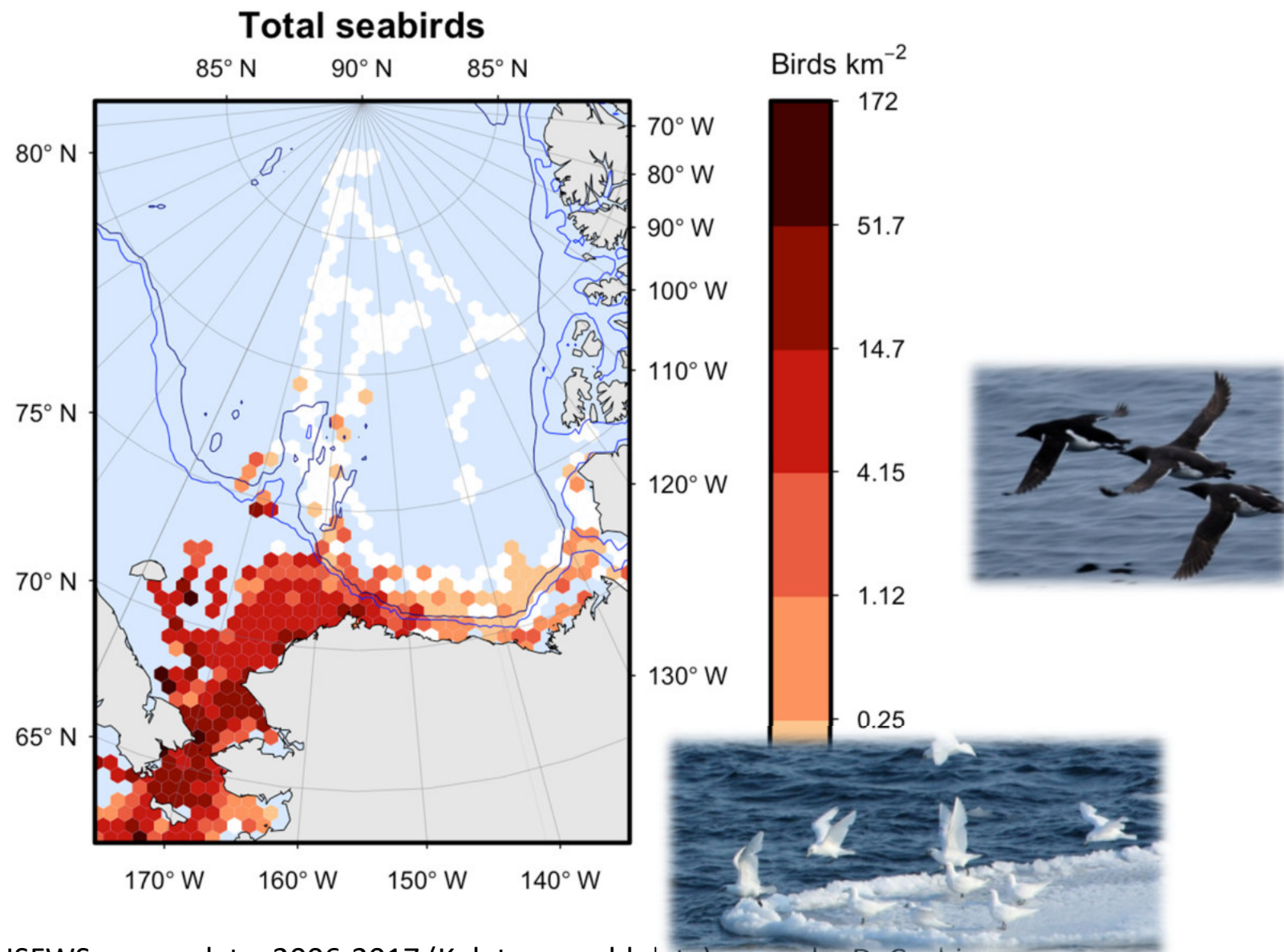






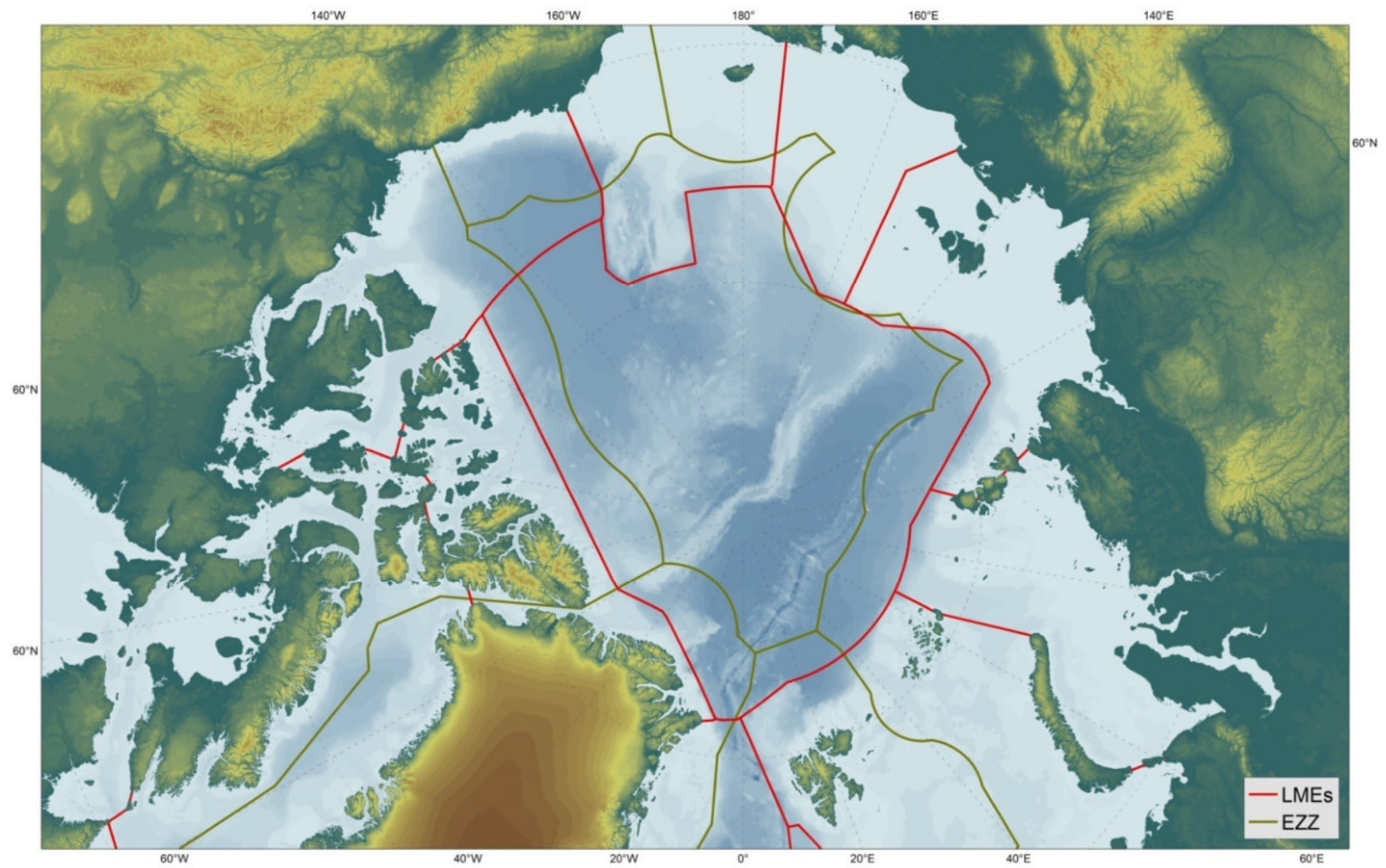
Swedish ice-breaker  
'Oden', 2016 cruise

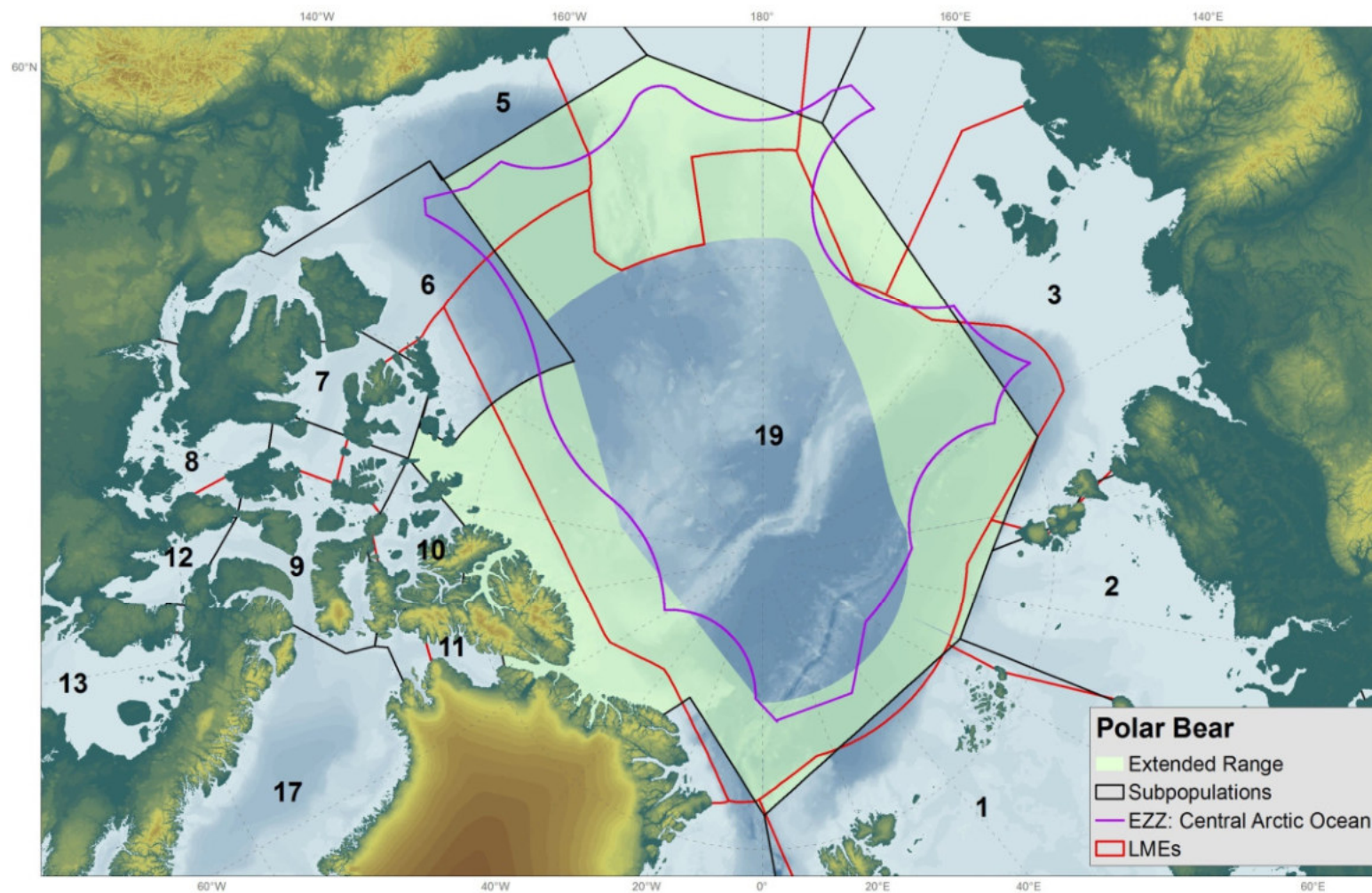
Pauline S. Lejonmalm  
et al. - manuscript



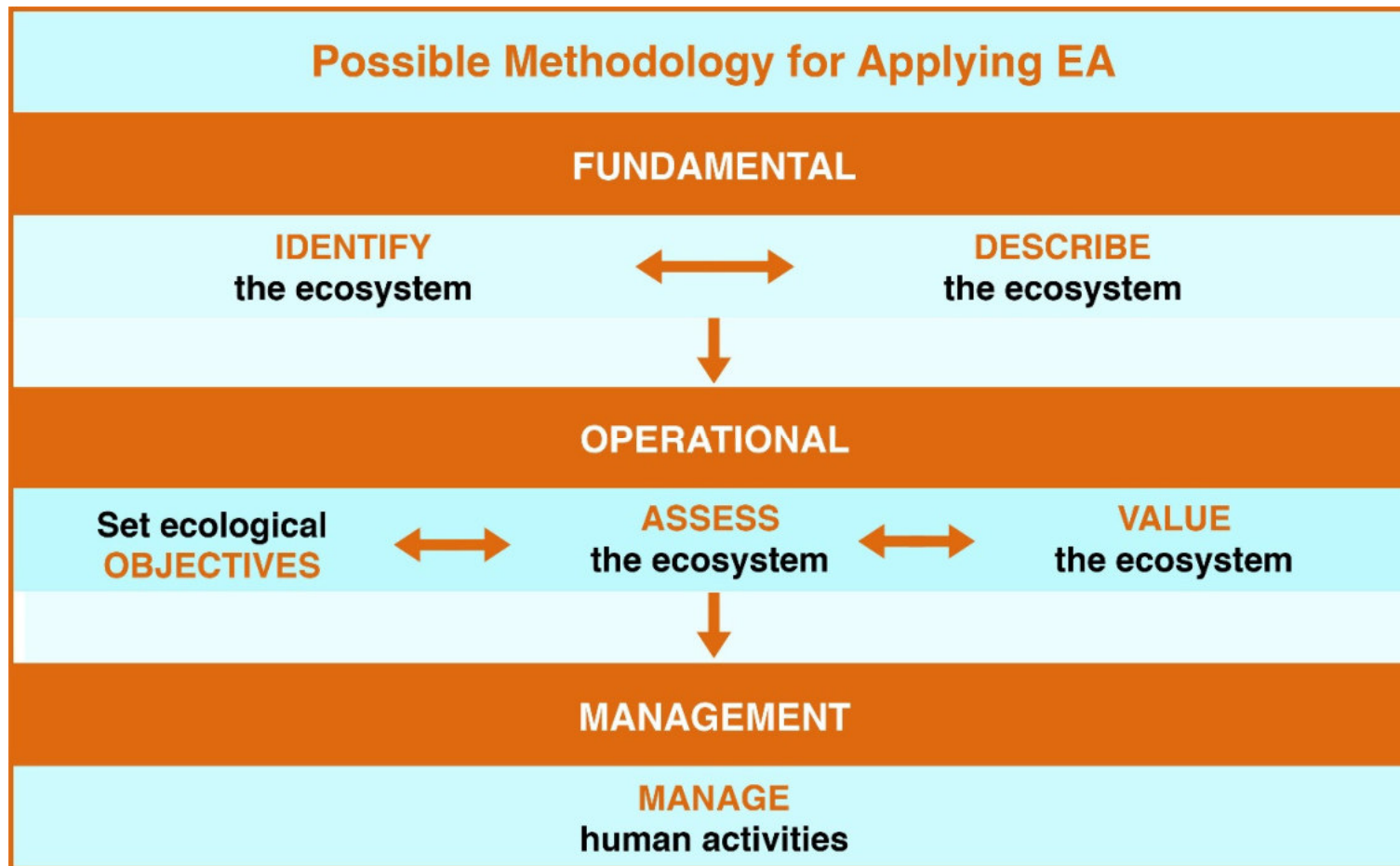
USFWS survey data, 2006-2017 (Kuletz, unpubl data); maps by D. Cushing







# EA Framework





WGICA



Integrated Ecosystem Assessment Groups in ICES

