

# Functional Diversity of Arctic Macrozoobenthos

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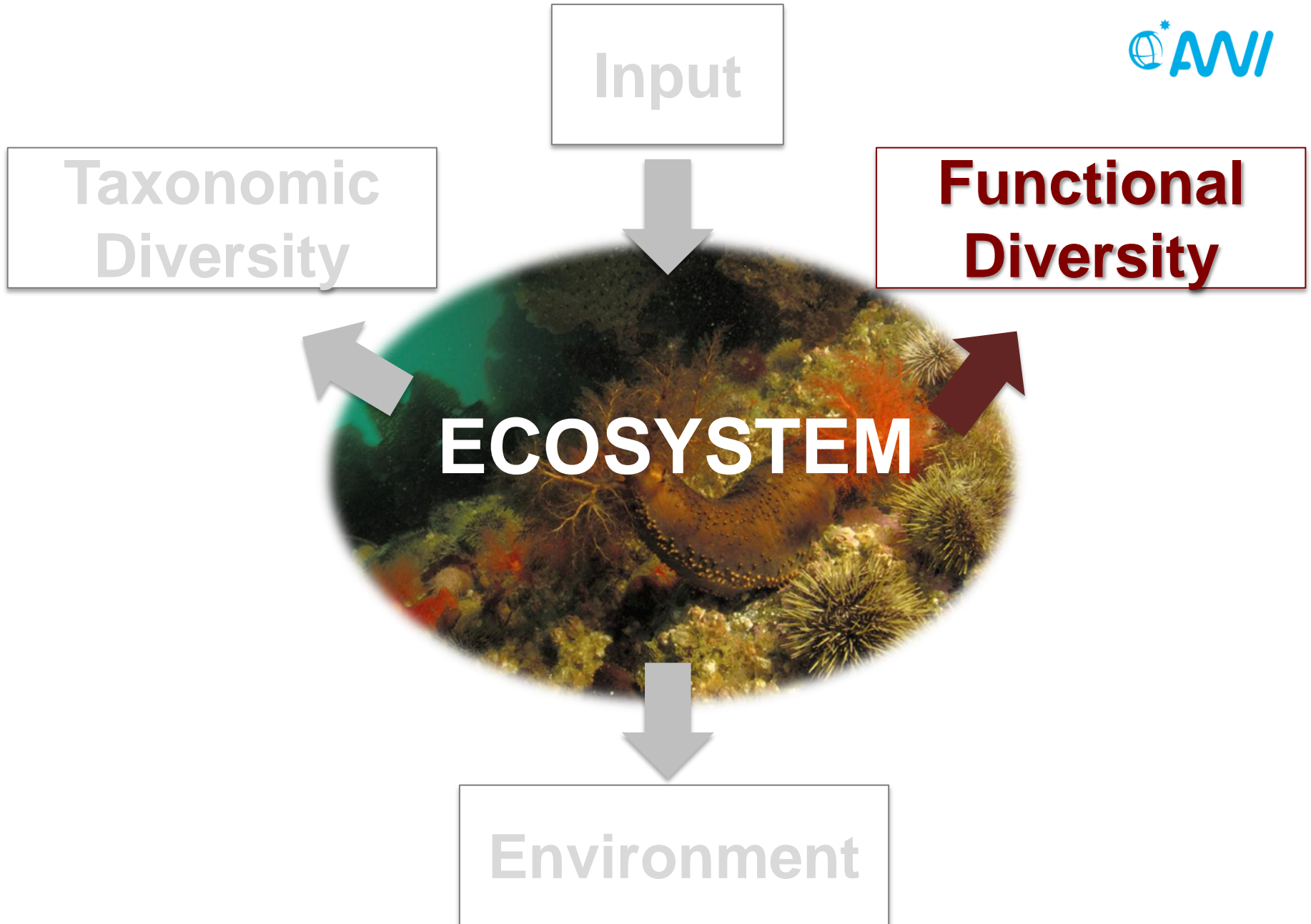


**Input**

**Taxonomic  
Diversity**

**ECOSYSTEM**

**Environment**



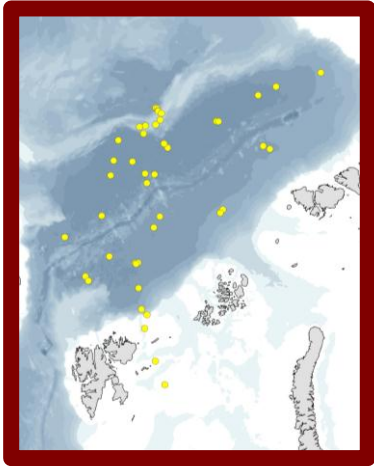
# What are functional traits?



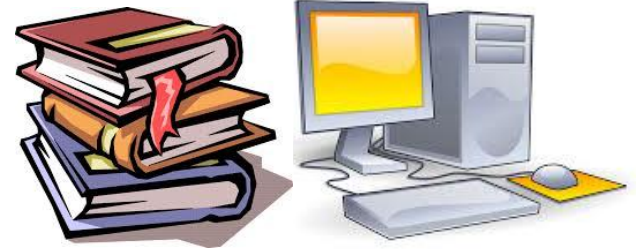
How we assess functional diversity?

Explain patterns along gradients?

Can we use it to assess effects of climate change?

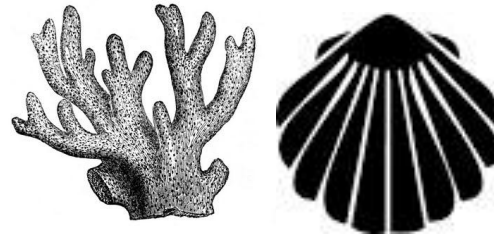


**Taxonomy  
Production**



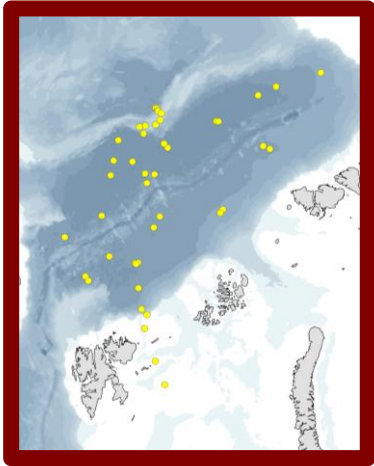
**Traits &  
fuzzy coding**

# Mobility

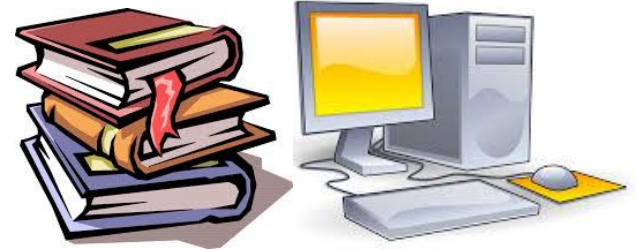


sessile	3	1
motile	0	1
semi-motile	0	3

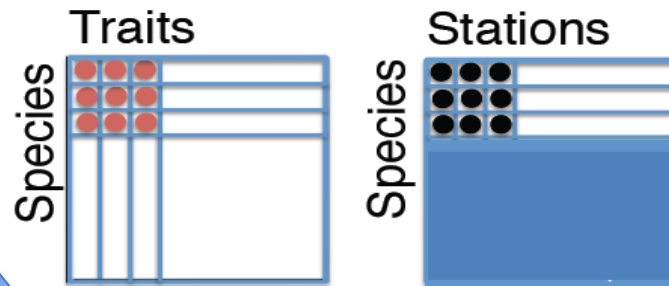
**„Fuzzy Coding“**



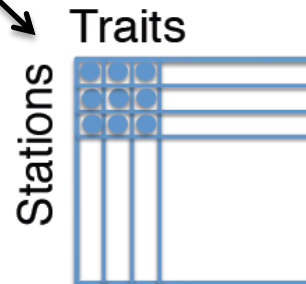
**Taxonomy  
Production**



**Traits &  
fuzzy coding**

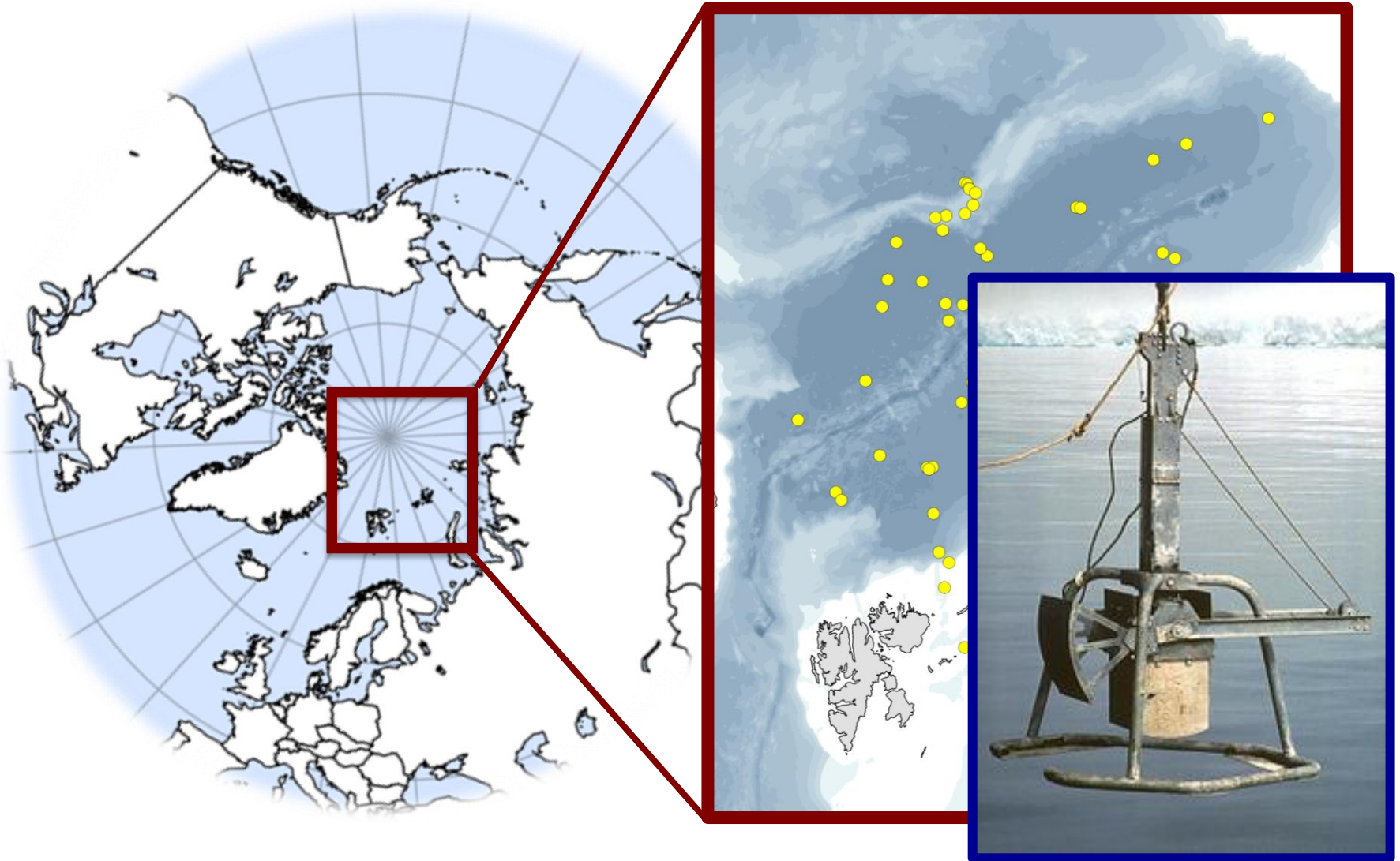


**Co-Inertia**



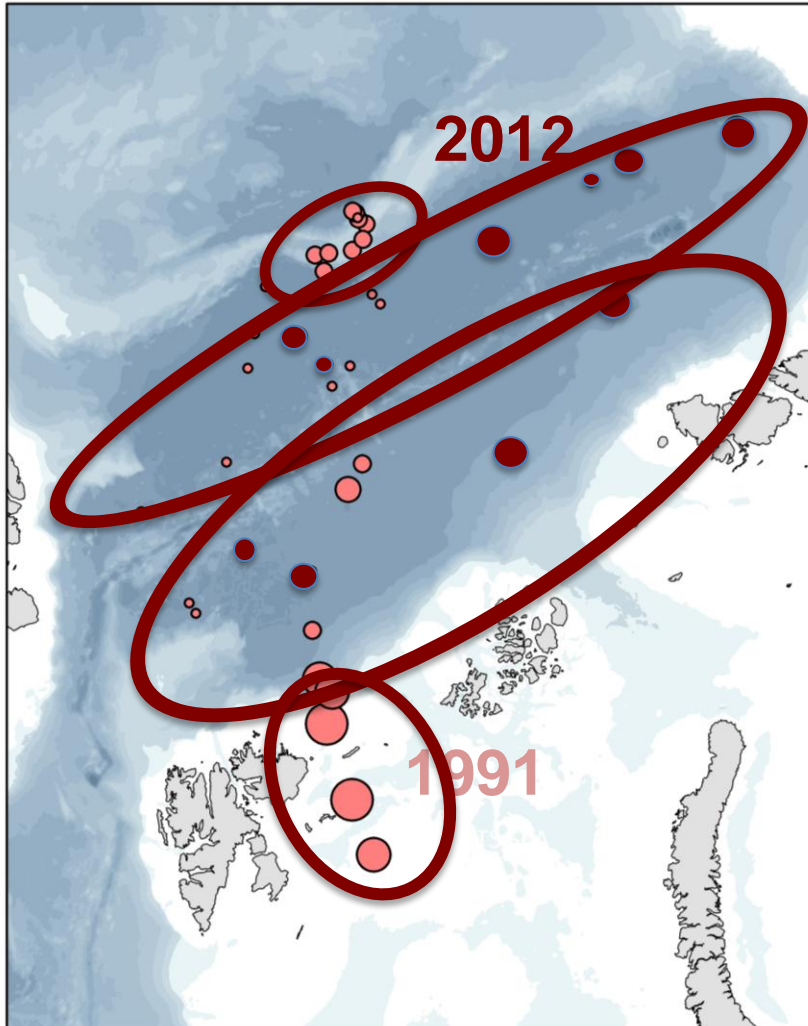
**Traits/Region  
nMDS**

# Study Area





# Secondary Production



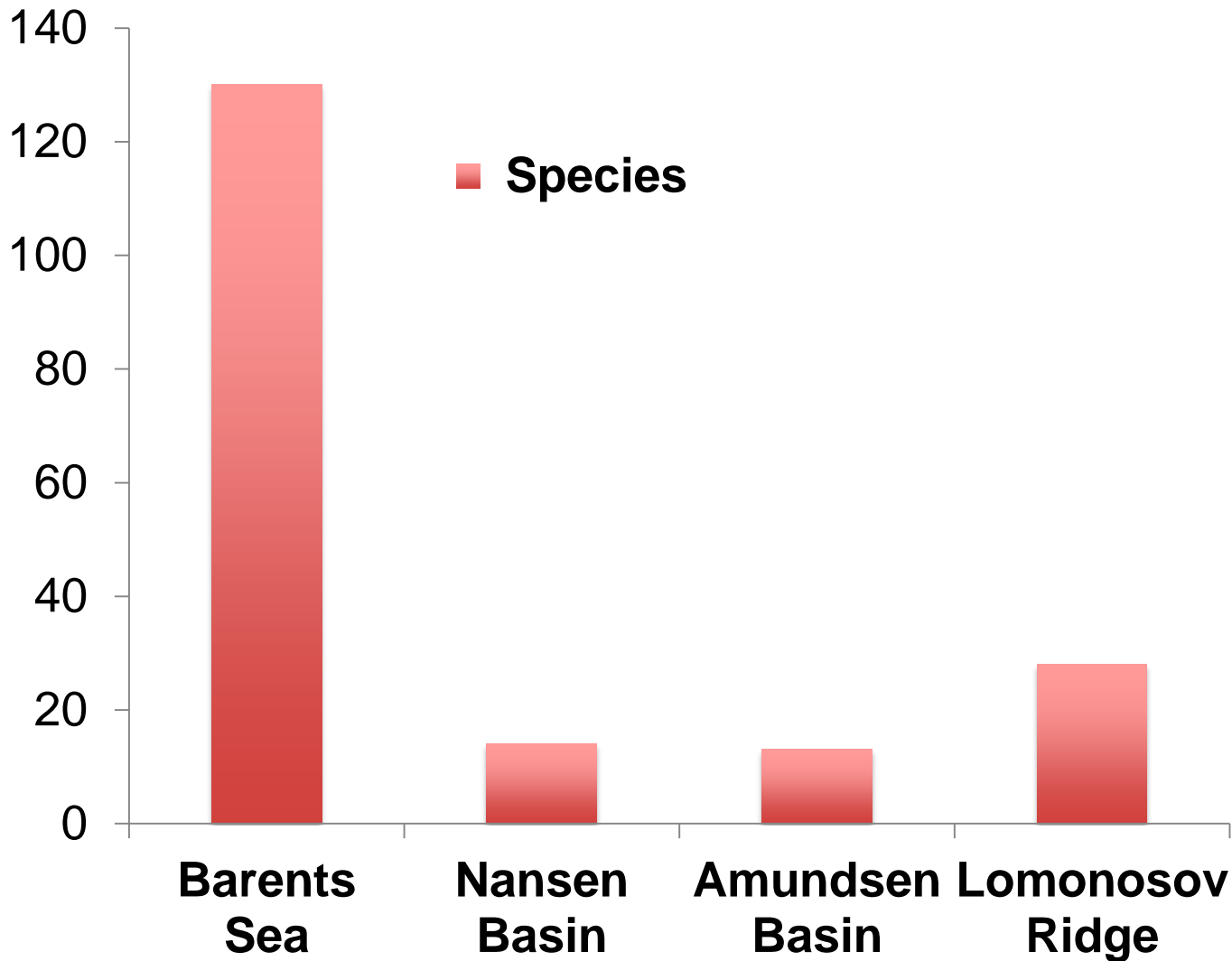
Lomonosov Ridge

Amundsen Basin

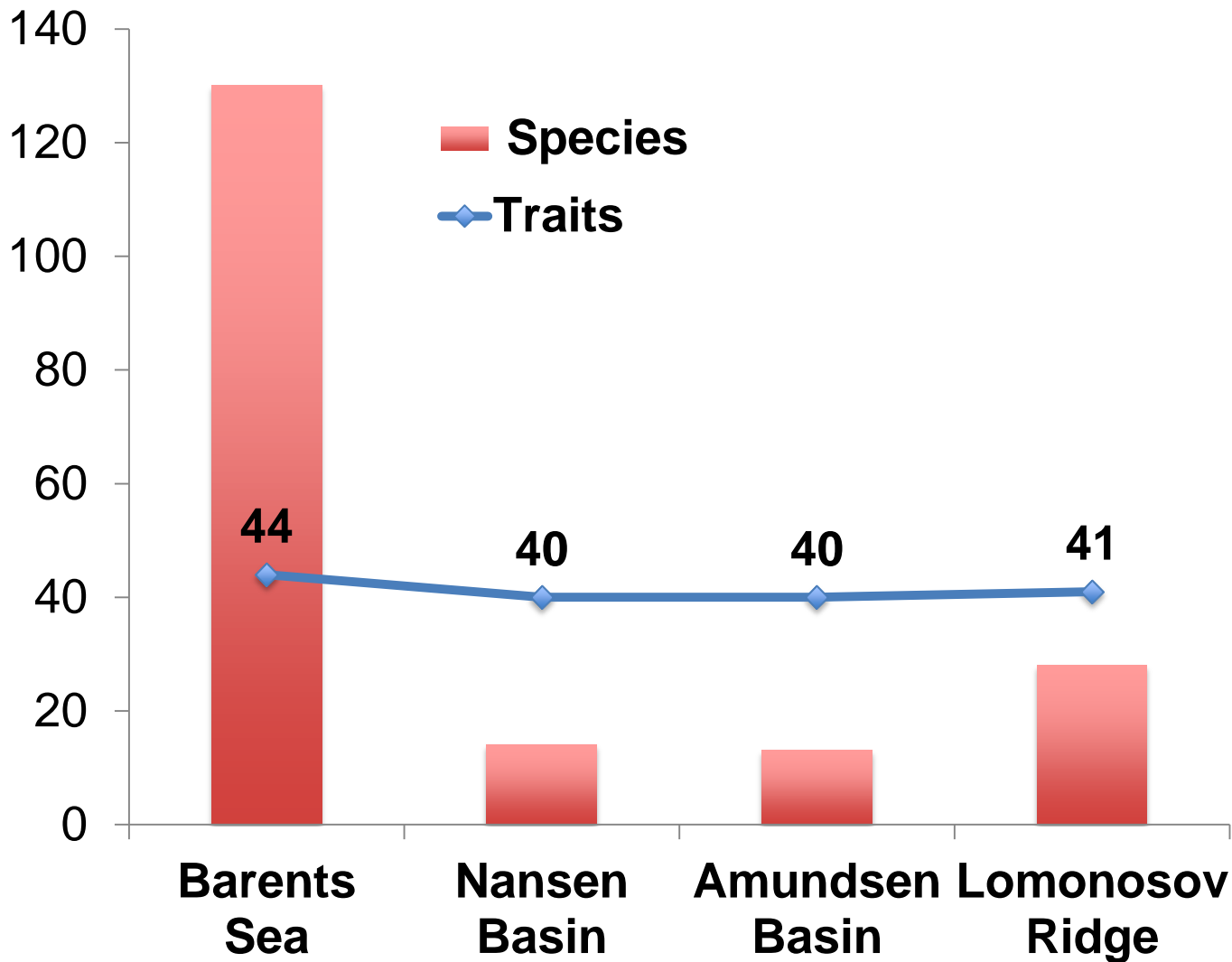
Nansen Basin

Barents Sea

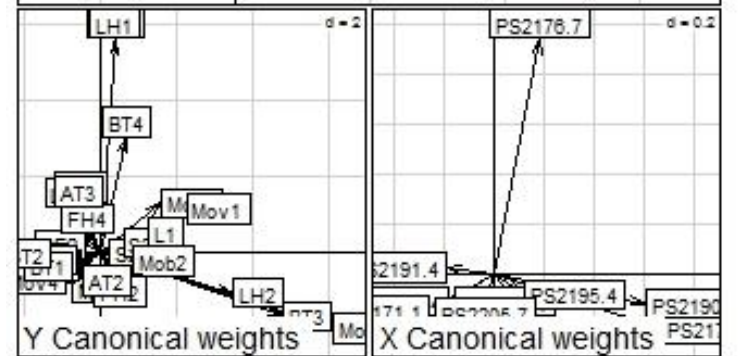
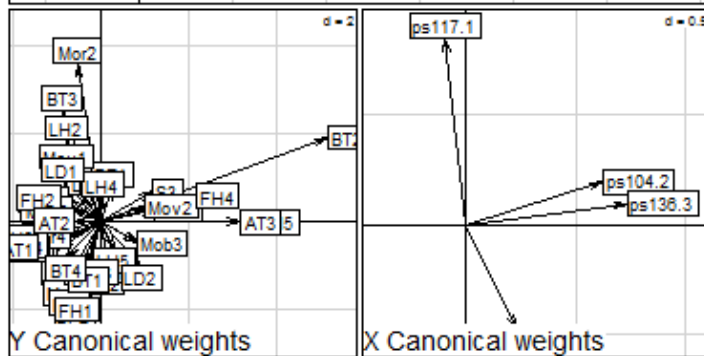
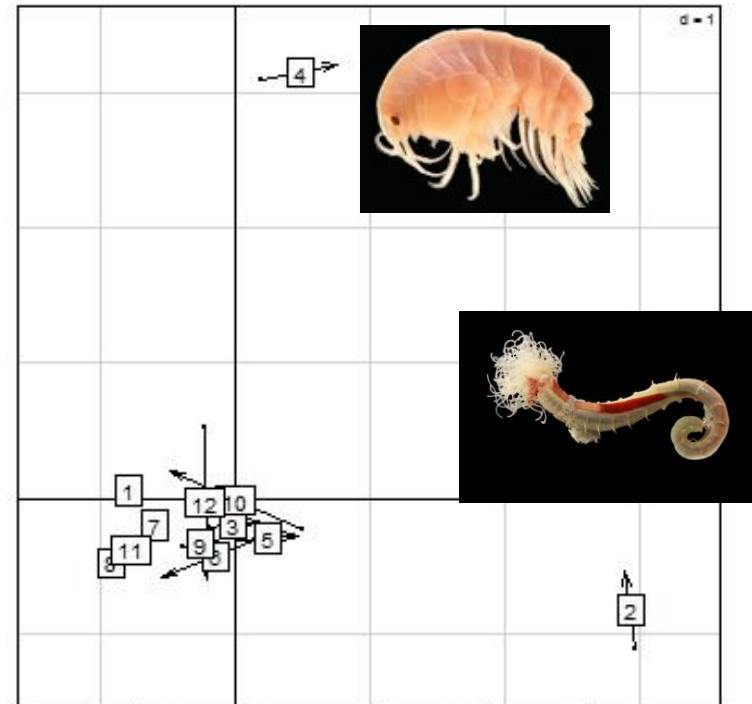
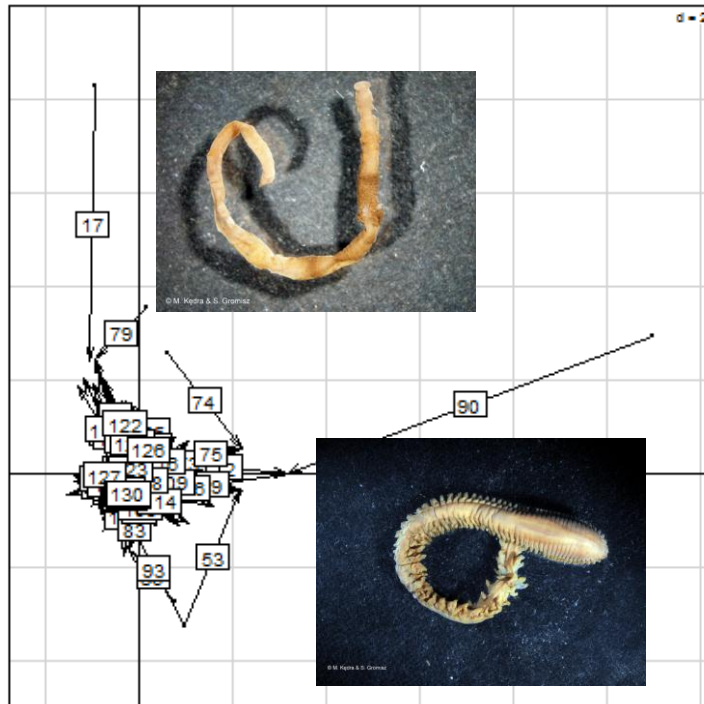
# Number of species & traits / Region



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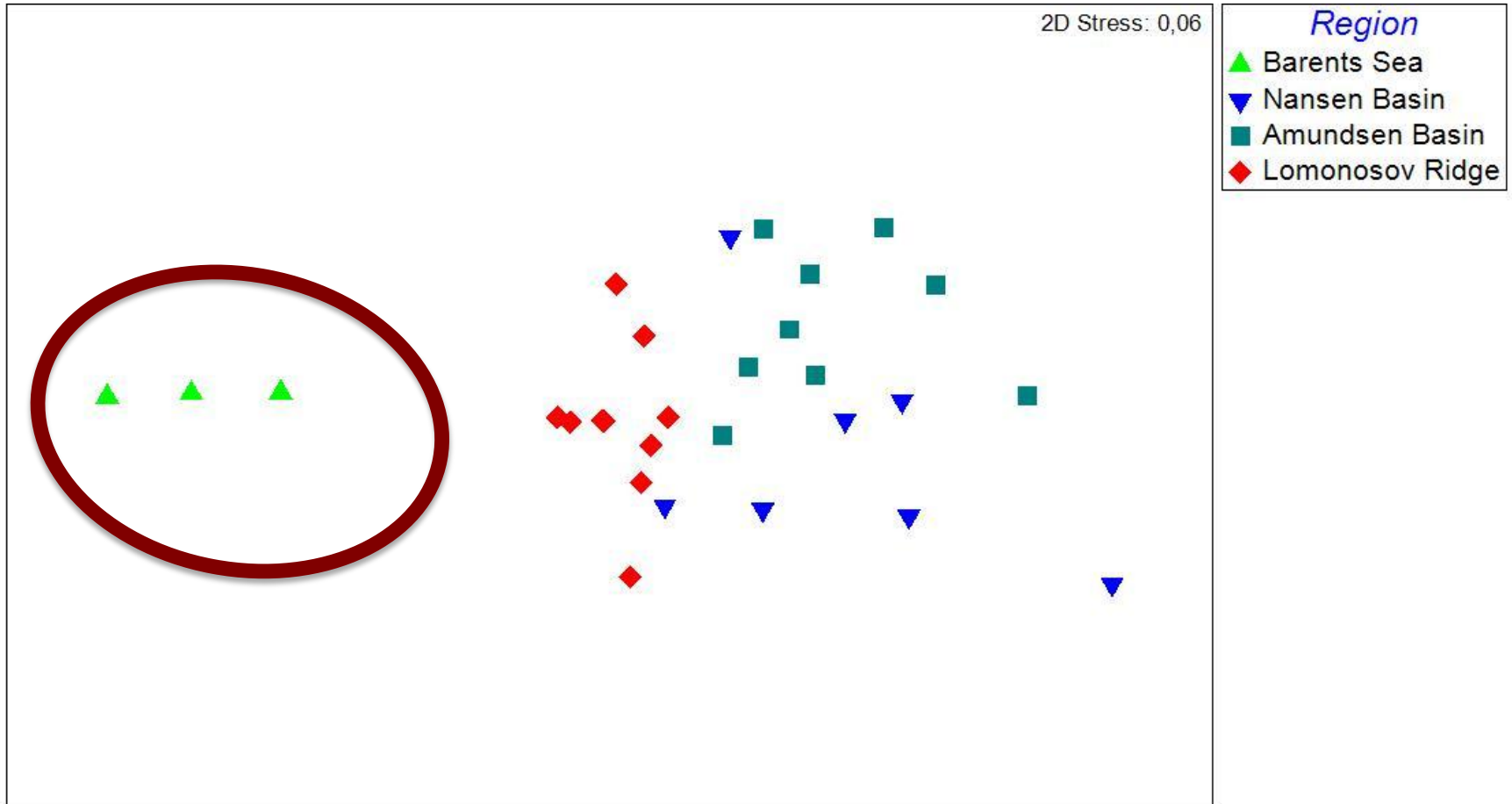
# Co-inertia Analysis



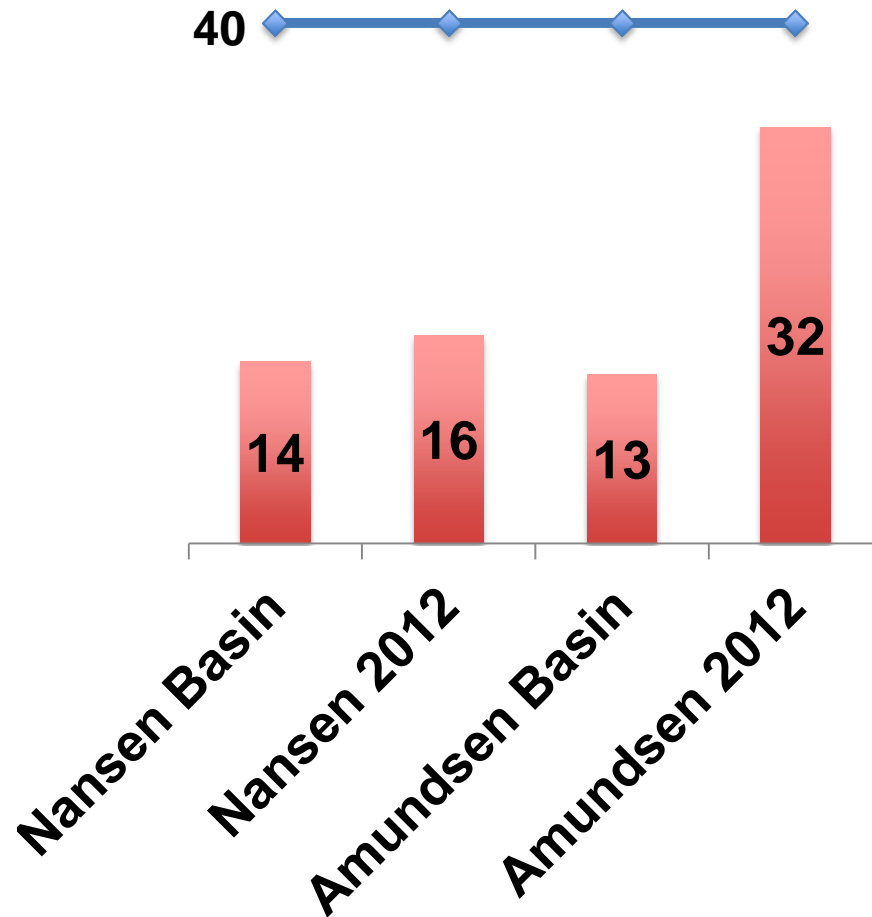
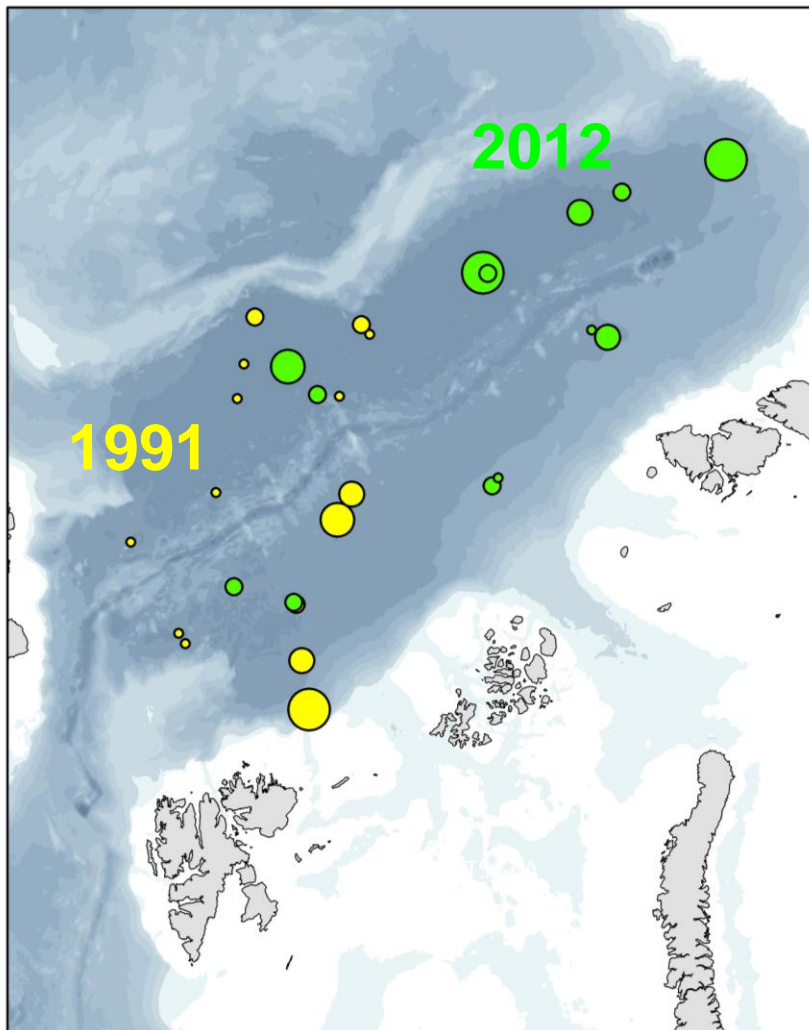
Barents Sea

Amundsen Basin

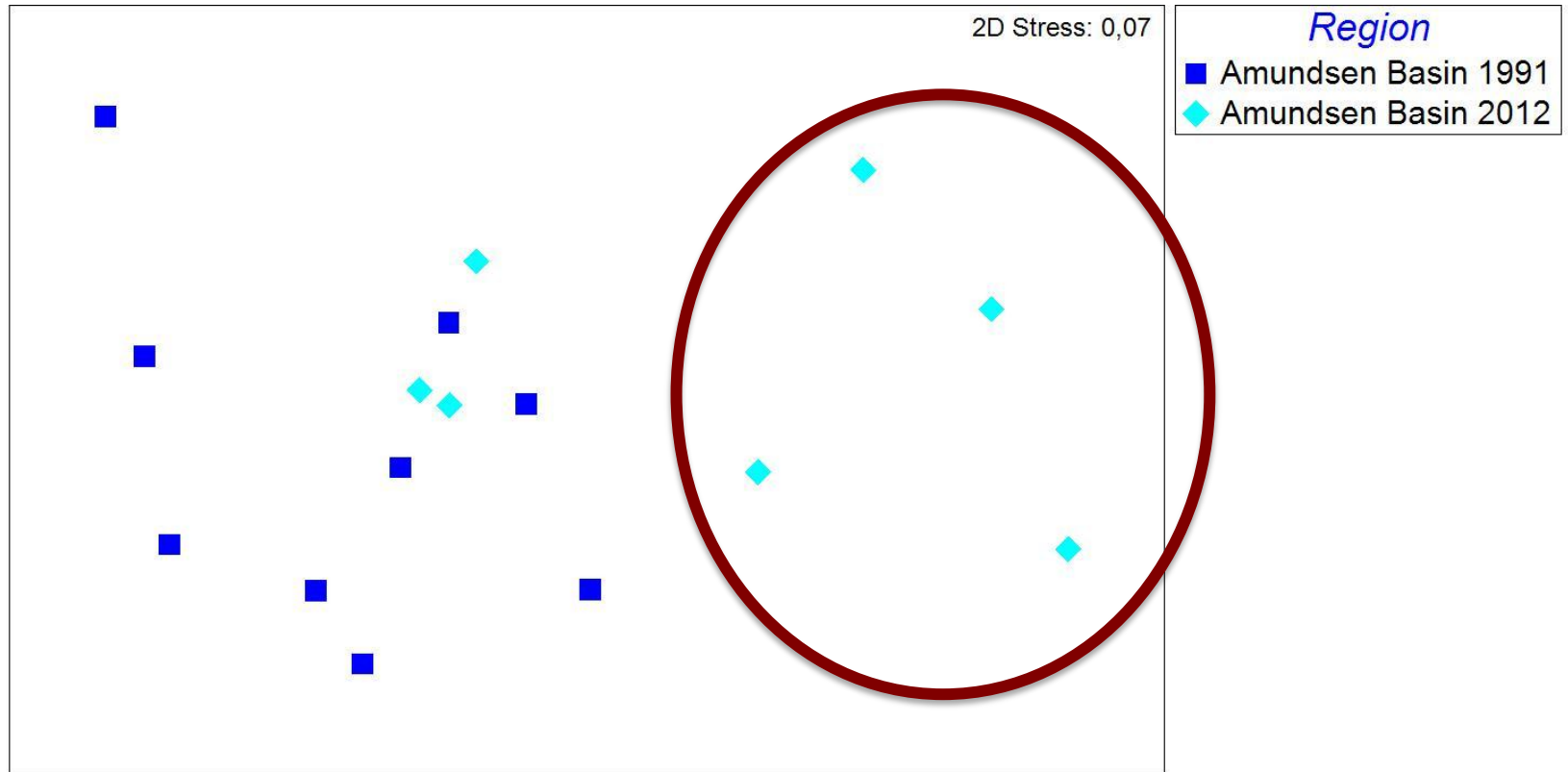
# nMDS



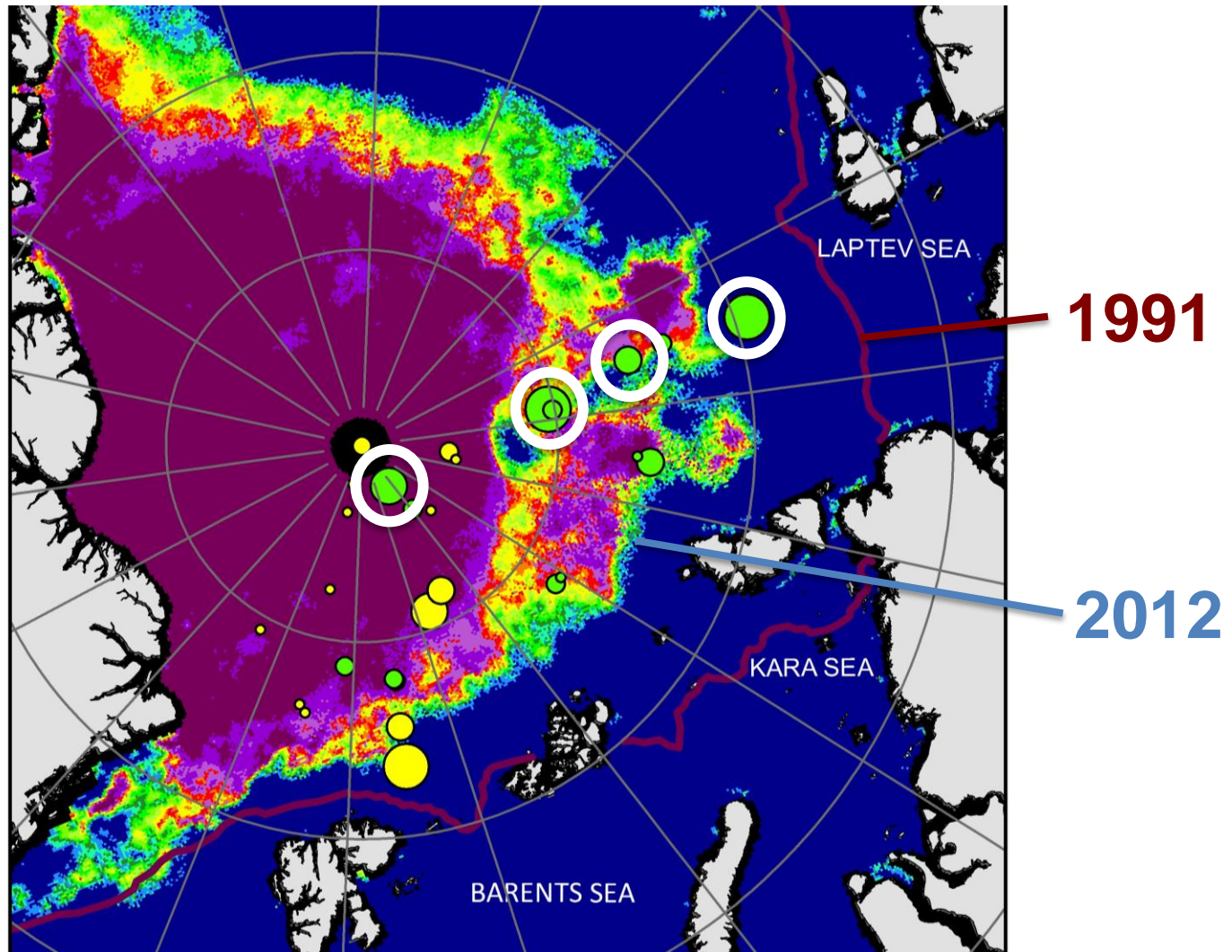
# 1991 vs 2012: Species numbers



# 1991 vs 2012: nMDS

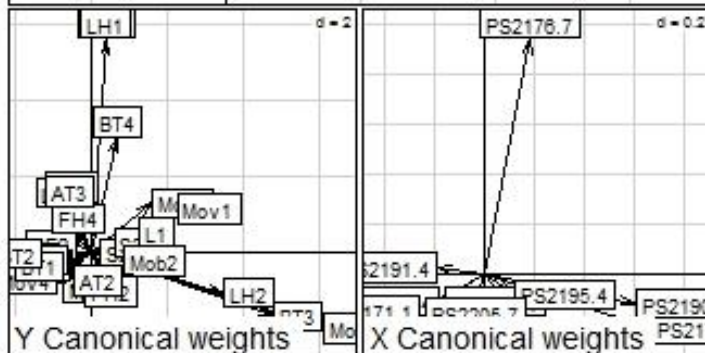
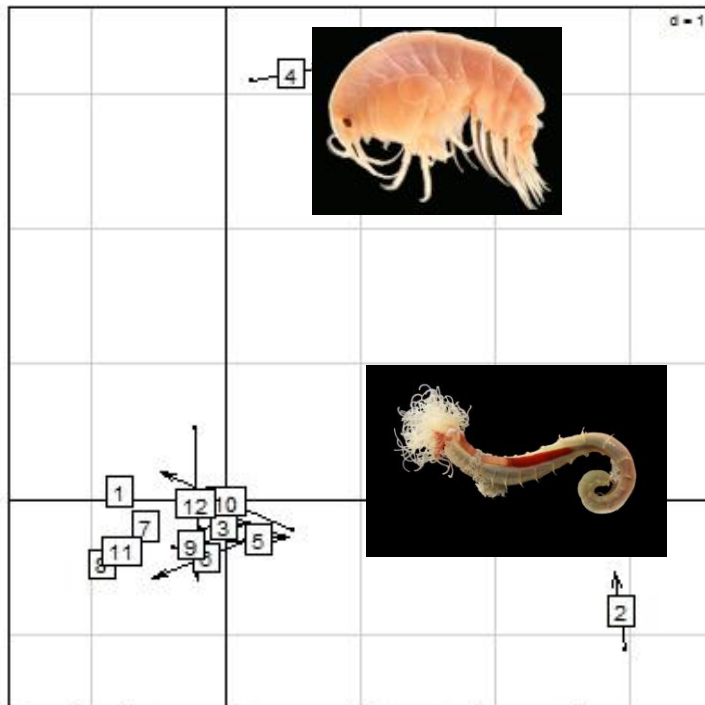


# 1991 vs 2012: Sea Ice

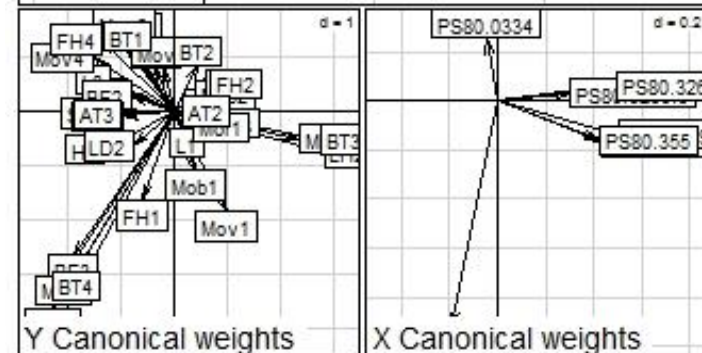
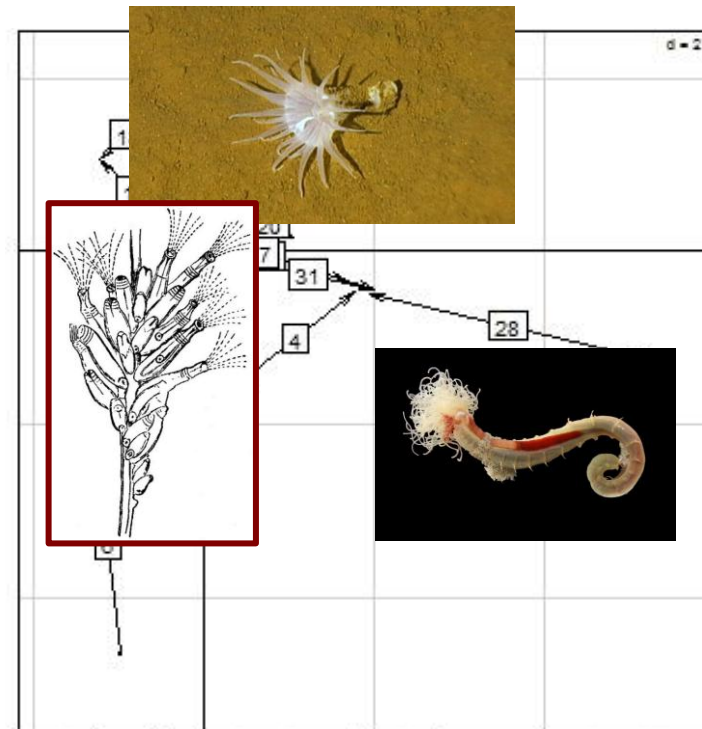




# 1991 vs 2012: Co-inertia



Amundsen 1991



Amundsen 2012

# Conclusion

- Decrease of taxa  $\neq$  decrease of function
  - “Generalist” traits in the Arctic deep-sea
- BTA useful tool to study effects of climate change in Arctic regions
  - Reference stations necessary!

