

# Vör - Marine Research Center at Breiðafjörðu

## Coastal environment and food web studies

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SJÁVARRANNSÓKNARSETUR VIÐ BREIÐAFJÖRD

# Vör - initiation

Founded May 12th 2006

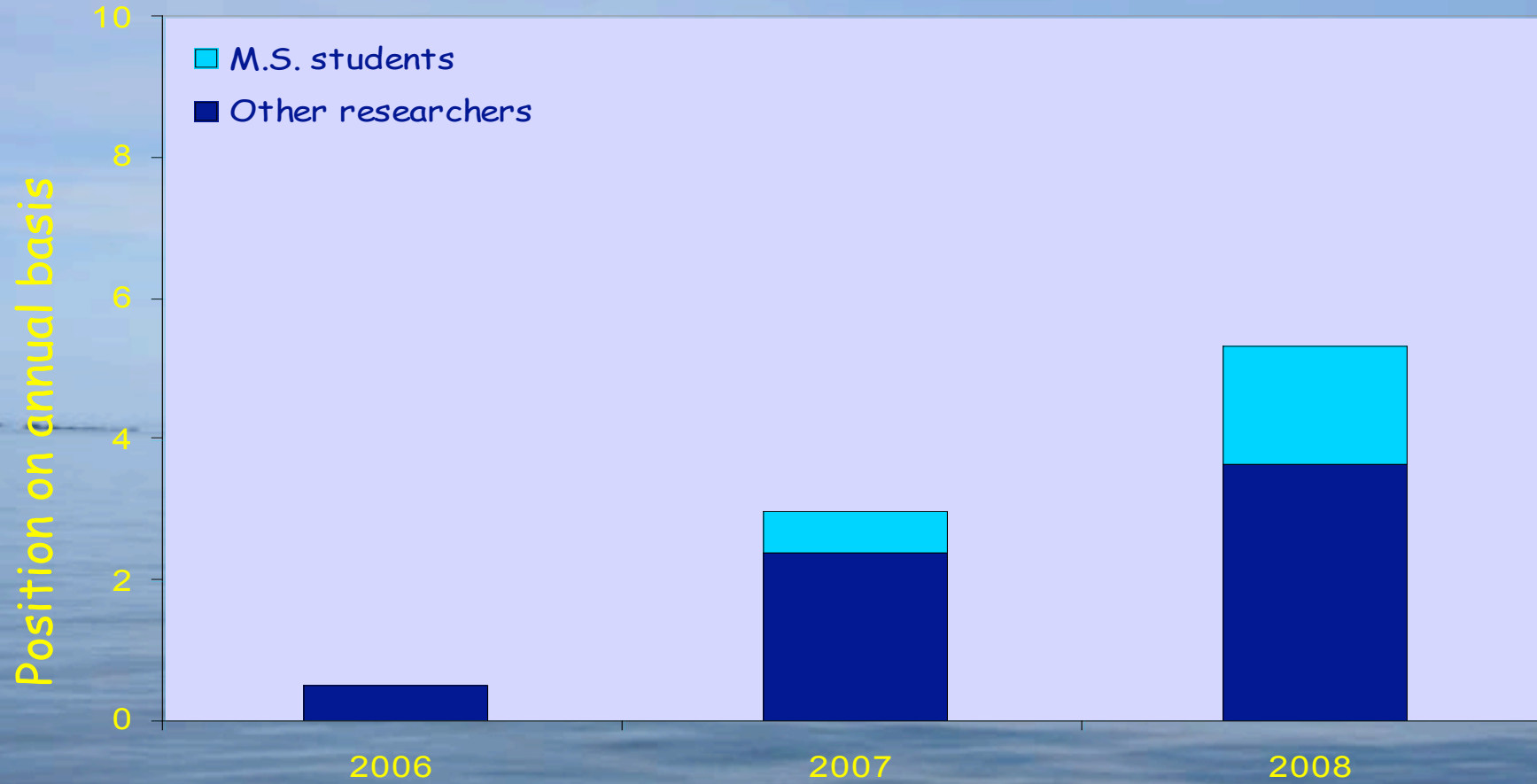
Independent research institute of 22 founders

Established to facilitate and enhance local studies on the biota in Breiðafjörður

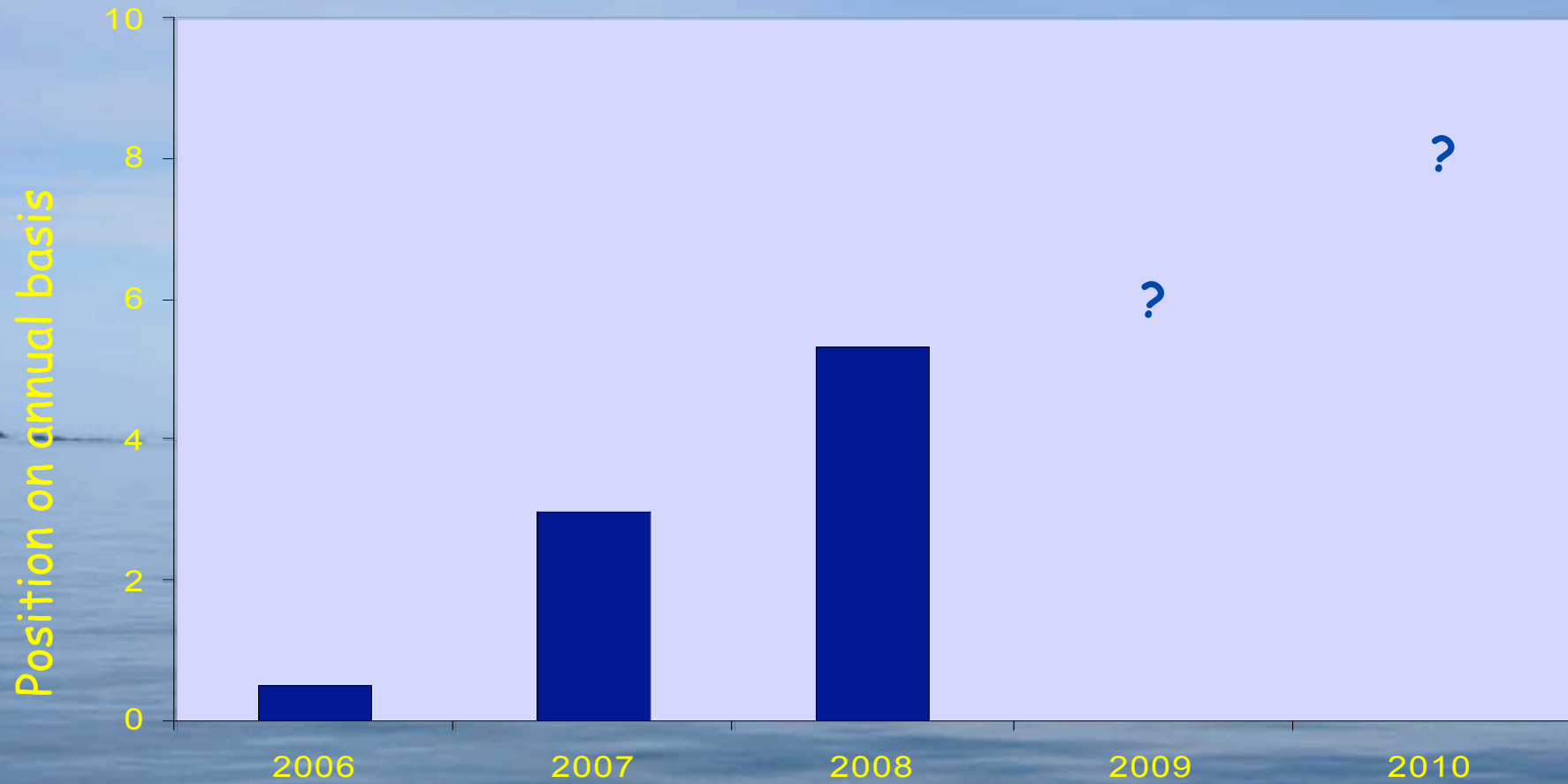
Research emphasis

- Theoretical and ecosystem based approaches
- Practical approaches

# Staff at Vör



# Growth of research positions



# Breiðafjörður - highlights

The number of islands in the fjord is close to 3000

56% of the inter-tidal areas

31% of the shallow waters (<20m)

Strong tidal currents

Highly diverse benthic communities

Important fishing grounds

Breiðafjörður is a protected area

A review on research conducted on marine biology in Breiðafjörður revealed substantial number of studies on broad topics of marine biology. However, among others a gap was in the knowledge on phyto- and zooplankton communities.

(Halldóra Skarphéðinsdóttir and Karl Gunnarsson, 1997)



# Phytoplankton succession and environmental parameters in Breiðafjörður

10 sample locations  
20 sample trips

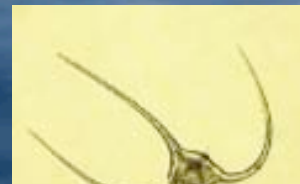
Parameters measured:

Salinity,  
Temperature,  
Oxygen,  
pH

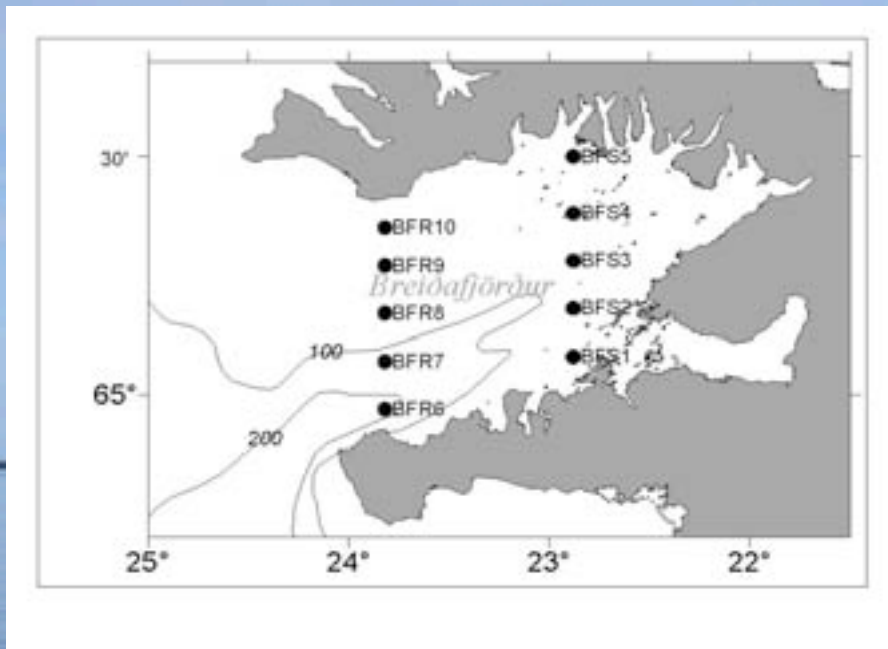
Nutrients (N, P, Si)

Phytoplankton biomass

Phytoplankton species composition

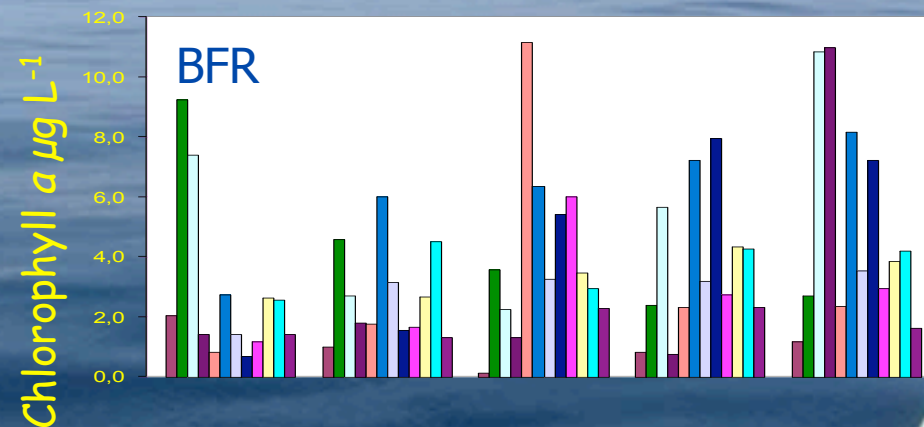
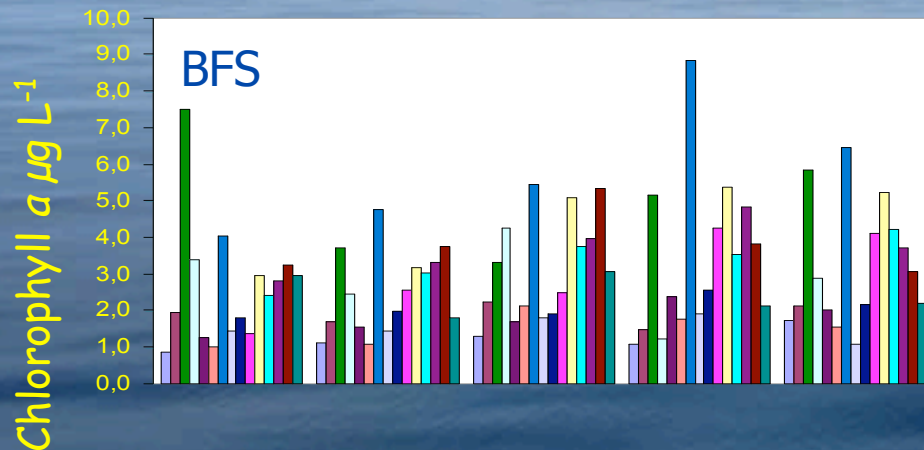


# Phytoplankton succession and environmental parameters in Breiðafjörður



## Preliminary results:

1. Mosaic system
2. BFS coastal influences
3. BFR oceanic influences
4. Phytoplankton abundance highest in spring early summer
5. Diatom bloom in the north but diatom and *Phaeocystis* bloom in the south



# Zooplankton ecology

## Projects:

Zooplankton abundance and species composition

Fecundity and feeding of key species

Sound by zooplankton



# Distribution of whelks in Breiðafjörður

Whelks collected at 59 locations

Measurements:

Catch

Height

Weight

Sex

Age

Size at sexual maturity

Parasites



# Biology of the common whelk in Breiðafjörður and the Faroe Islands

The common whelk (*Buccinum undatum*) collected at 10 sample sites in Breiðafjörður, 2 in the Faroe Islands

The goals are:

1. Biology of the common whelk
2. Improved technology to fish/process whelks

Motivation sustainable use of resources

3. Marketing

Measurements: Growth, size at sexual maturity, growth of gonad tissue, parasite load

Results: Phenotypic differences, 15 mm range in size at sexual maturity, parasitic load variable. Significant difference between whelks in Iceland



# Outreach to the community

Guided trips to the inter-tidal community at Gufuskálavör, Snæfellsnesi

Collaboration with the Natural Park Snæfellsjökull to introduce 4 - 6 grades to oceanography, biology and geology during a field trips to Djúpalónssandur, Snæfellsnes

Encourage fishermen to report rare or infrequently seen marine life to Vör or MRI, Ólafsvík

Collaboration with the Fish Museum, Ólafsvík on maintenance of fishes and invertebrates in aquariums

Open door policy at Vör



# Future directions

Collaboration of Vör, The Snæfellsnes Research Centre of the University of Iceland, W-Iceland Institute of Natural History and National Park Snæfellsjökull

Facilitate flow of graduate students to Vör and Snæfellsnes in general

Stimulate young students to study biology and gain environmental awareness

Emphasis research on food web dynamics in Breiðafjörður

# Room for research

Environmental parameters  
(currents, benthic communities)

Ecology of key species

Energy flow through the food web

Collaborative studies with  
fisheries/industry  
(sustainable use of marine organisms)

