

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

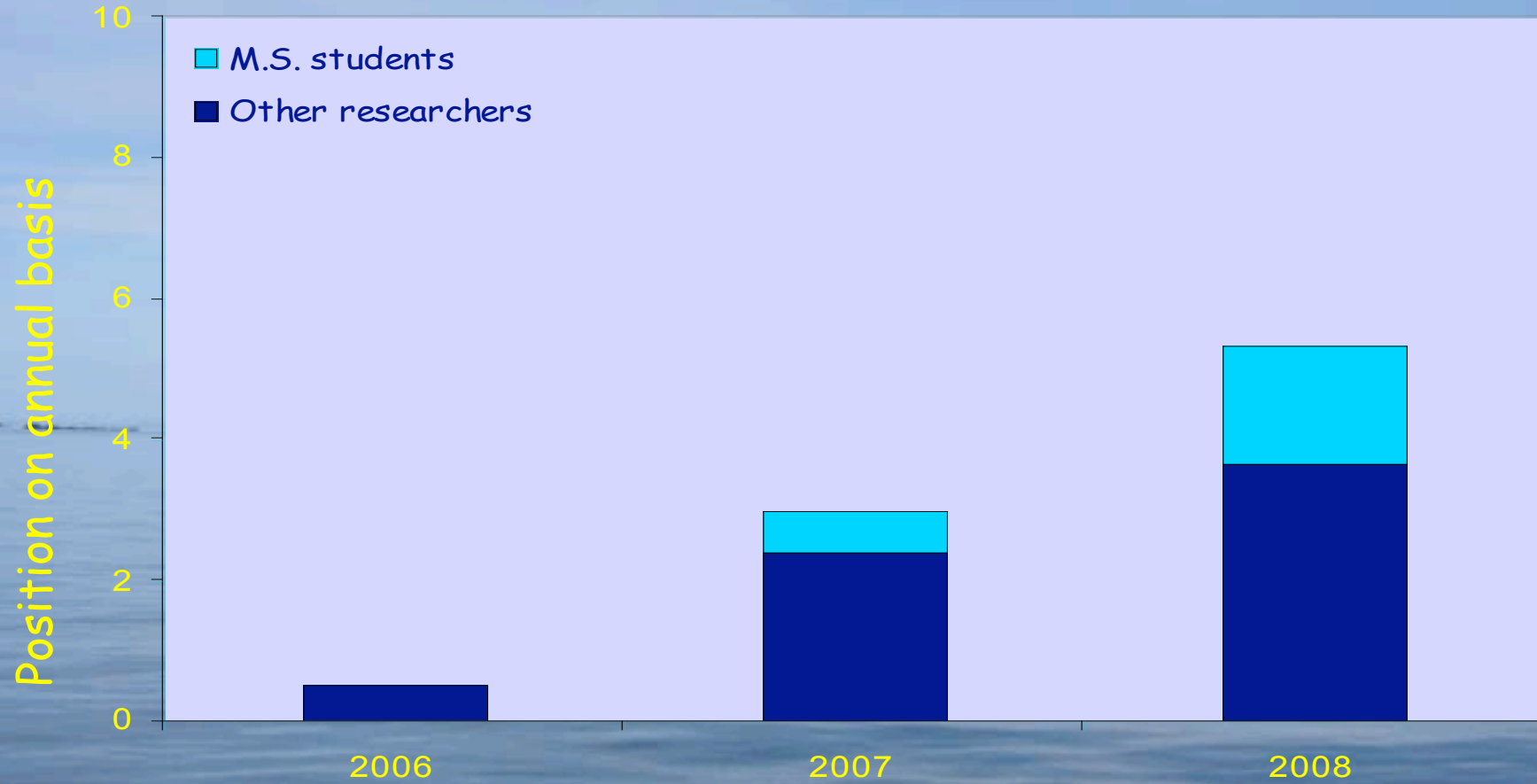
Independent research institute of 22 founders

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

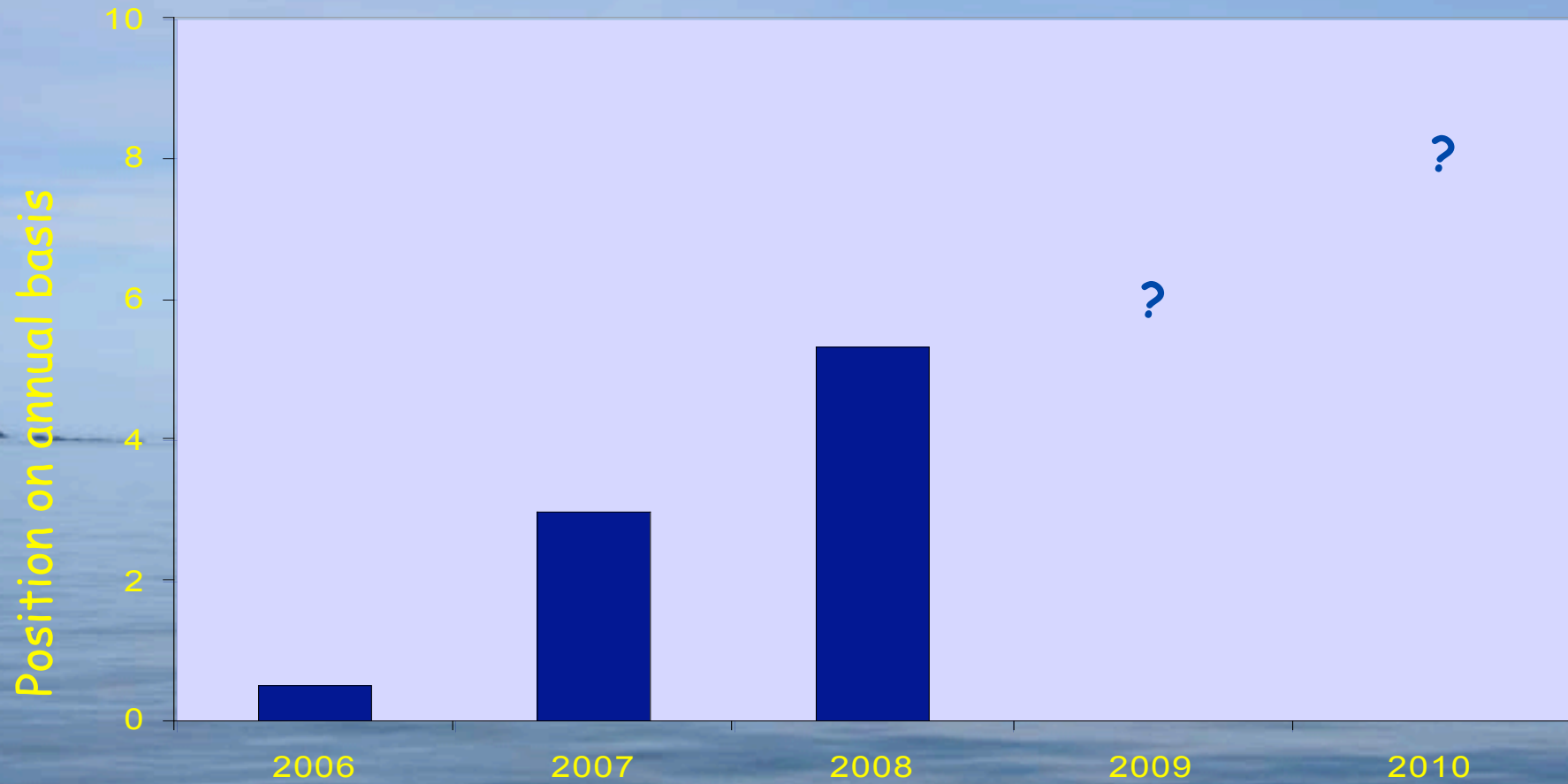
Research emphasis

- 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

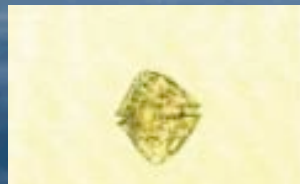
Parameters measured:

Salinity,
Temperature,
Oxygen,
pH

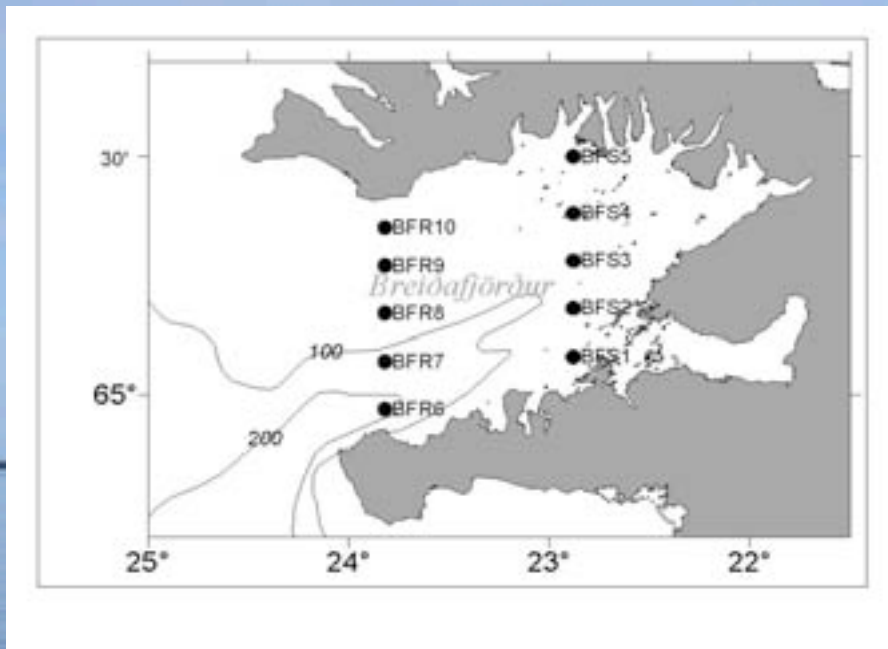
Nutrients (N, P, Si)

Phytoplankton biomass

Phytoplankton species composition

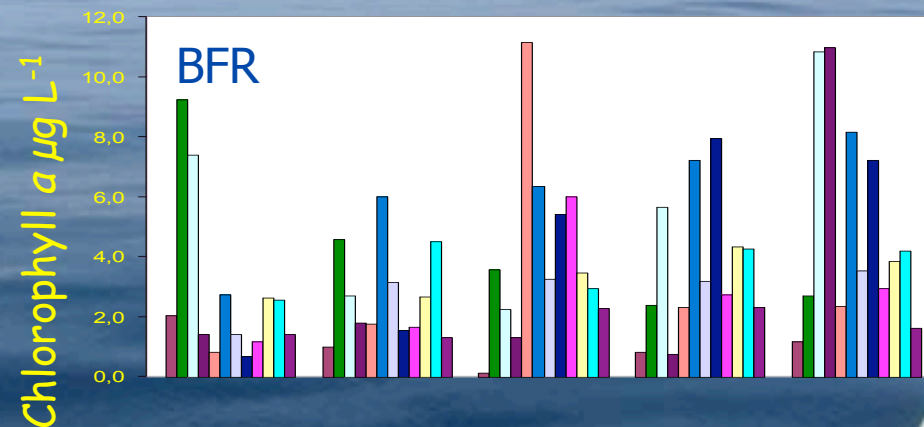
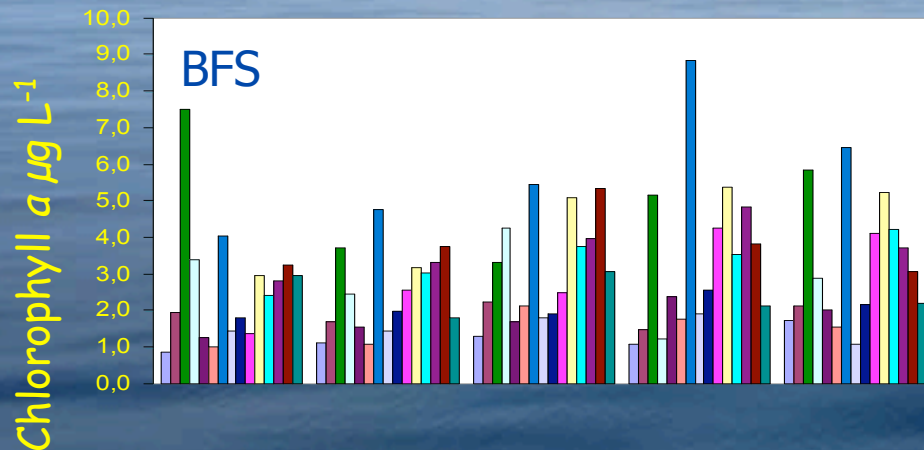


Phytoplankton succession and environmental parameters in Breiðafjörður



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

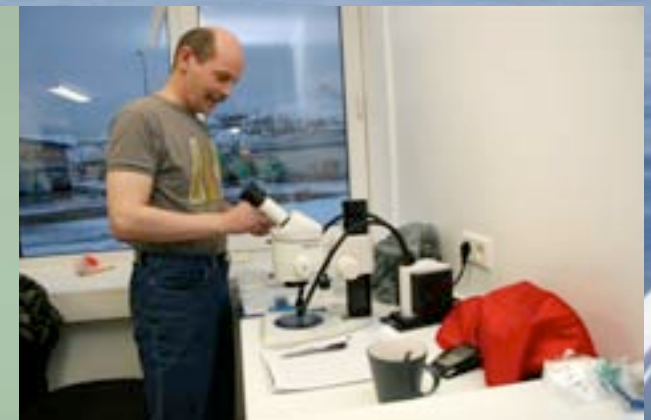
Weight

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)

