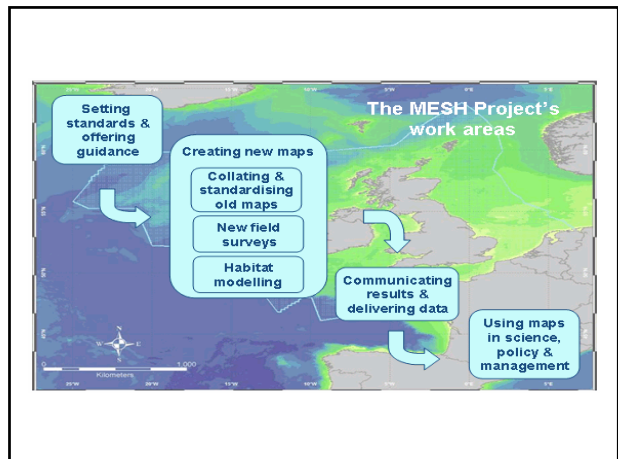


afbi Agri-Food and Biosciences Institute

Fisheries and Aquatic Ecosystems Branch



Corystes



afbi Agri-Food and Biosciences Institute

Previous Work

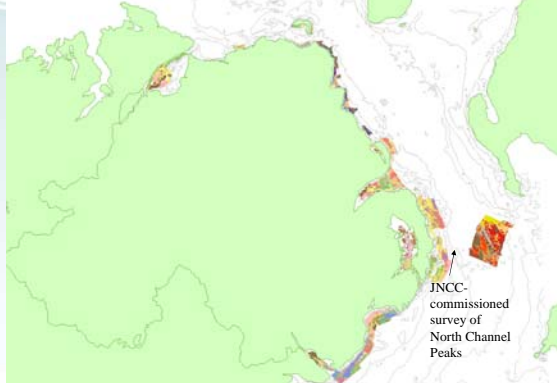
- N Ireland Inshore Mapping
- Minch Project
- West of Hebrides
- North Channel Peaks
- Sound of Barra

afbi Agri-Food and Biosciences Institute

- "The MESH NW Shelf Consortium consists of five partners (Marine Institute, Ireland, British Geological Survey, UK, Department of Agriculture & Rural Development, Queen's University and the University of Ulster, Northern Ireland) who have come together to work on a range of key subtidal sites between Ireland, Northern Ireland and Scotland. The main aim of this partnership is to promote cross-border collaboration from the field survey stage through to product delivery within the MESH project objectives.
- Consortium research will test habitat mapping standards and protocols, develop novel mapping approaches and habitat modelling, and produce EUNIS level 3 habitat maps of key areas."

Nearshore subtidal habitat mapping project: 2000-2004
(RoxAnn-based maps)

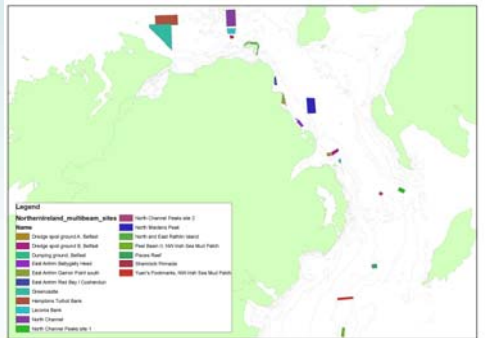
afbi Agri-Food and Biosciences Institute



JNCC-commissioned survey of North Channel Peaks

Mapping European Seabed Habitats (MESH): Northern Irish Study Sites

<http://www.searchmesh.net>



Legend

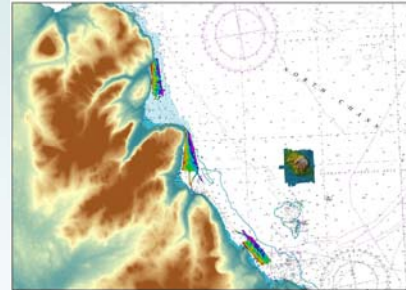
- North Channel Peaks site 1
- North Channel Peaks site 2
- North and East Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands
- Peatlands

The Sensitivity of Benthic Habitats in NW Irish and Malin Shelf

- to complete synoptic maps of key areas in the NW Irish Sea, N Channel and Malin Shelf.
- Subsequent analysis to indicate sensitivity to:
 - **Fishing;**
 - **Aquaculture;**
 - Land Run off;
 - **Aggregate extraction, Dredge Spoil Disposal** and other offshore development such as windfarms.
- Identify Gaps in knowledge(unsurveyed areas) and rank in order of relevance. Begin targetted surveying using acoustic technology
- Develop video database of N Ireland benthic habitats and review techniques for quantifying video data.
- Develop sensitivity indices and predictive models for benthic habitats



Habitat Maps in a Management Context



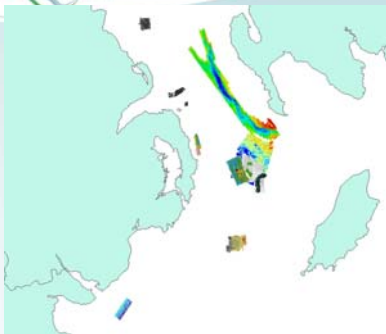
Target Habitats

- Rocky reefs;
- Maeri;
- Nephrops/Megafaunal Bio-turbated Mud



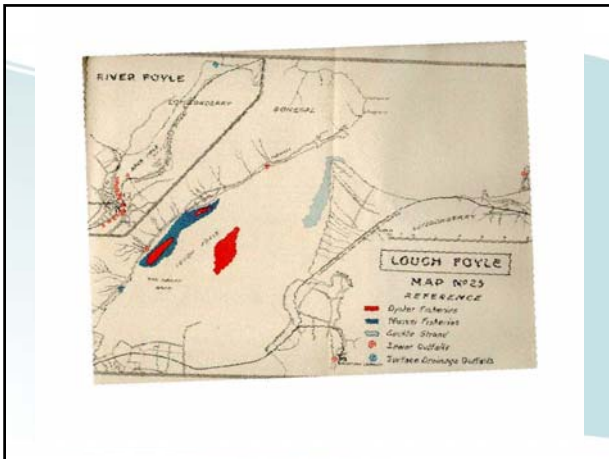
Why Map

- Spatial Planning
- For Ecosystem management
- Resource allocation



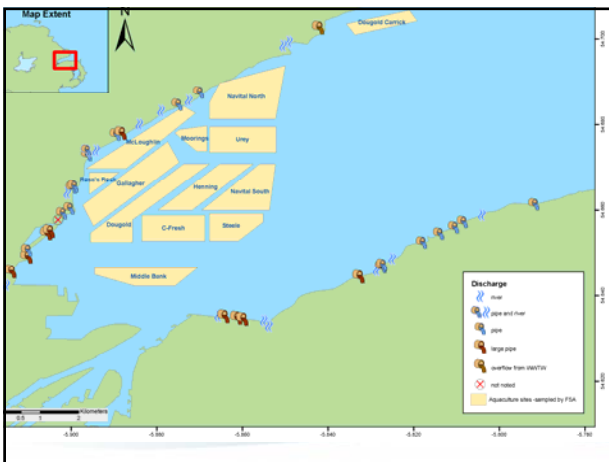
Aquaculture

- Licensed plots – conflict over space
- Resource i.e. where is the seed mussel located and how much is there?
- In 2003 30000 tonnes of seed was harvested from the East coast of Ireland



afbi Agri-Food and Biosciences Institute

- Marine Protected Areas should be established on an experimental basis, and their economic and biological impacts carefully studied.
- This process should begin in areas which give multiple benefits to multiple users of the marine environment, where possible.



afbi Agri-Food and Biosciences Institute

Camera Surveys (AFBI/Marine Institute initiative)

The AFBI camera sledge Deploying the camera

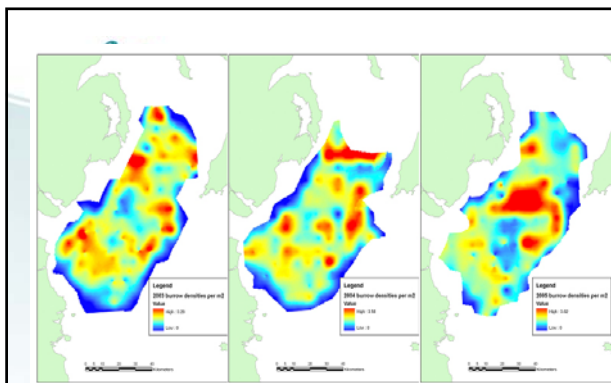
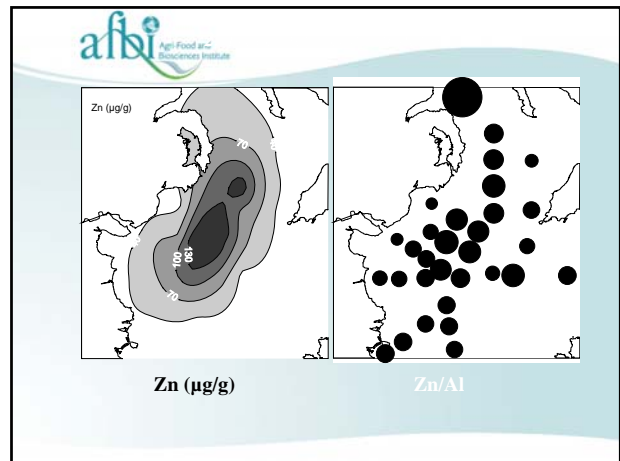
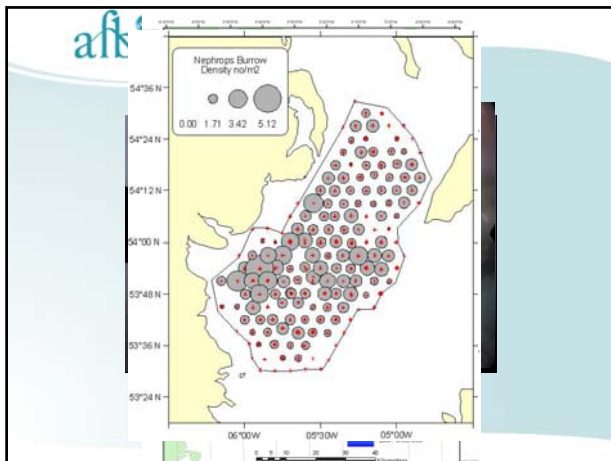
afbi Agri-Food and Biosciences Institute

NET BENEFITS A SUSTAINABLE AND PROFITABLE FUTURE FOR UK FISHING

- Strategic Environmental Assessments of UK fisheries should be carried out as a first step towards defining and introducing comprehensive environmental management systems.

afbi Agri-Food and Biosciences Institute

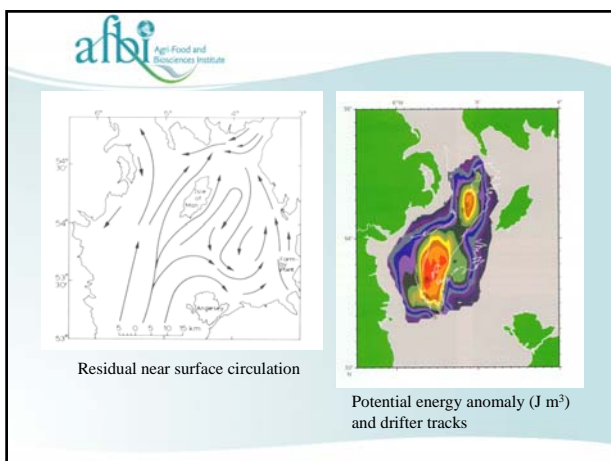
- The industry is often the first to embrace the technology;
- Industry Source of Background/Baseline Knowledge
- Much of the development of AGDS came via the scallop industry;
- Seed mussel stock assessment quota allocation is on target to be based on acoustic assessment and carrying capacity



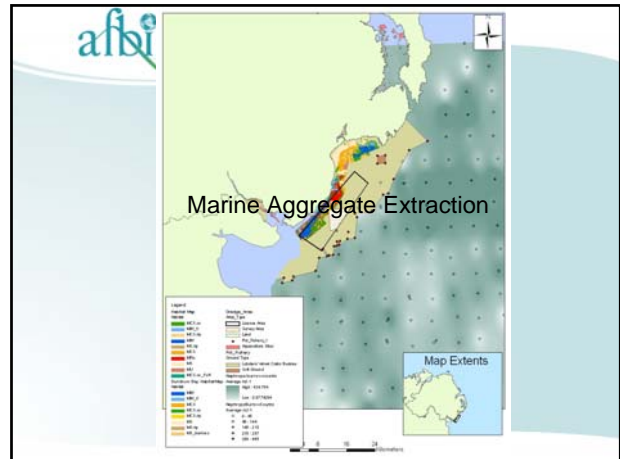
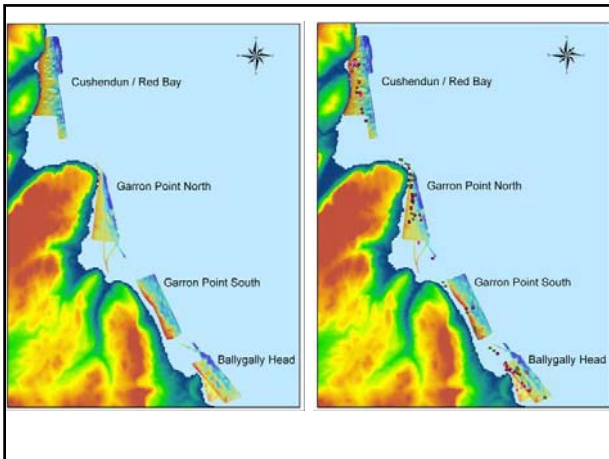
Burrow densities interpolated (500m grid) for each year, using kriging and a search radius of 10000m, and mean burrow densities calculated.

Nephrops norvegicus

- Most important single species to the Northern Ireland fleet;
- UWTV surveys have been performed annually by the Marine Institute and AFBI since 2003
- 17% increase in Total Allowable Catch (TAC) of Dublin Bay Prawn (Nephrops) from the Irish Sea

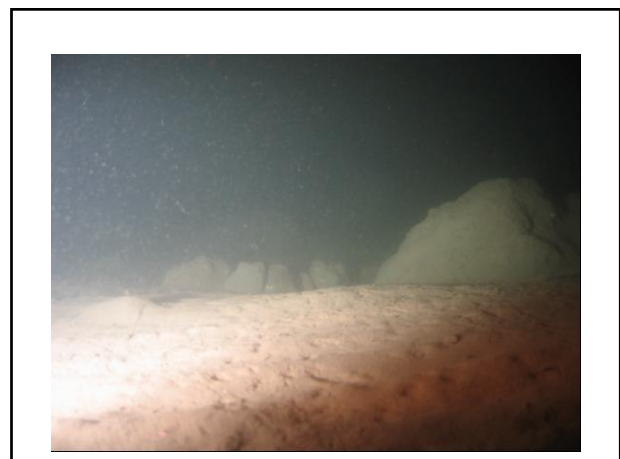
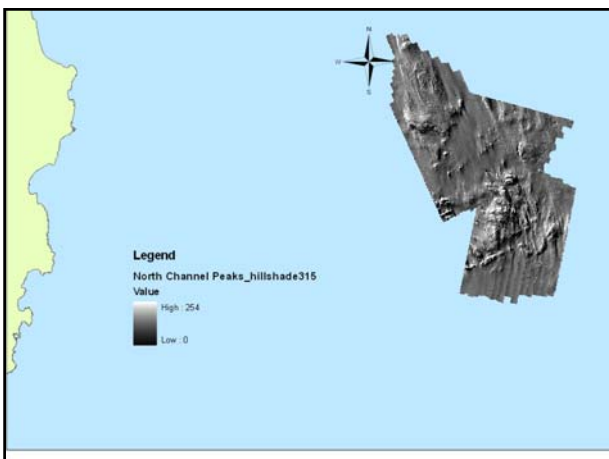
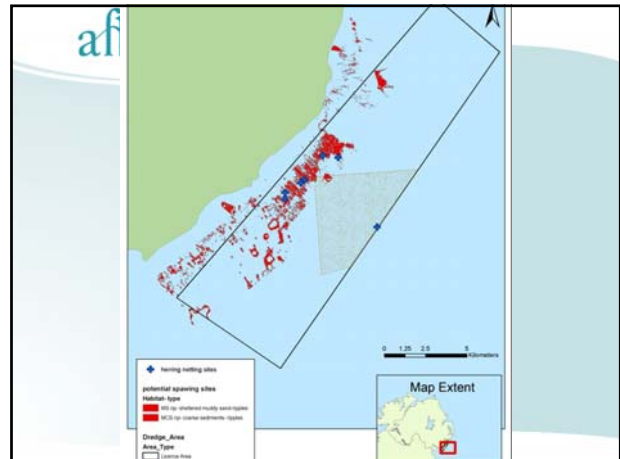


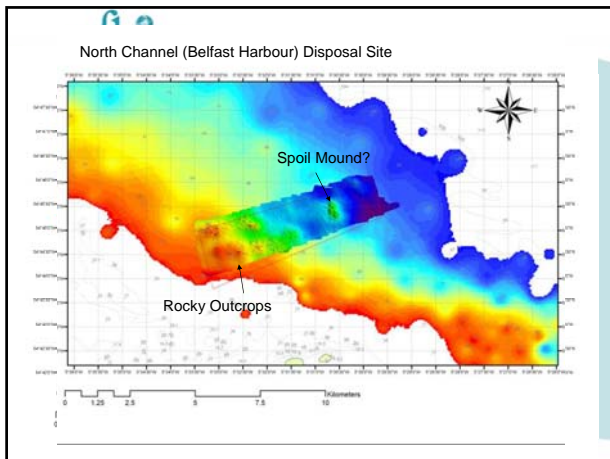
East Antrim Maerl Beds



Economic and Environmental Impacts

	1998 Before Multibeam	1999 After Multibeam
Scallop quota	13,640 kg	13,640 kg
Time on bottom	162 hr	43 hr
Distance towed	1176 km	311 km
Hours lost	15	0
Lost gear	\$10,000	0
Fuel use	27,697 L	17,545 L
Equipment	Heavy	Light





afsi Agri-Food and Biosciences Institute

Targeted Research Projects

- Ecology of the Beaufort Dyke
- Scour Features around the Pisces Reef
- Through PhD Studentships with University of Ulster

afsi Agri-Food and Biosciences Institute

2008

- Complete Nephrops modelling study
- Commission Multi-Beam
- Carlingford Lough
- Major Seed Mussel Survey
- LIDAR?
- Beaufort Dyke
- Pisces Reef

