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Assessment of offshore habitats in the Cardigan Bay SAC

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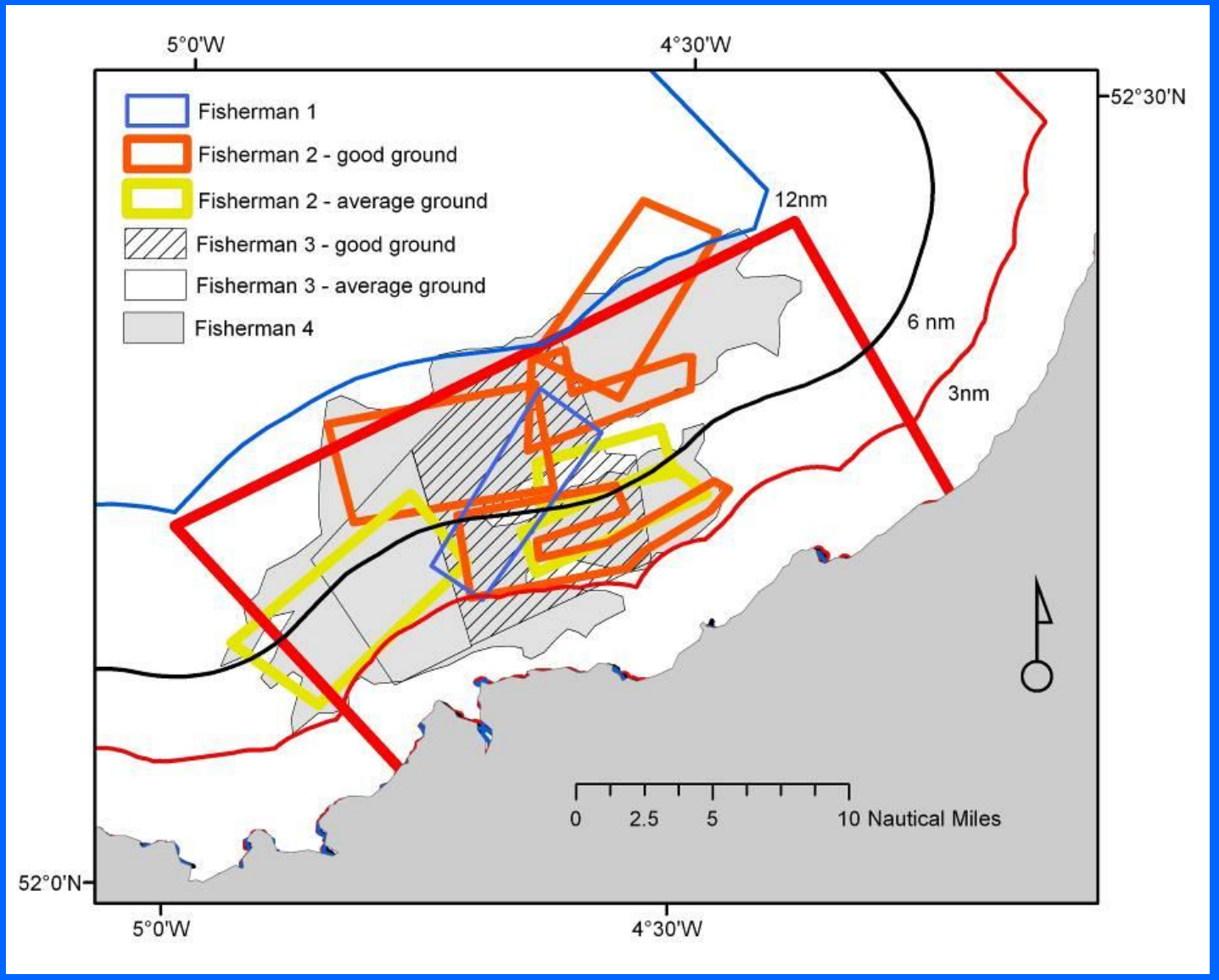
Consultation process with fishermen



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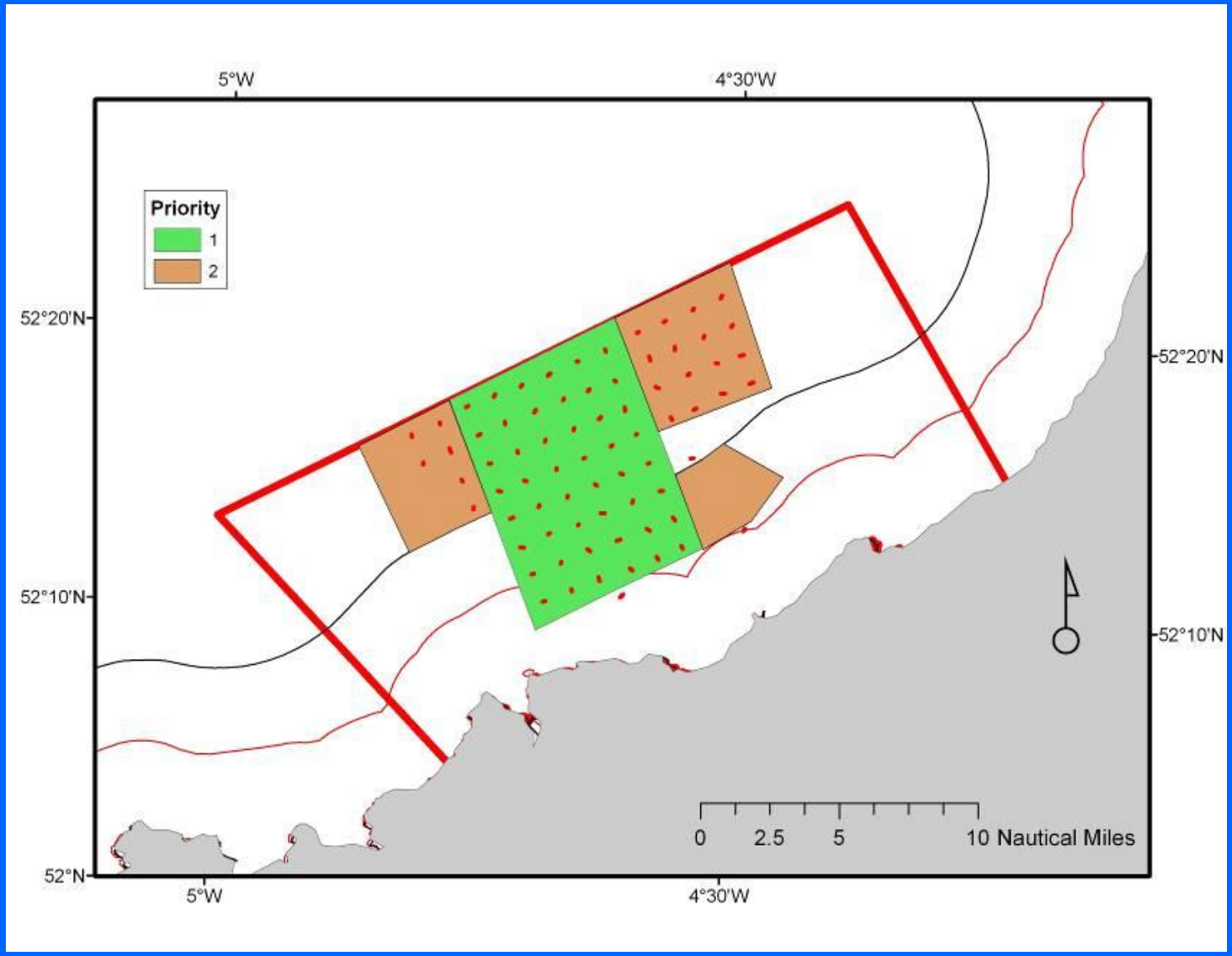
Final survey design for gabs and camera tows



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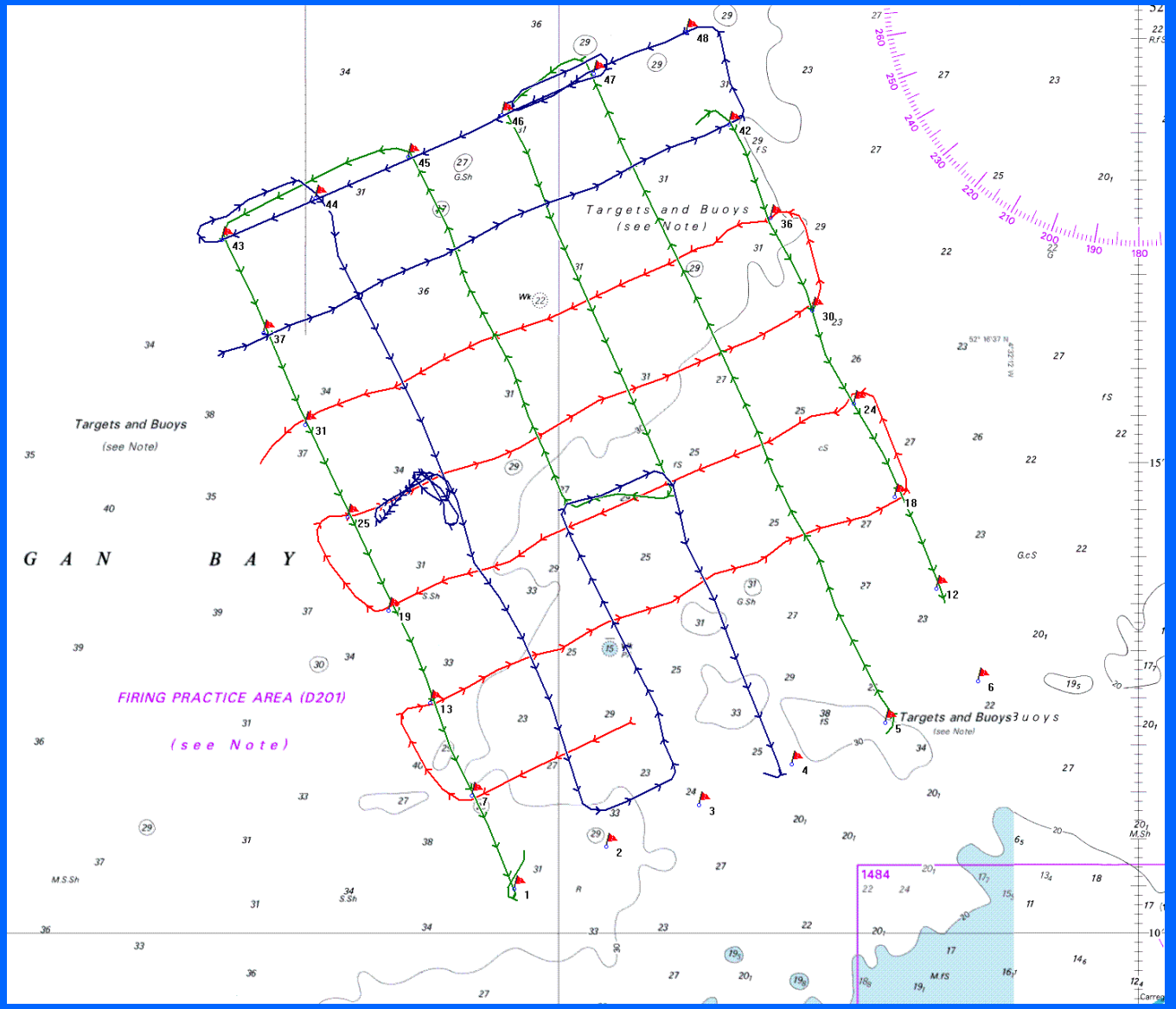
Side scan survey design



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Final survey design

- 73 survey sites
- 48 in priority 1 area (both grab and camera tows)
- 22 in priority 2 area (camera tows only)
- 3 additional sites known to contain ‘stony reefs’
- 14 side scan survey lines with a swath width of 100 - 200 meters

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Methods

• Grab samples were weighed and sieved over 64 mm – percentage of cobble fraction was calculated.

• Habitats were classified from digital stills images. Four categorized were distinguished a) mud b) sand c) gravel d) boulder and cobble (criterion of >50% coverage) – percentage of habitat type per tow.

•Species numbers were assessed by tow while abundances of benthic biota was standardized to 10 m^2.

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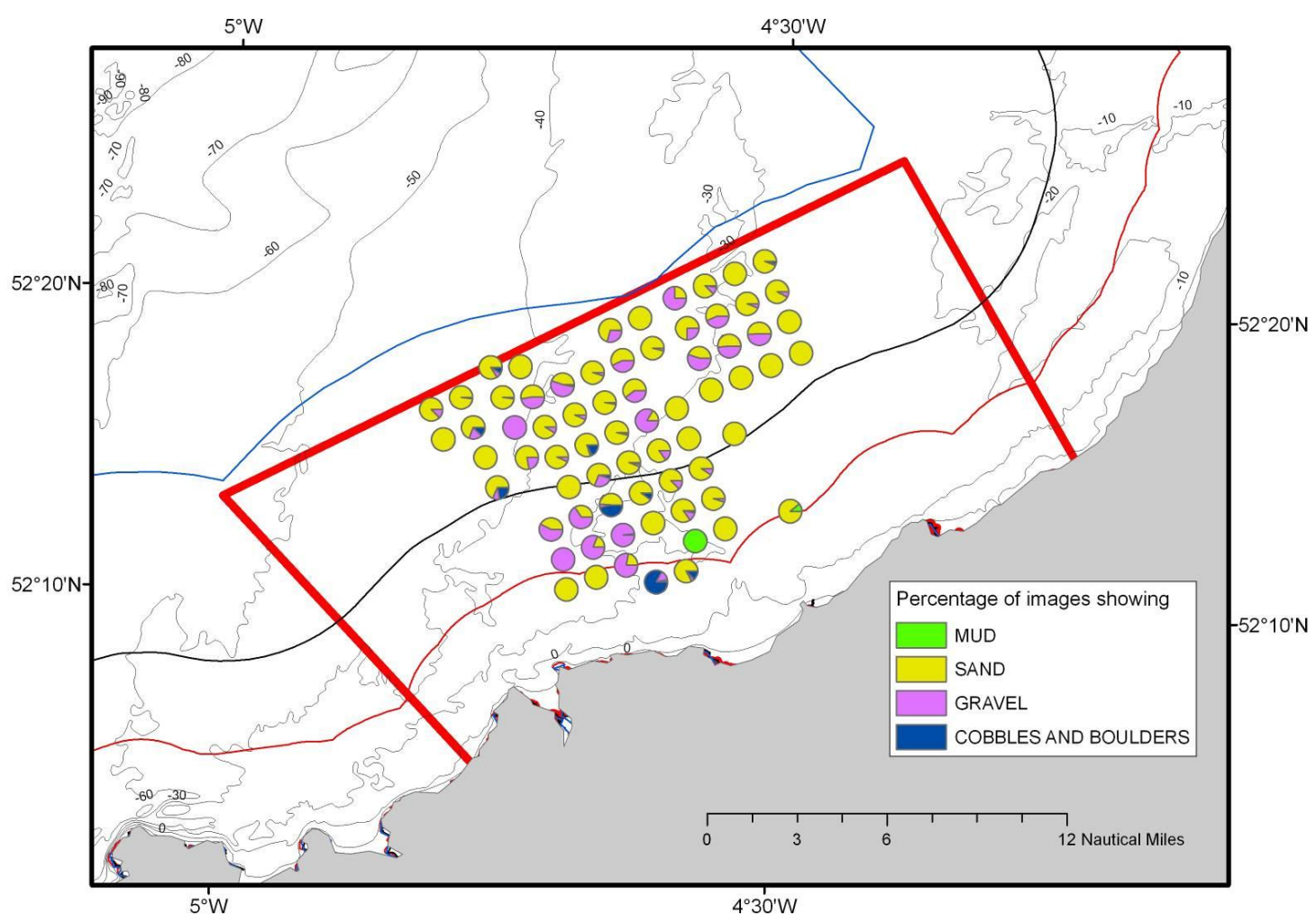
Results – Grab samples

Percentage of habitat type per tow



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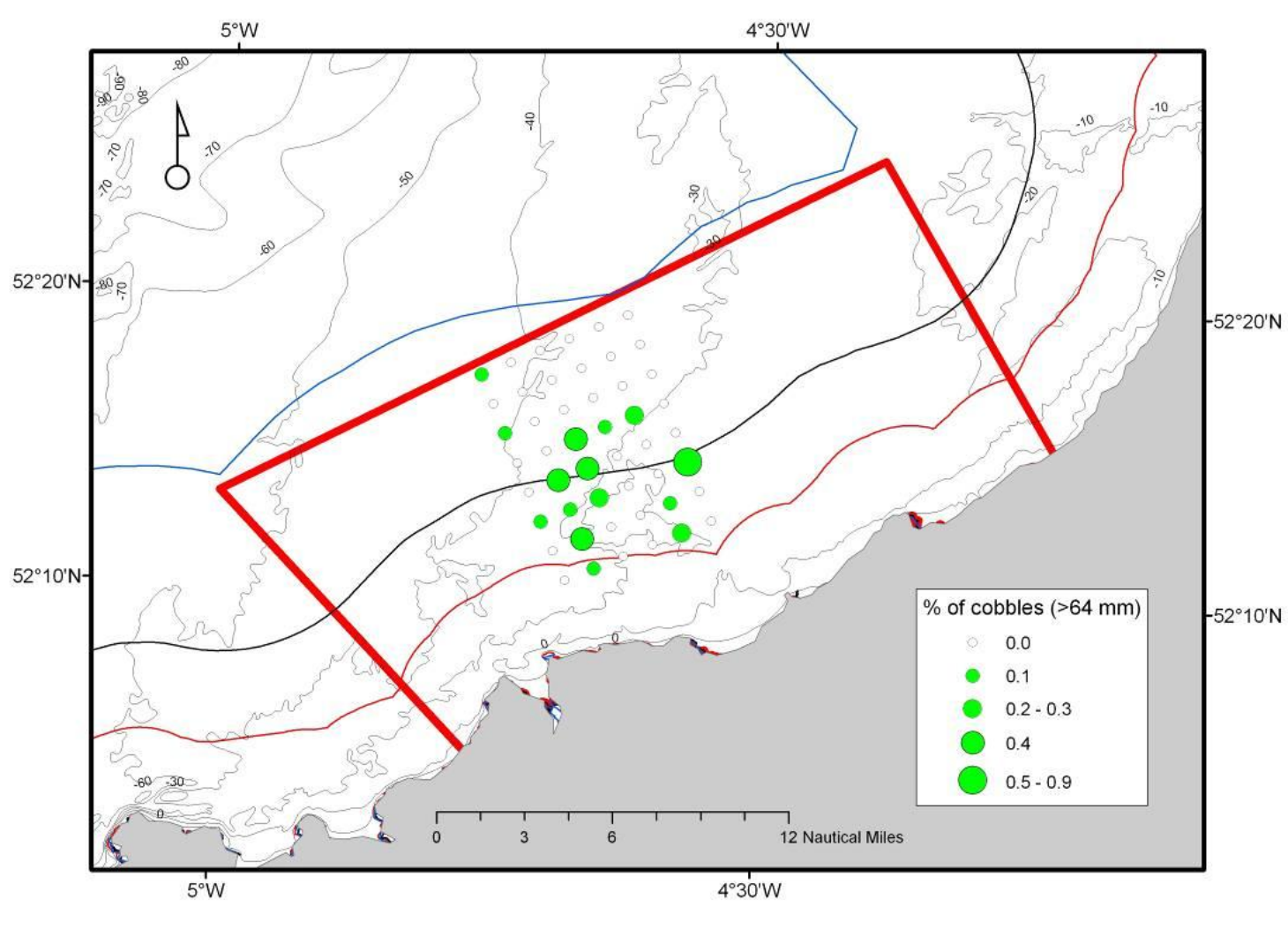
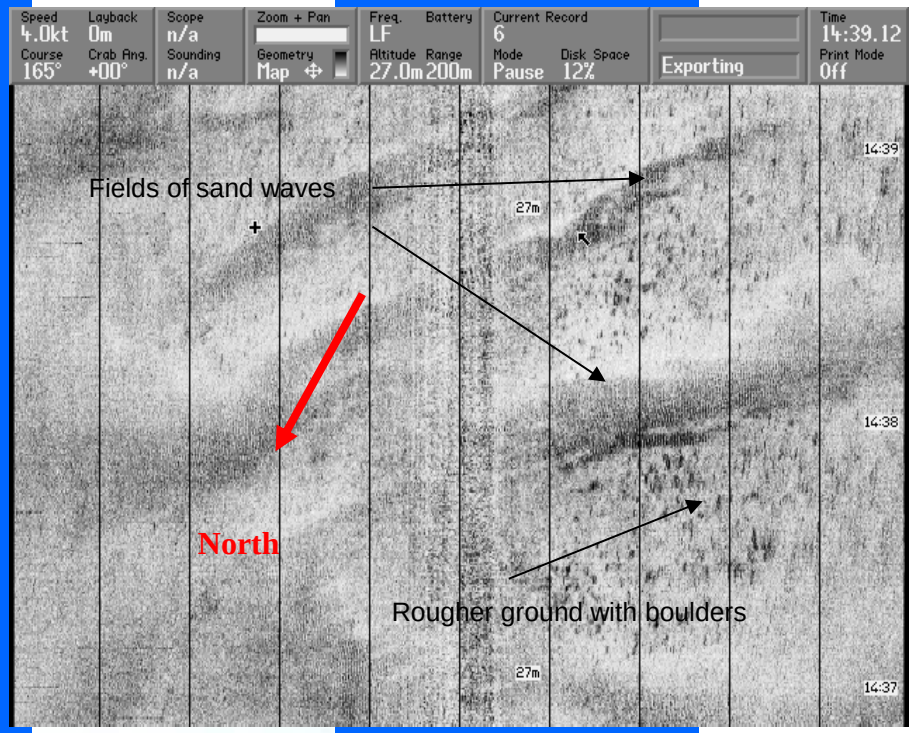
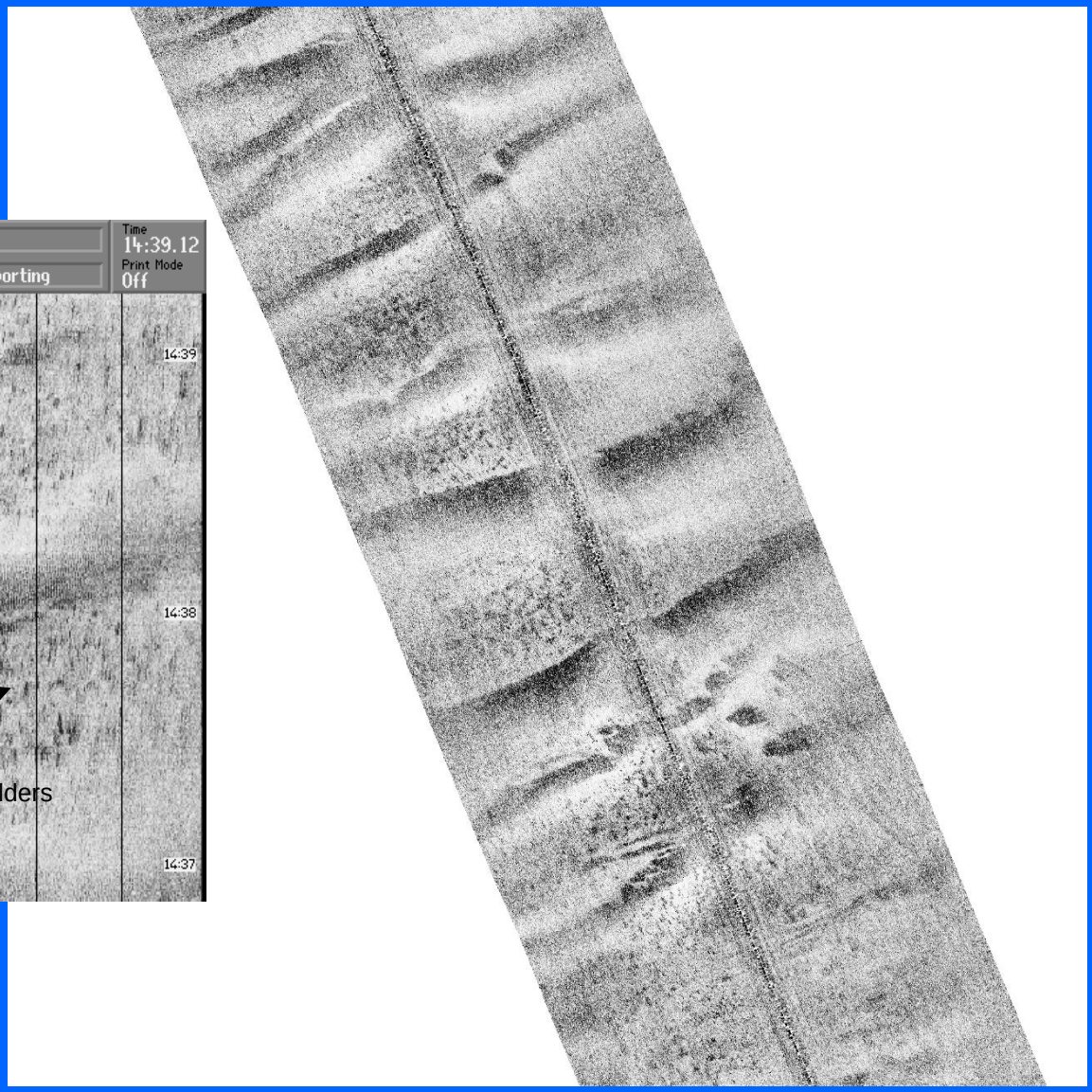
Results – Grab samples

Percentage of cobbles (biased)



Results – Side scan sonar





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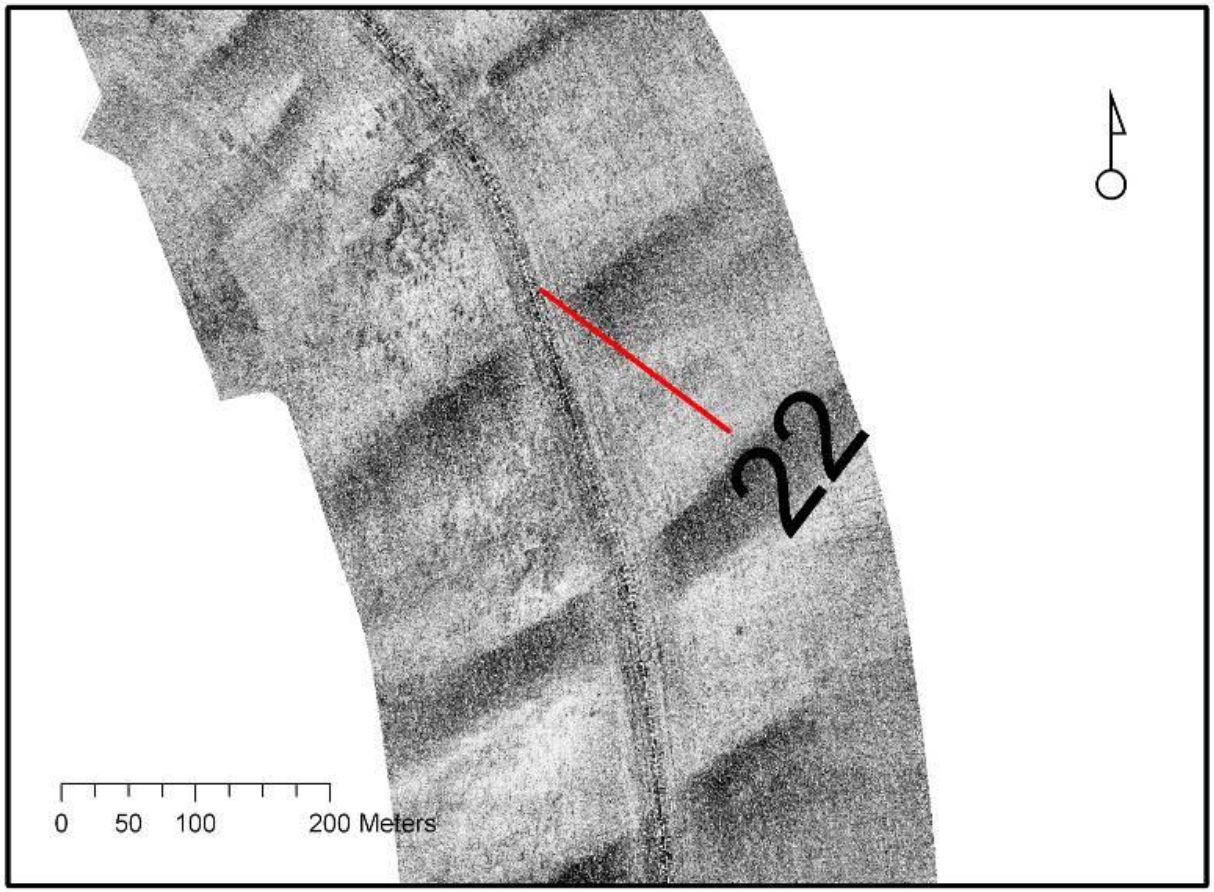

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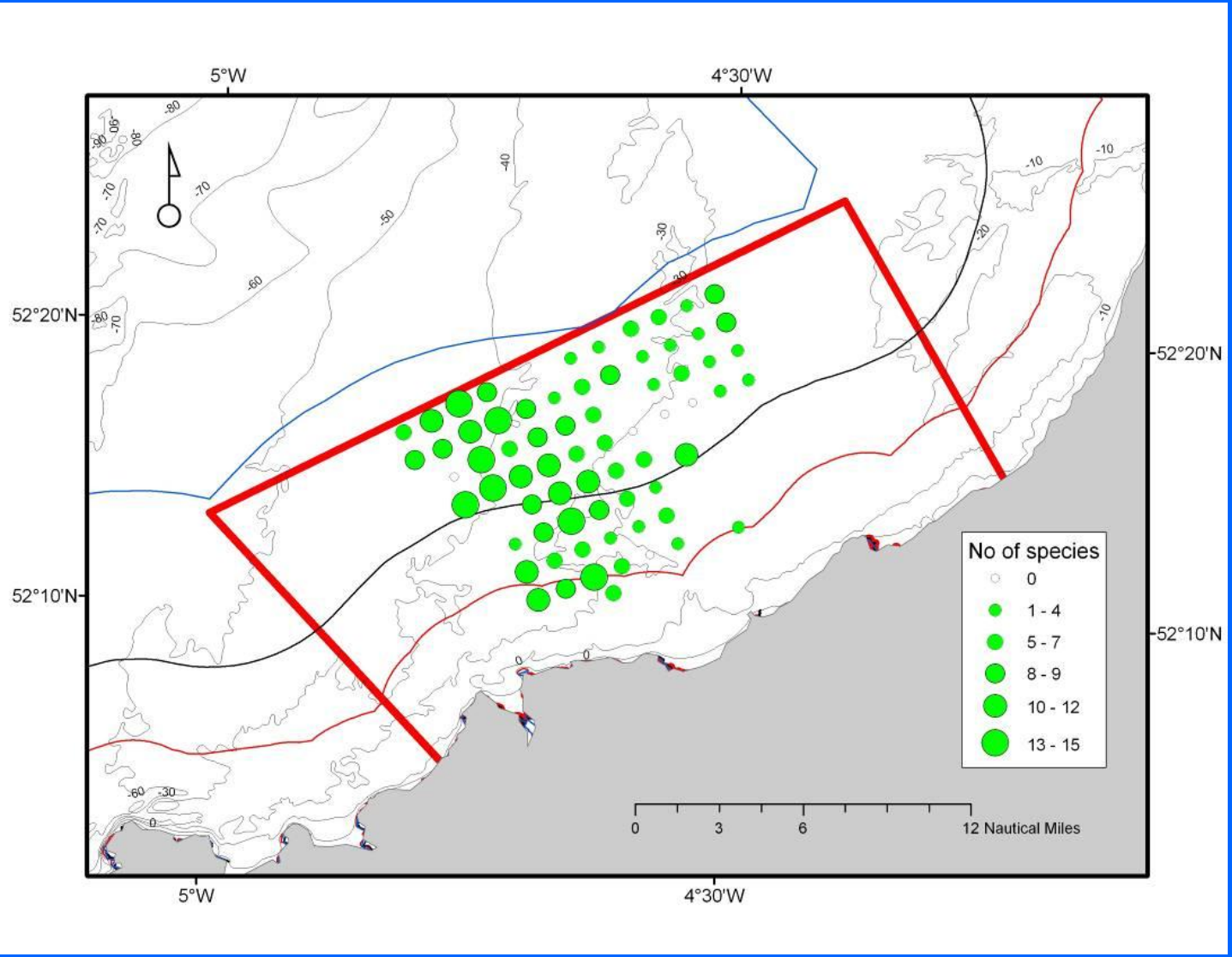
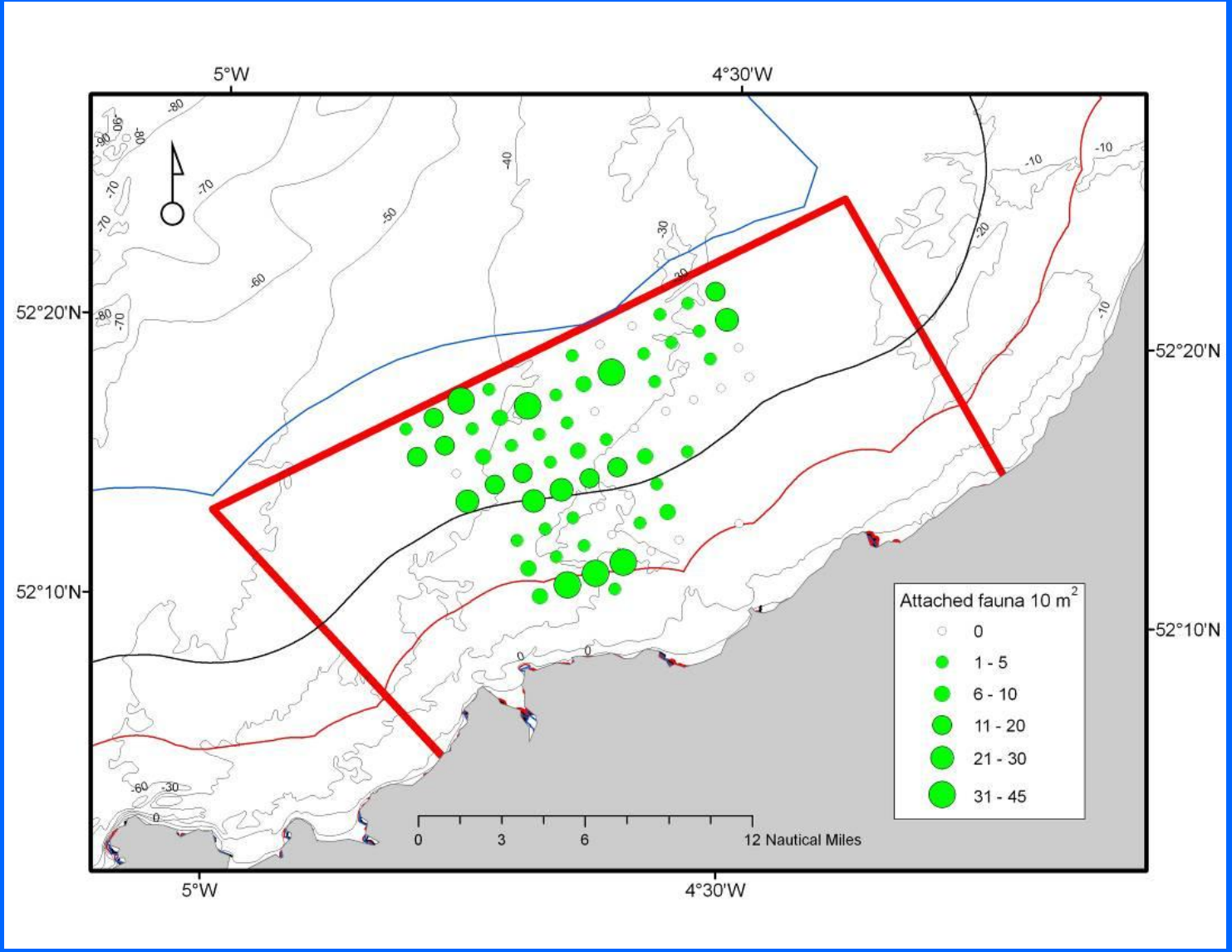
Results – Benthic fauna

Number of species per tow



Results – Benthic fauna

Abundance of attached benthic fauna



Results – Benthic fauna

Multivariate community analysis

Group 3

Average similarity: 17.01

Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
Pecten maximus	0.39	5.57	0.78	32.71	32.71
Aequipecten opercularis	0.37	3.6	0.49	21.19	53.9
Cellaria	0.29	1.59	0.39	9.36	63.26
Hydroid turf	0.2	1.53	0.37	8.99	72.25
Ophiura albida	0.33	1.09	0.33	6.44	78.69
Liocarcinus spp.	0.07	0.78	0.28	4.6	83.29
Pagurus bernhardus	0.06	0.51	0.25	3.02	86.31
Ciona intestinalis	0.19	0.44	0.18	2.6	88.91
Inachus spp.	0.08	0.4	0.24	2.35	91.26

Group 2

Average similarity: 25.39

Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
Cellaria	0.06	10.87	0.41	42.79	42.79
Ebalia spp.	0.07	7.99	0.41	31.48	74.27
Crangon spp.	0.06	6.53	0.41	25.73	100

Group 1

Average similarity: 42.11

Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
Callionymus spp.	0.14	42.11	2.04	100	100

Results – Benthic fauna

Comparison of abundance data with other reef areas

Location Number of stations	Cardigan Bay (Station 15, 27 ,76)	Point of Ayre (Isle of Man) (3 stations)	Lyme Bay (South west England) (3 stations)
Hydroid turf	2	136	213
Soft coral - *Alcyonium digitatum*	3	322	62
Gorgonian - *Eunicella verrucosa*	-	-	64
Anemones	0	78	26
Porifera (Sponges)	0	18	429
Emergent bryozoan	4	136	31
Ascidians	3	0	138
Total abundance per 10 m^2	**12**	**689**	**962**

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Conclusion

• Area composed of rough ground with overlying sand waves (indication of a dynamic environment).

•Sand and gravel waves representing the main visible habitat type.

• Fauna relatively poor in comparison to other areas (dominated by species typical of highly disturbed areas).