Port of Falmouth capital dredging: Review of new evidence on likely SAC impacts

Dr Miles Hoskin

Coastal & Marine Environmental Research

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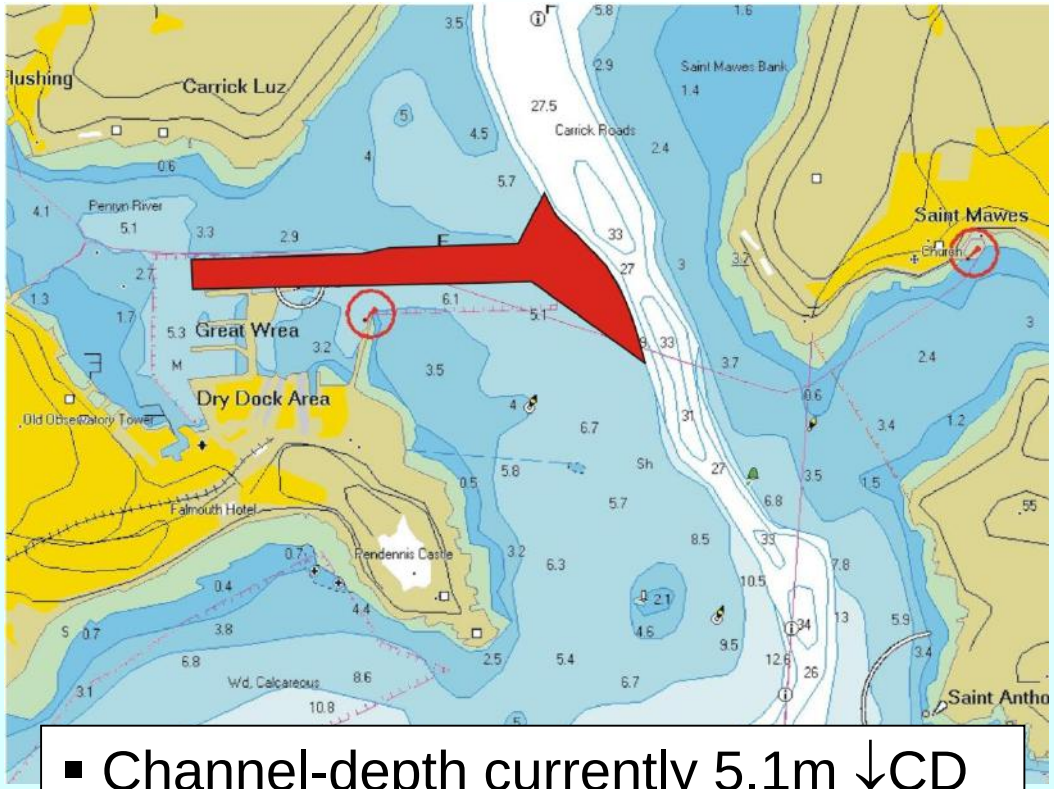
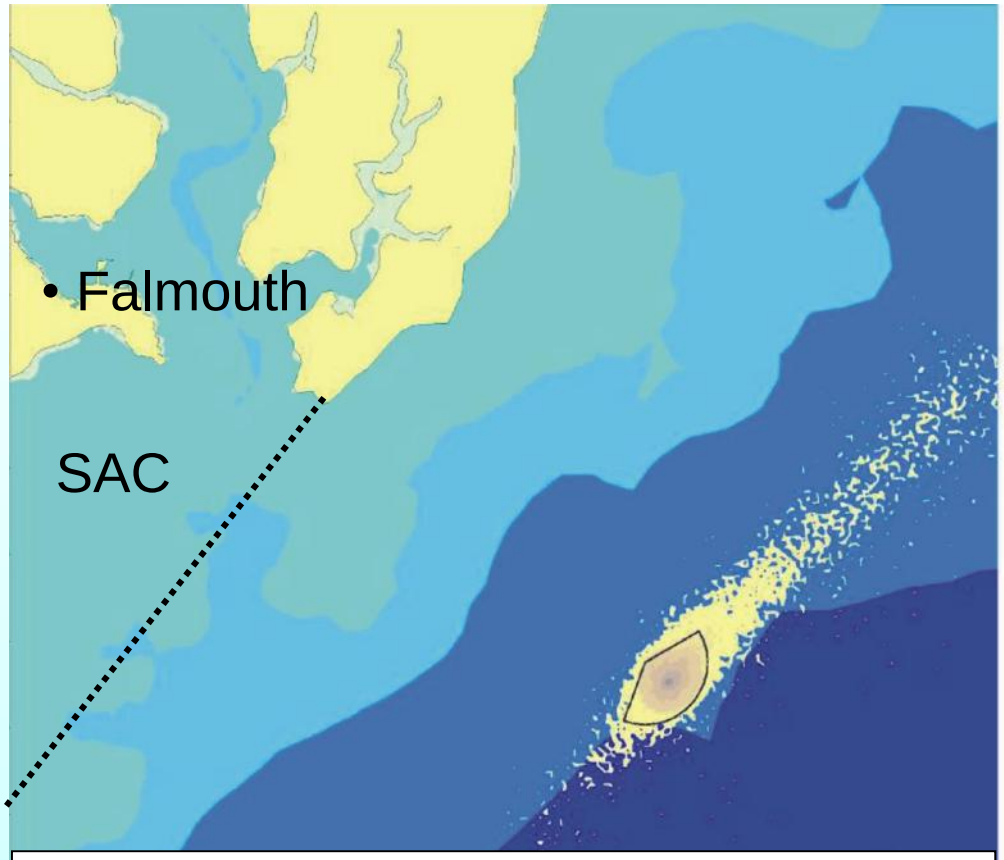
Key points of this talk

- New push for consent to capital dredge deeper approach channel to Falmouth Docks.
- Previous application rejected in 2011 because of likely adverse effect on Fal & Helford SAC.
- New attempt relies on:
  - modified mitigation scheme; and
  - Some new evidence concerning key impacts.
- CMER reviewed new evidence for the Marine Conservation Society.
- We believe adverse effects still highly likely.

Proposed dredging & spoil disposal



- Channel-depth currently 5.1m ↓CD
- Last navigational dredge 1965
- Proposed dredging to 8.3m ↓CD.
- 6-7 months continuous dredging.
- Putative benefits for port in cruise, cargo & ship-repair sectors.



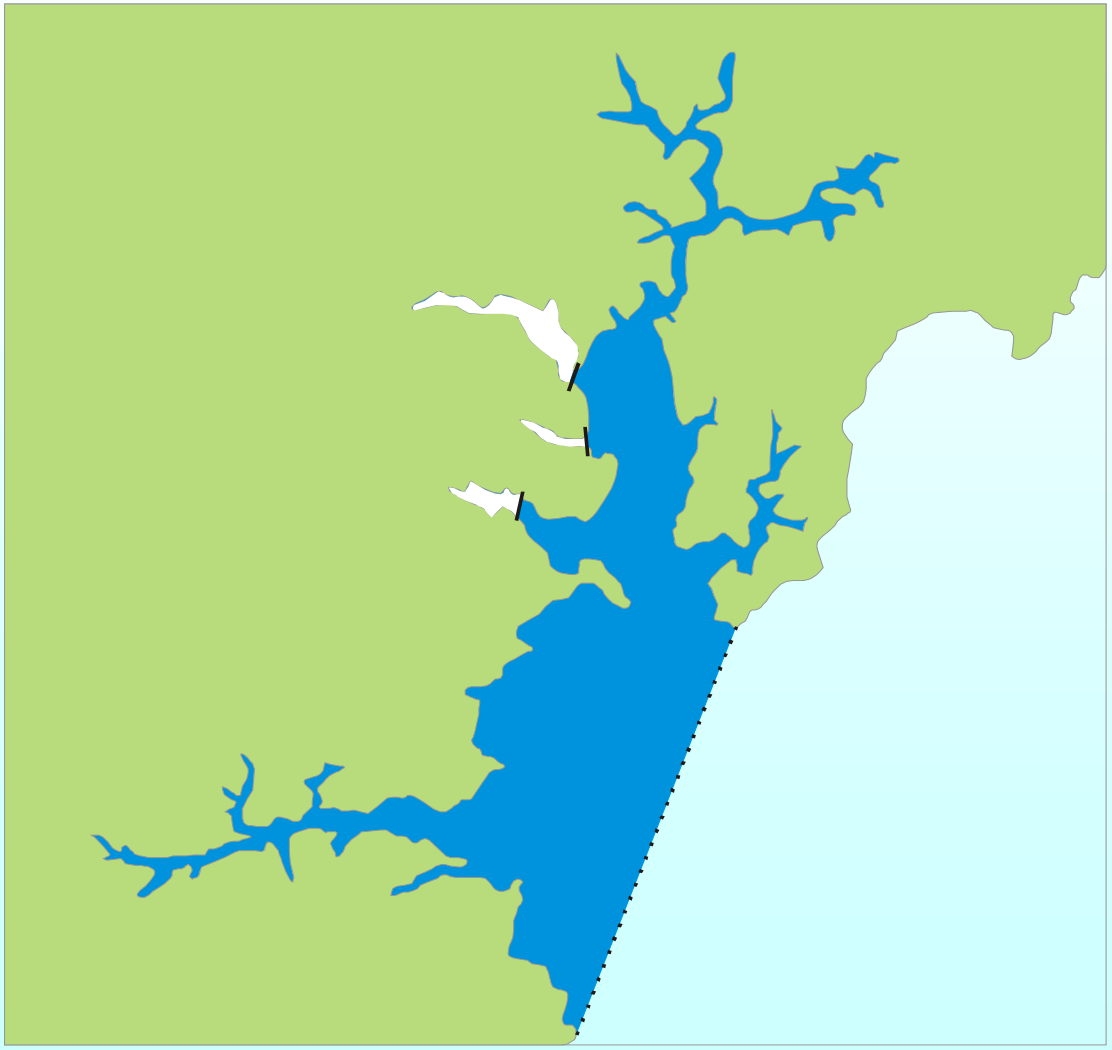
- >1 million tonnes spoil to be dumped at sea in Falmouth Bay.
- 21x more than in any previous year at this disposal site.

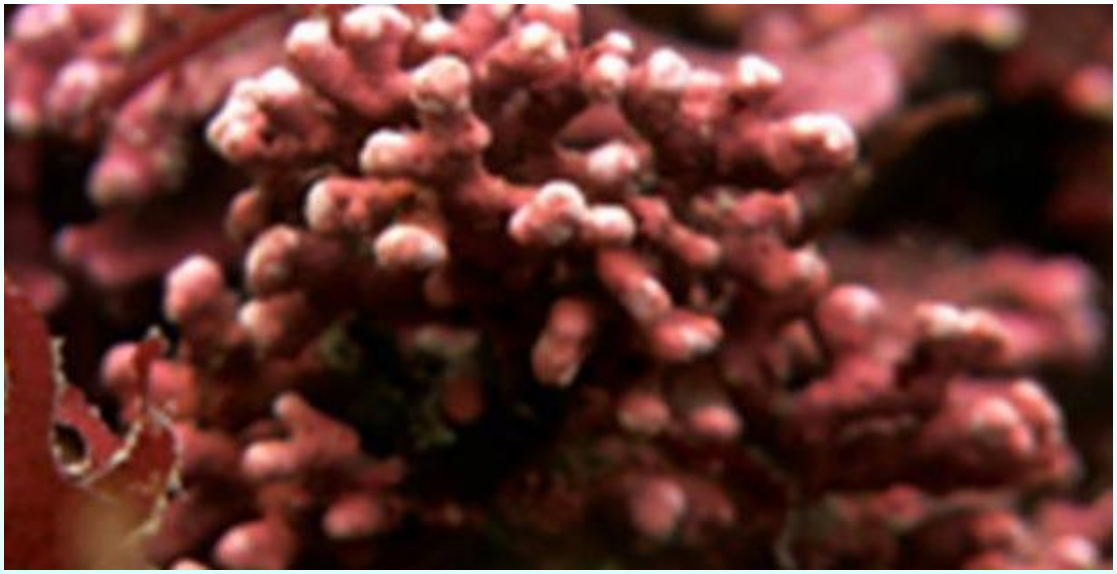
REFUSED

Marine Management Organisation

27 Jan 2011

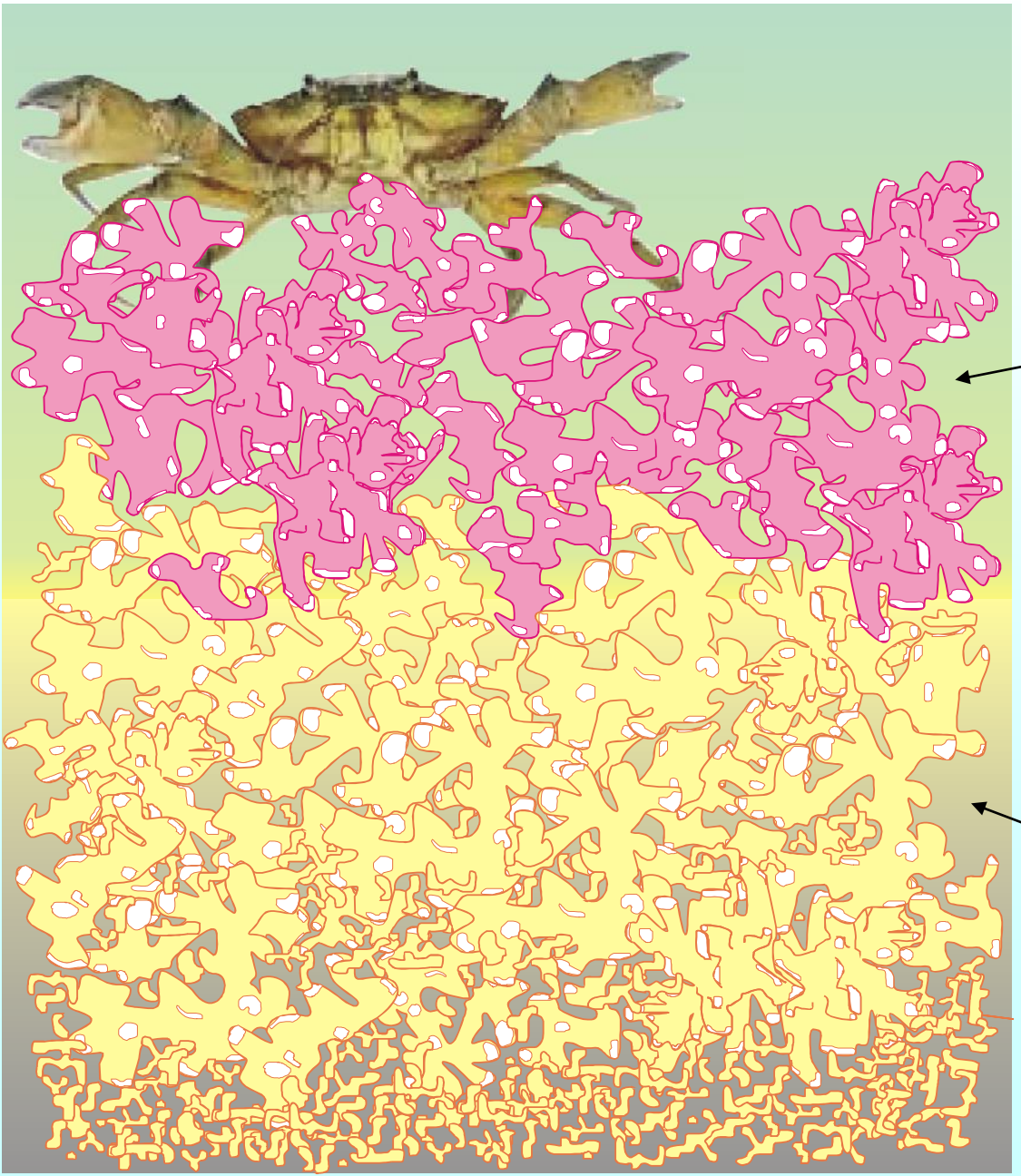
Fal & Helford Special Area of Conservation (SAC)





- Maerl – rare, slow-growing, vulnerable coralline red alga
- High biodiversity habitat
- Fal unique in England

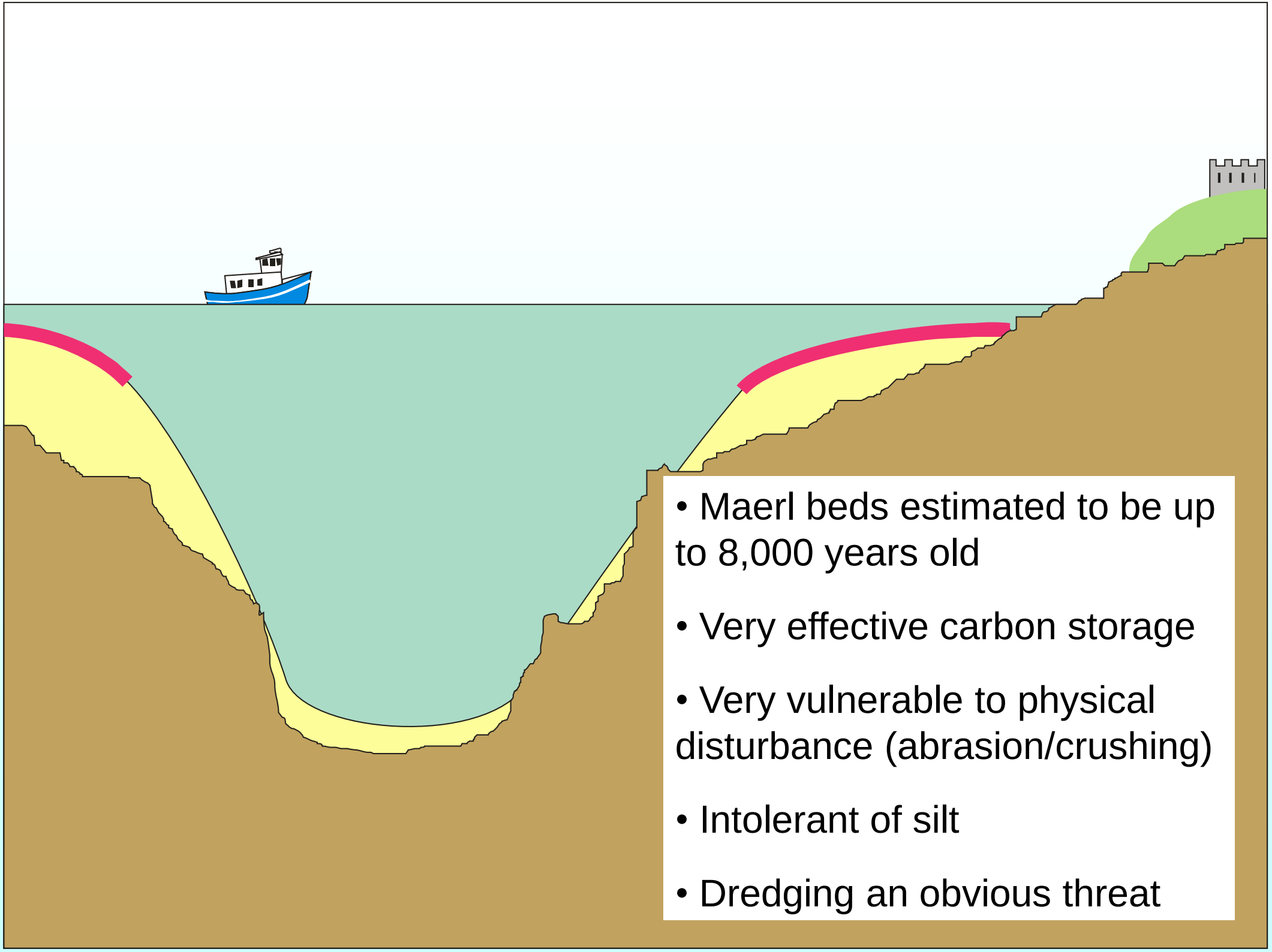
What is a maerl bed?



Thin layer of
live maerl nodules -
up to 20cm deep

Lots of holes &
crevices for small
animals to live in

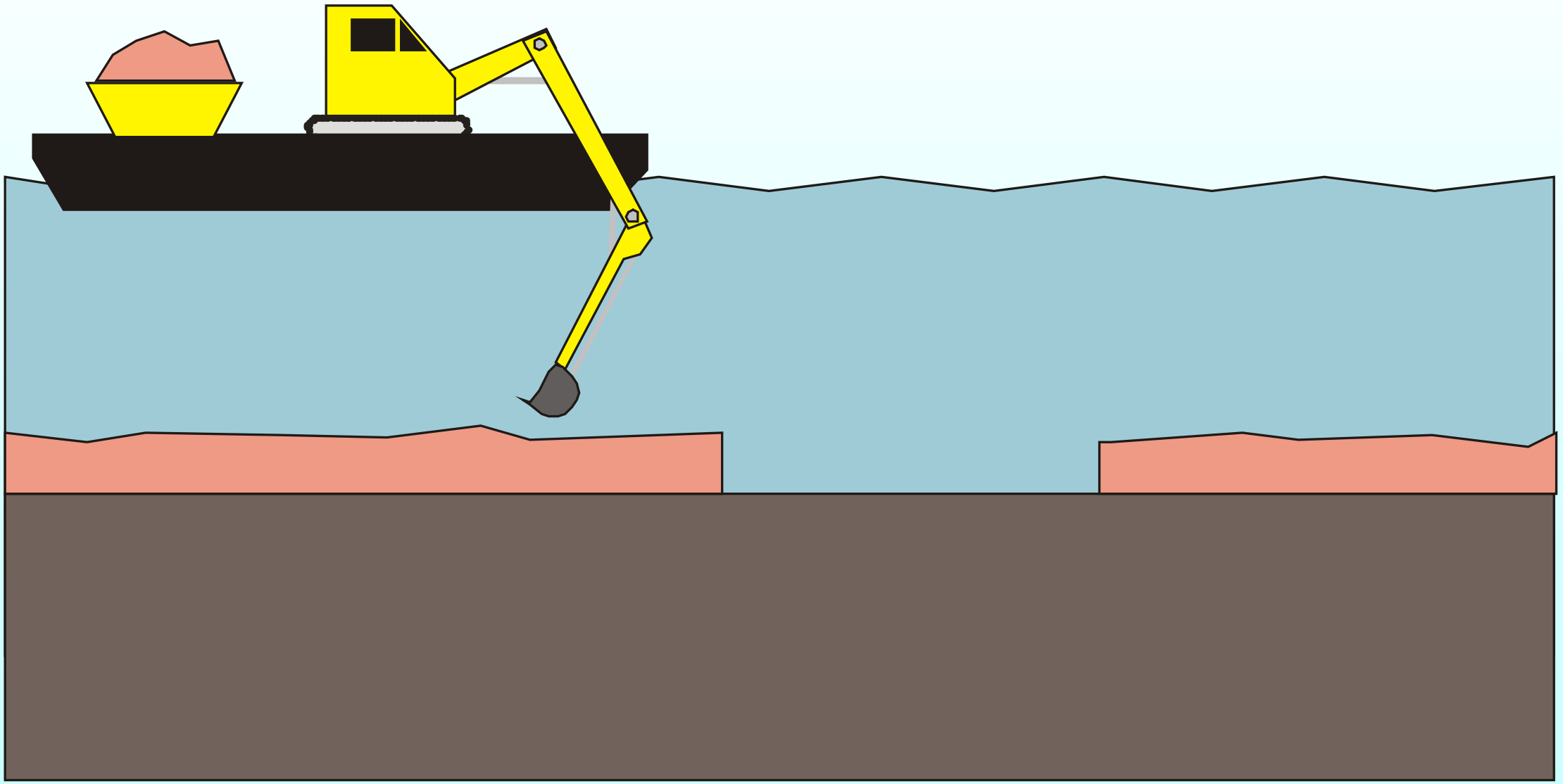
Thick layer of
dead nodules &
maerl sand -
many metres deep


• Maerl beds estimated to be up to 8,000 years old
• Very effective carbon storage
• Very vulnerable to physical disturbance (abrasion/crushing)
• Intolerant of silt
• Dredging an obvious threat

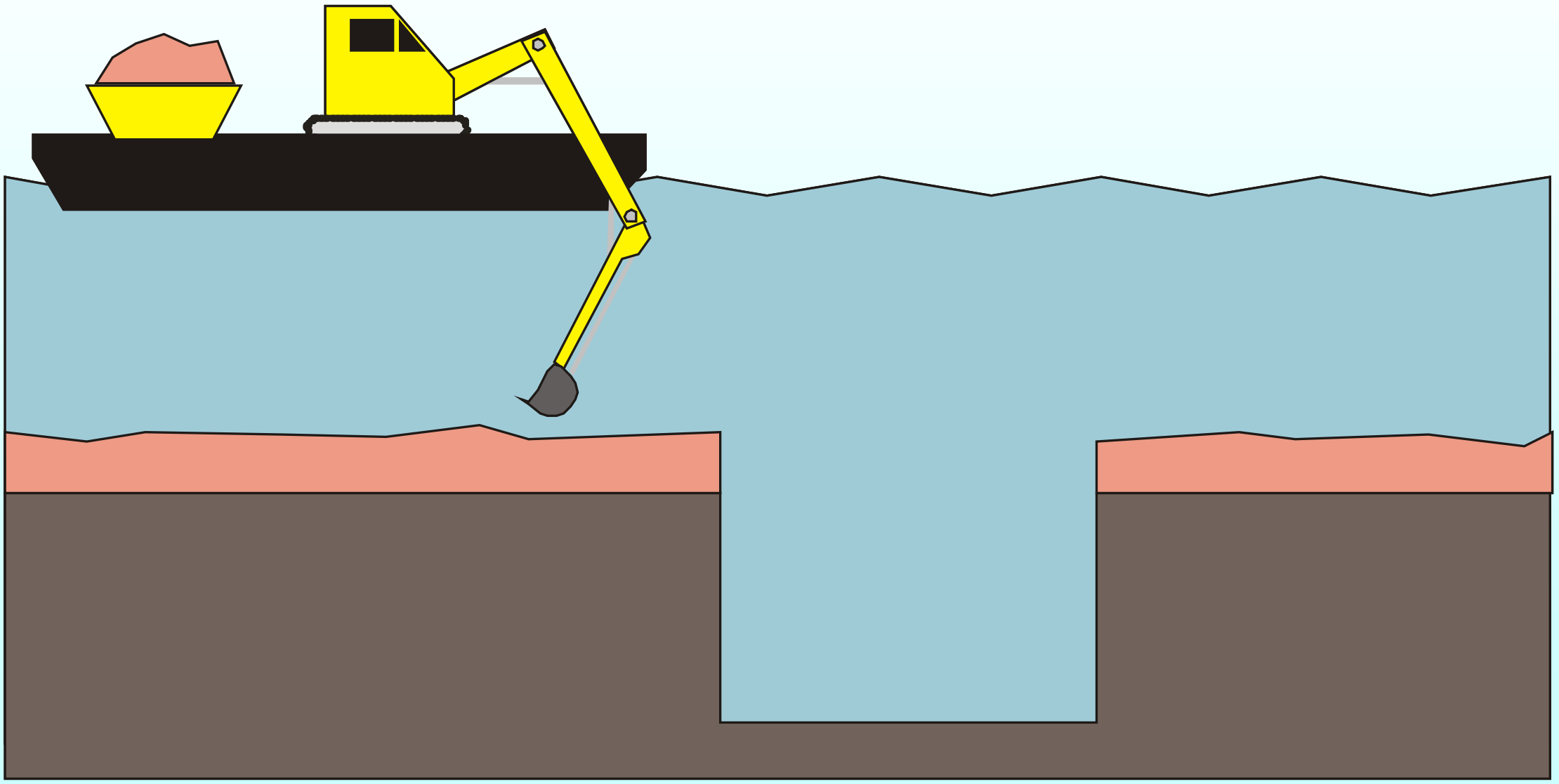
New context for MMO decision

- New SAC conservation objectives require restoration of maerl; as species & habitat.
- ECJ ‘Sweetman’ ruling in 2013:
  - *“lasting or irreparable loss”* of *“the constitutive characteristics of the site”* = adverse effect on site integrity
- Maerl beds should be treated as a non-renewable resource (JNCC 2015).

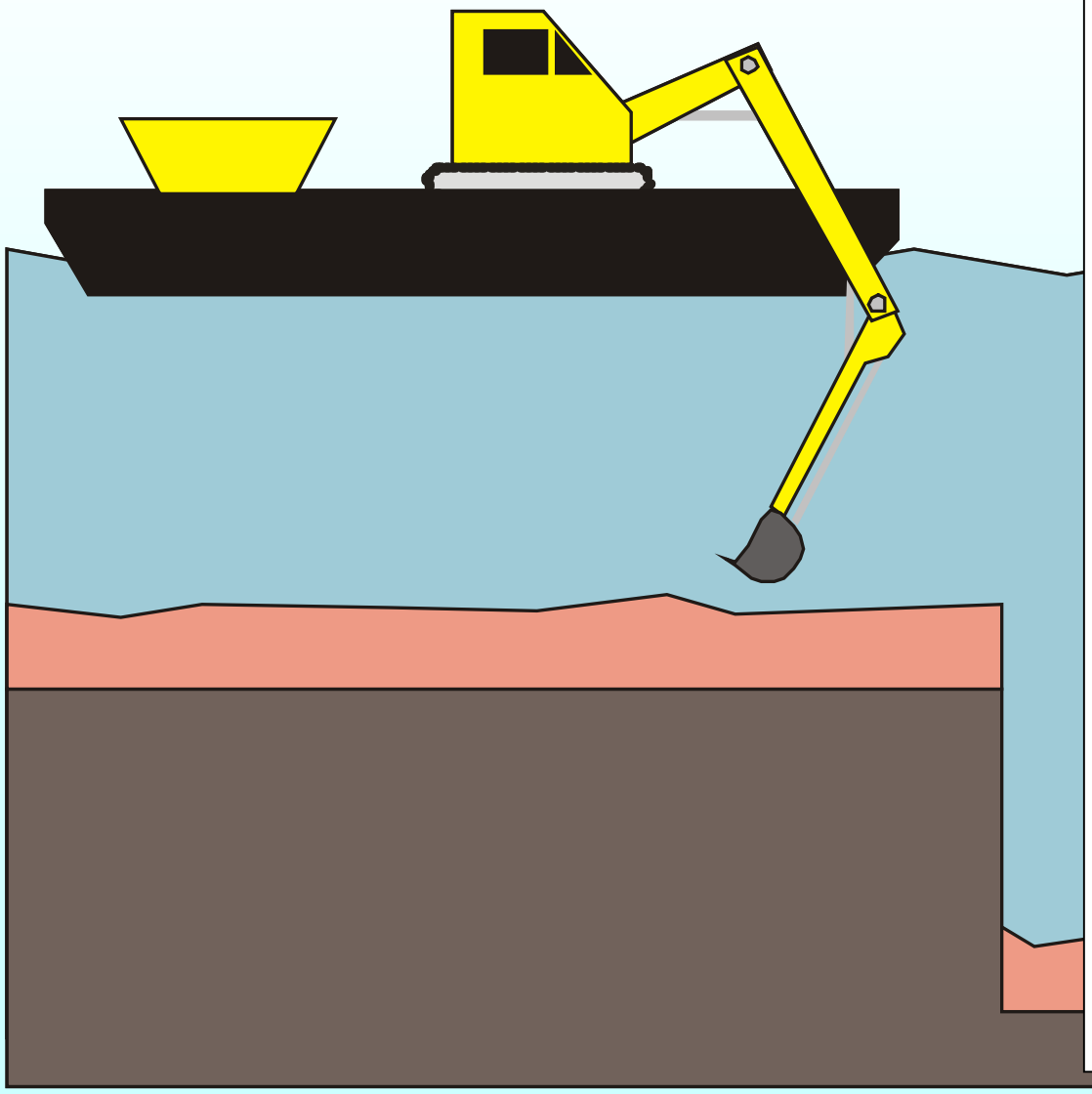
Proposed mitigation



Proposed mitigation



Proposed mitigation



- But.....
- An un-tested concept (at full scale).
- 2.8 hectares only, or 13% of dredge area with maerl habitats.
- Permanent loss of >100,000m^3 of pure maerl, plus >400,000m^3 of maerl mixed with sediment.
- = '*constitutive characteristics*'

Maerl mitigation trial

- Carried out in 2012/13 by Uni. of Plymouth.
- Small-scale trial - 0.02% size of full dredge.
  - No depth increase in trial !
- Assessed recovery over 44 weeks.
- Success criteria defined before the trial by an Independent Science Advisory Panel set up by the MMO.
- Failures point to adverse effects on SAC.

Recovery successes ☺

- Number of infaunal species.
- Total abundance of all infauna.
- Species composition of infaunal assemblage.
- Biomass of some infaunal taxa.

Recovery failures ☹

- No tests for any epifauna.
  - Sampling unit too small, so insufficient data.
- Annelid biomass failed to recover.
- Changed nature of the maerl matrix.
  - Significant loss of fine sediment
  - Bigger spaces between maerl pieces
  - Reduced organic content
- Total loss of living maerl.

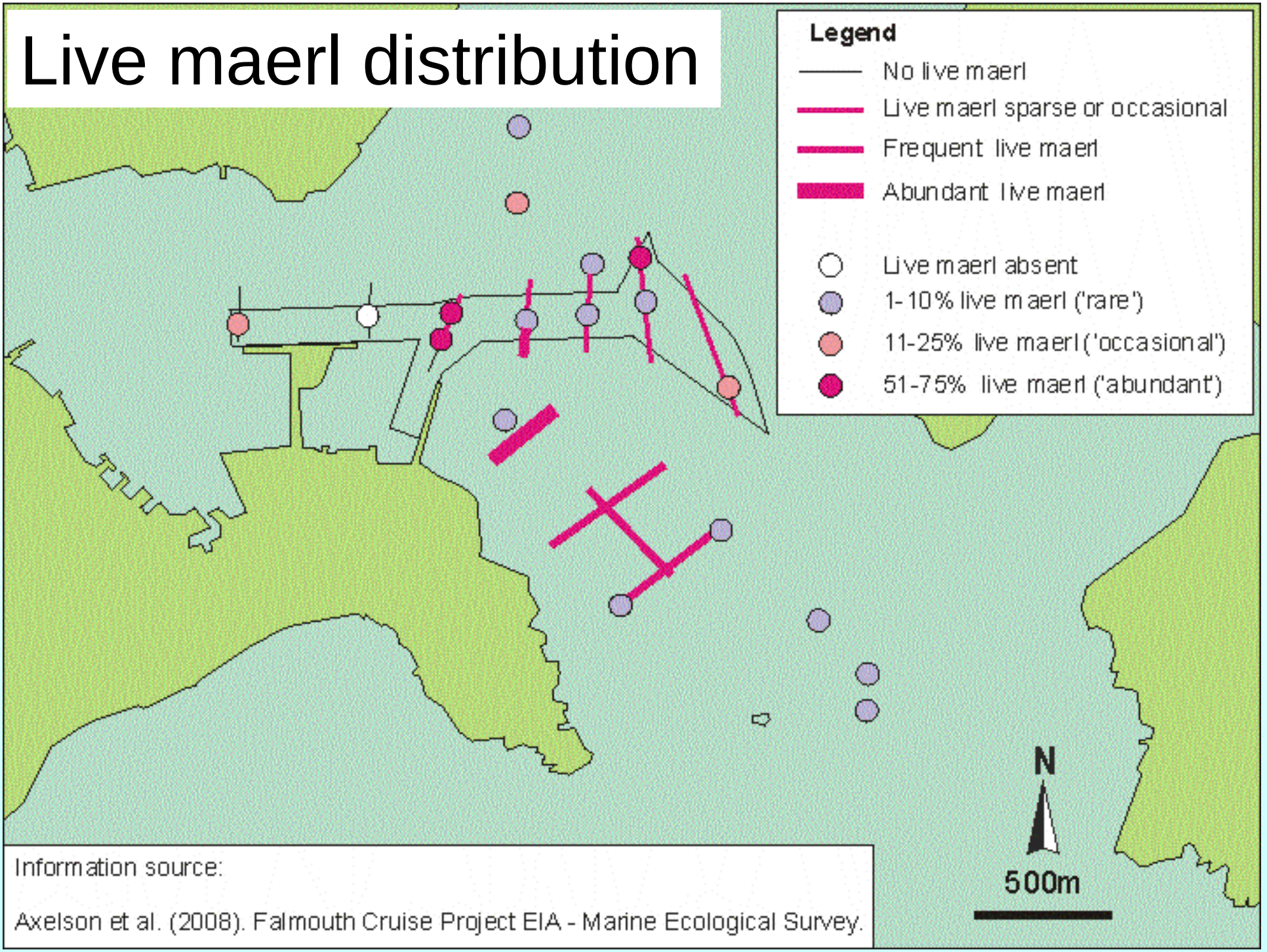
Current situation

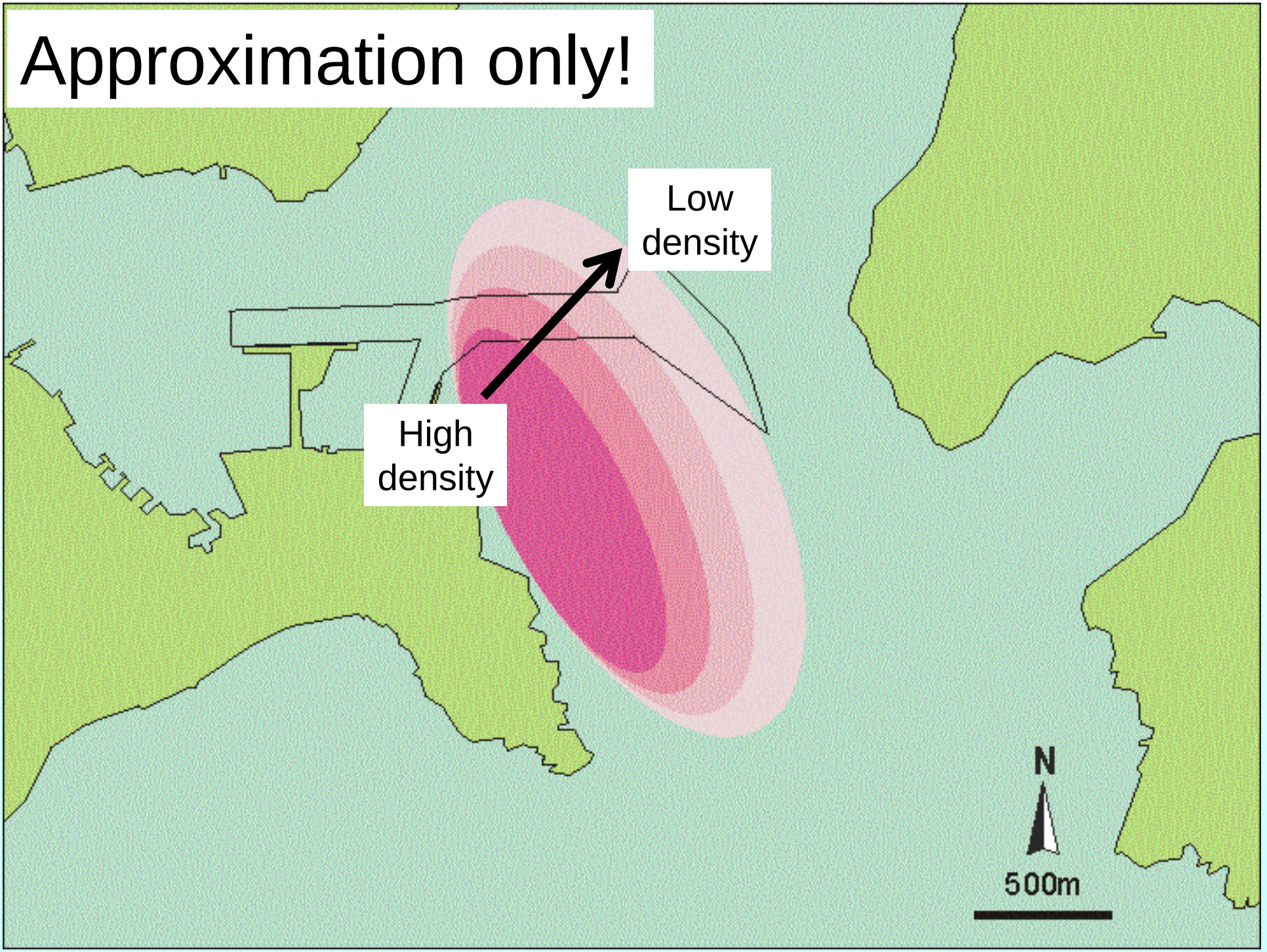
- Proponents pressing ahead despite existing concerns and mitigation failures.
- How?
  - Accentuate the positives of mitigation
  - New arguments against existing concerns
  - Strong political pressure on MMO
- Currently awaiting ‘pre-application advice’ from MMO on likely SAC impact – yes/no
- Risk of pre-determination ??

Two of the key issues now

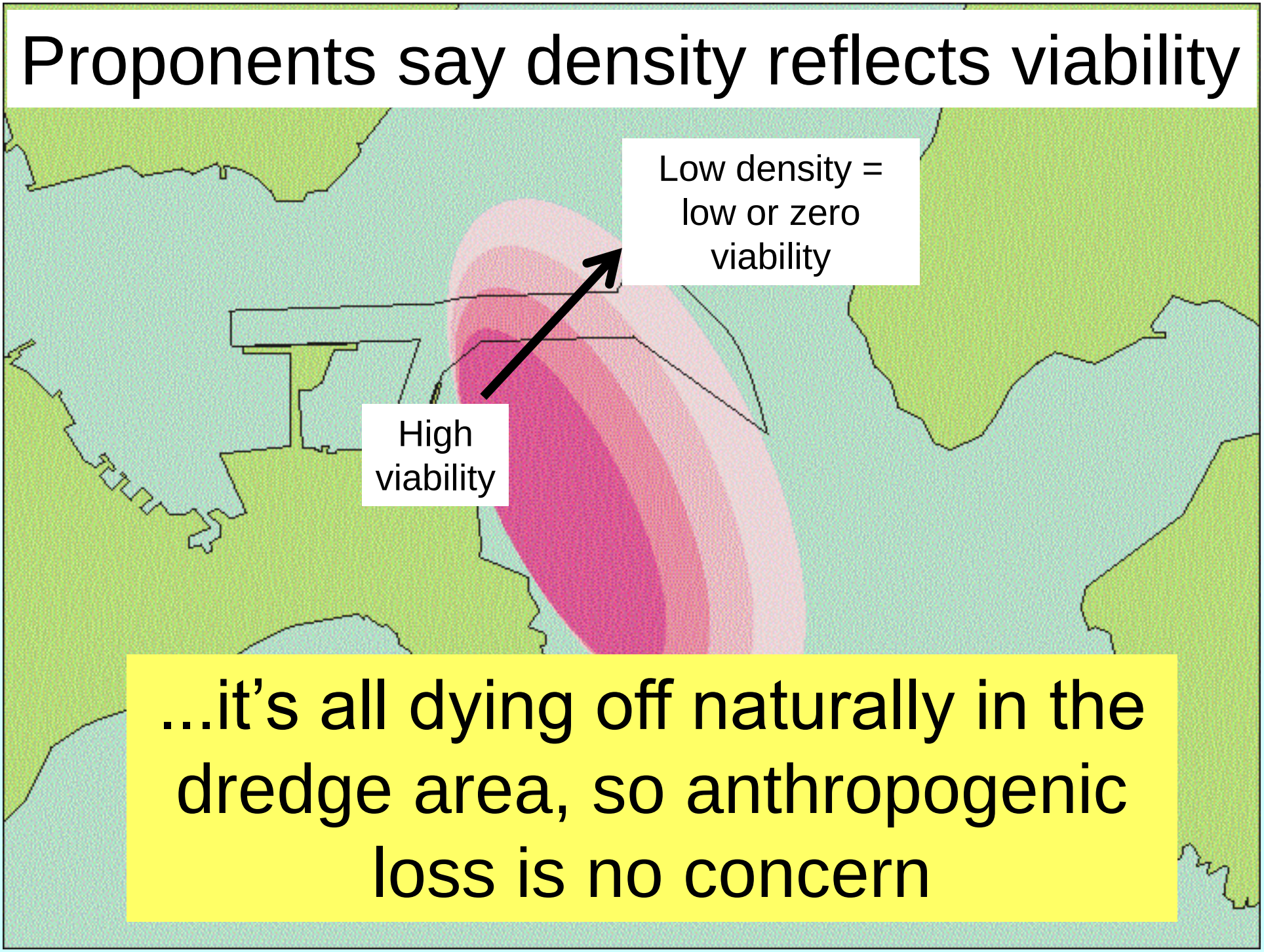
- NE and MMO focussing on two key areas of concern re living maerl:
  - Loss of live maerl within channel, despite mitigation.
  - Smothering of live maerl in adjacent areas by silt mobilised from dredging operation.

Live maerl distribution




Approximation only!
Low density
High density
N
500m

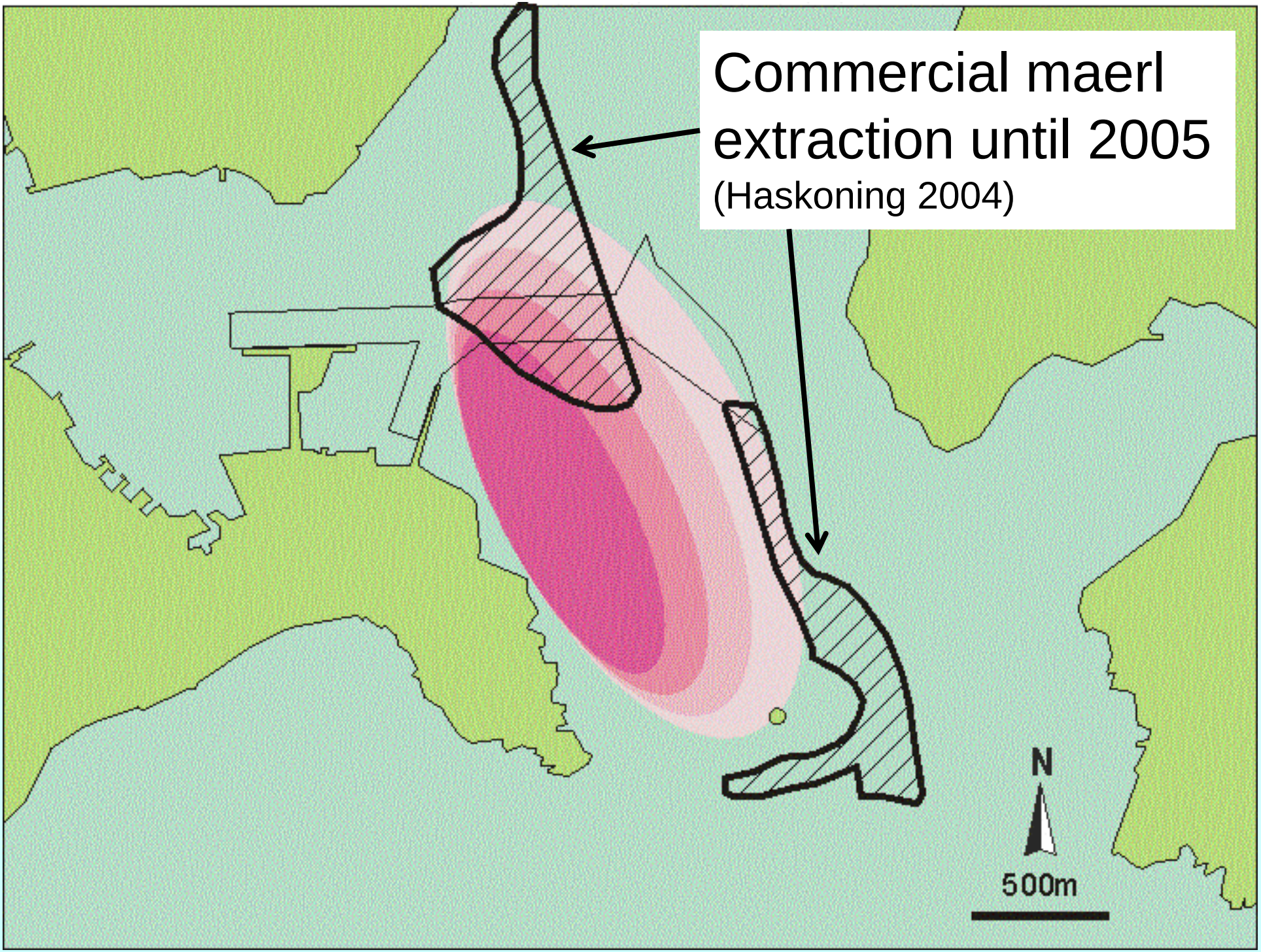
Proponents say density reflects viability



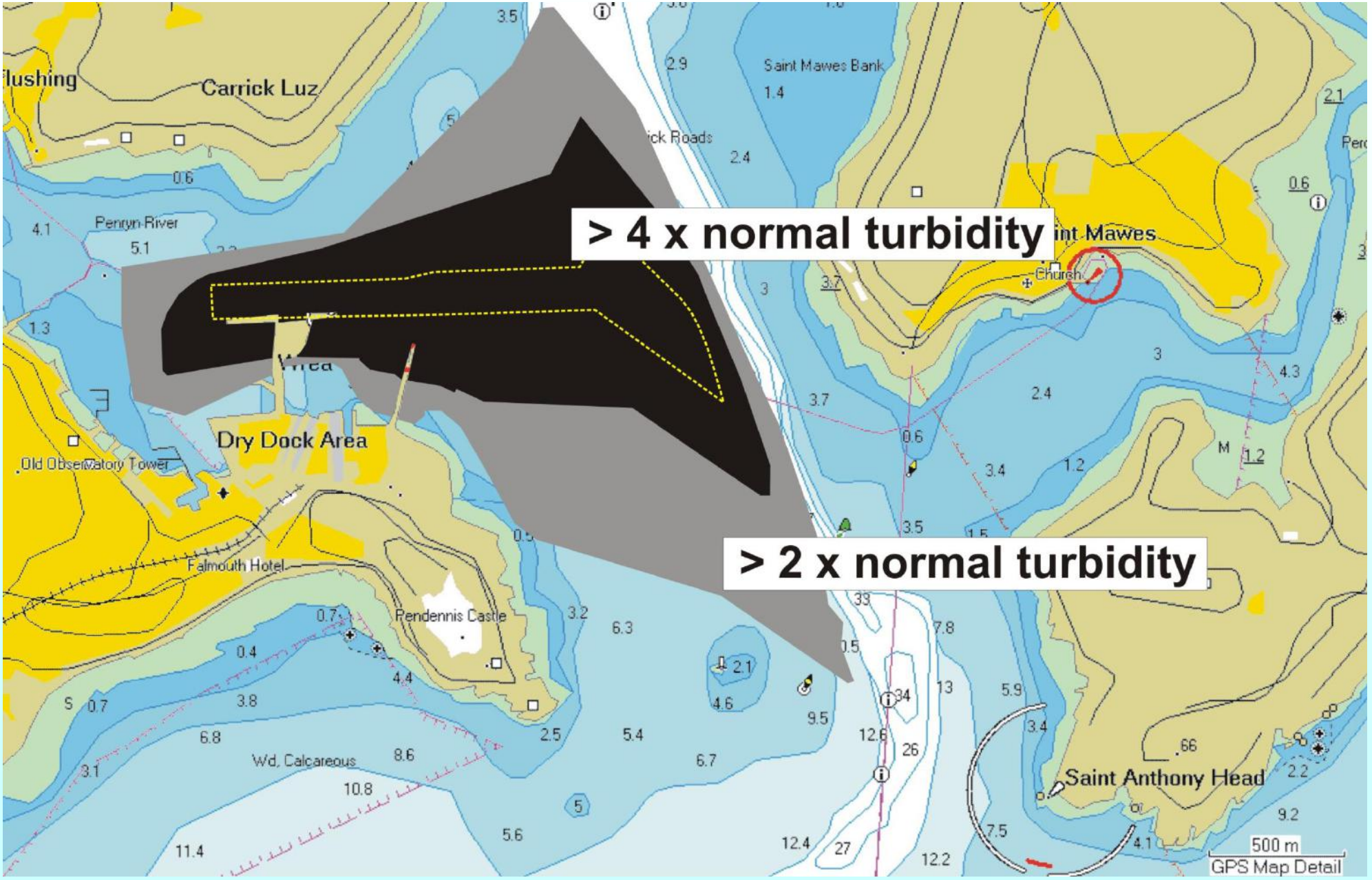
...it's all dying off naturally in the dredge area, so anthropogenic loss is no concern

So is maerl all dying off naturally in the channel?

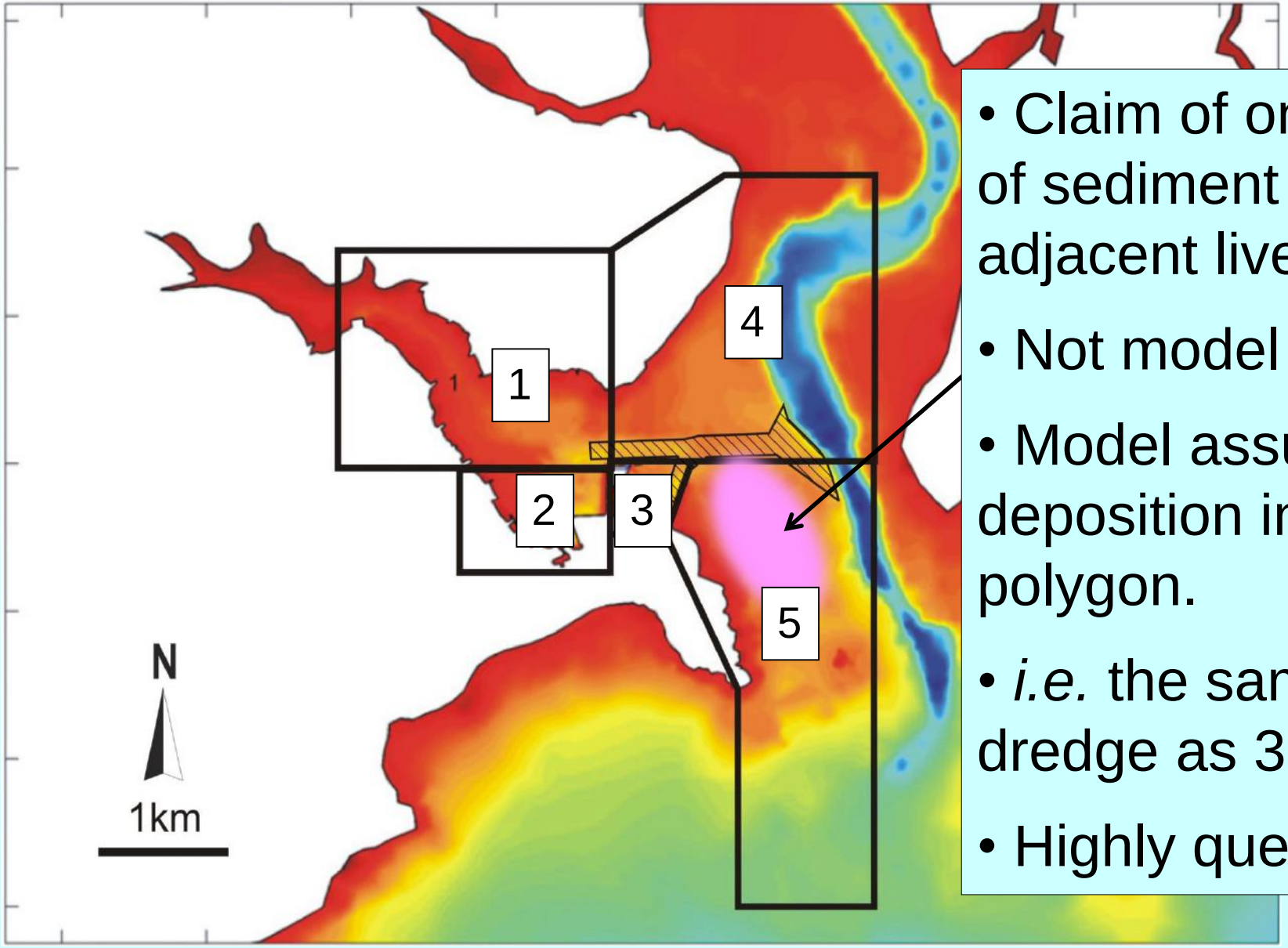
- No temporal trend data are available.
- My personal observations indicate stable cover for at least the last 10 years.
- Key natural factors in dredge area all appear well within range capable of supporting live maerl.
- Notable that part of dredge area was dredged for maerl commercially until 2005.


Commercial maerl extraction until 2005
(Haskoning 2004)
N
500m

Sediment plume (for 6-7 months)



Modelling of sediment export due to dredge disturbance (HR Wallingford)



- Claim of only 1.1 - 1.3mm of sediment deposition on adjacent live maerl.
- Not model finding!
- Model assumes uniform deposition in each polygon.
- *i.e.* the same next to dredge as 3km away.
- Highly questionable.

Other unresolved concerns

- Failure to consider conservation objectives for ‘large shallow inlets and bays’ feature.
  - *e.g.* Maintain topography
- Exceptional uncertainty due to no condition assessment for relevant SAC features.
- Failure to consider effect of increased depth (↓3m) on maerl habitat.
- Uncertainty over need for ongoing maintenance dredging.

Conclusion

- We say....
- Evidence still strongly indicates that dredging would adversely effect the integrity of the Fal & Helford SAC.
- Uncertainty too great for valid consent.
- Politically very risky MMO to indicate any likelihood of approval at pre-application stage.

West Briton newspaper (12/1/17)

Application to be resubmitted soon if MMO says yes

Advocate General's advice to ECJ in Sweetman

" It is thus an essential objective of the Directive that natural habitats be maintained at and, where appropriate, restored to a favourable conservation status. Such an aim is necessary in the context [...] of a continuing deterioration in those habitats and the need to take measures in order to conserve them. That is a fortiori the case as regards priority natural habitat types. "

Natural England advice, pre-trial

12/3/2012

- The trial will indicate adverse effect on SAC integrity if:
  - The physical structure of the maerl habitat is significantly changed. **FAIL**
  - The associated community shows no trend in recovery. **PARTIAL FAIL**
  - The percentage cover of live maerl is significantly lower. **FAIL**