

# Life after dredging

## Sensitivity of UK seabed habitats to aggregate extraction

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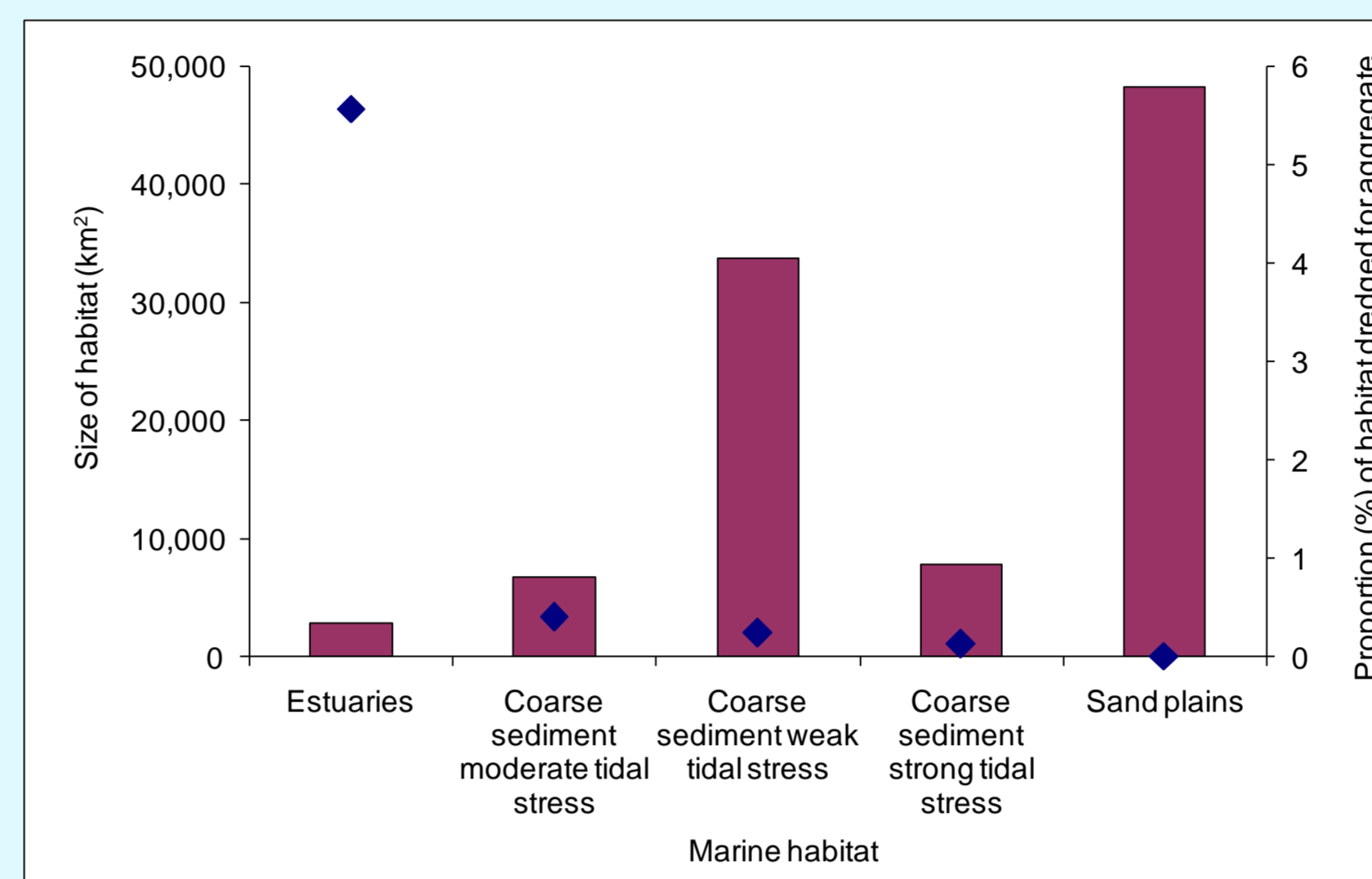
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Aggregate (sand and gravel) is dredged from the UK seabed and used in construction of buildings and infrastructure. The dredging process damages the physical environment and the biology of the seabed. The physical and biological recovery times increase in proportion with habitat sensitivity. An *ecosystem approach* to managing dredging could help minimise future damage. This approach aims to balance sustainable use with the conservation of our environment.

### From where do we currently dredge aggregate?

At present marine aggregates are dredged from five main habitat types, as shown in the plot.

Estuaries constitute a relatively small area of the UK's seabed (3,000 km<sup>2</sup>) and 6% of their area is dredged for aggregate. Less than 1% of the other four habitats are dredged.



UK marine habitats targeted for aggregate minerals.

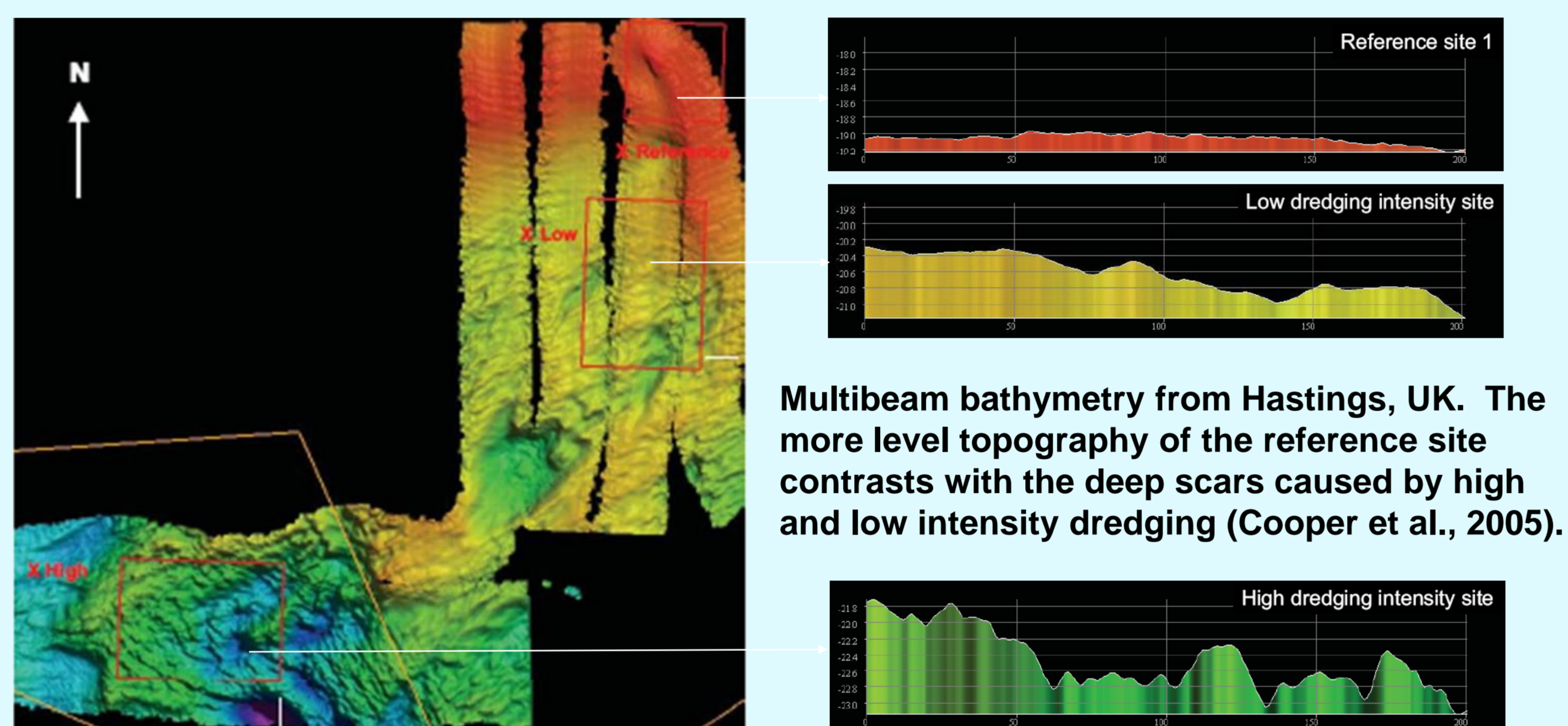
#### KEY

Bars = total size of marine habitat in UK waters (km<sup>2</sup>).

Points = proportion of a habitat dredge for aggregate. (%)

### What happens to the seabed?

Physical damage – dredge scars



Biological damage – flora and fauna lost



### Which habitats are most sensitive to aggregate dredging?

We conducted a literature review of recovery times of seabed habitats, following cessation of aggregate extraction. The mean periods for biological and physical recovery by habitat type are shown below. Estuaries have the shortest recovery times, dredge sites in other habitats could take up to 20 years to recover.

Physical recovery	Rapid recovery – resilient	Biological recovery
Estuaries		Estuaries
Coarse sediments strong tidal stress		Coarse sediments strong tidal stress
Sand plains		Sand plains
Coarse sediments weak tidal stress		Coarse sediments moderate tidal stress
Coarse sediments moderate tidal stress		Coarse sediments weak tidal stress
1.5 years	5 years	12 years
20 years	Slow recovery – sensitive	

### How will the ecosystem approach minimise future damage?

Extraction licences could be located to avoid the most sensitive marine habitats and to target the most resilient. This would mean the majority of extraction would be from estuaries that have the desired grades of sand and gravel. Meanwhile, aggregate deposits in habitats with coarse sediments of moderate and weak tidal stress could be avoided (Foden et al., in press).



#### References

- Cooper KM, Eggleton JD, Vize SJ, Vanstaen K, Smith R, Boyd SE, Ware S, Morris CD, Curtis M, Limpenny DS, Meadows WJ (2005) Assessment of the rehabilitation of the seabed following marine aggregate dredging – part II. Science Series Technical Report 130, Cefas, Lowestoft.
- Foden J, Rogers SI, Jones AP (in press) Recovery rates of UK seabed habitats after cessation of aggregate extraction. Marine Ecology Progress Series.
- MARINET (2004) briefing paper; Marine Aggregate Dredging – Abbreviated Version.