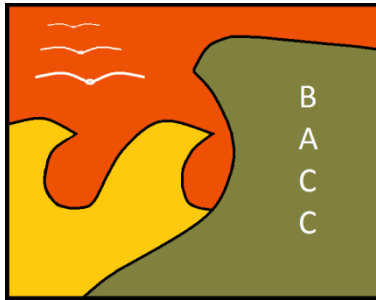


Inter-tidal habitat creation - experience in England

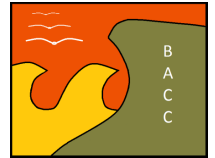
Roger Morris

Bright Angel Coastal Consultants



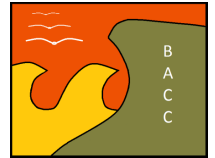
www.bacoastal.co.uk

Sources and associations



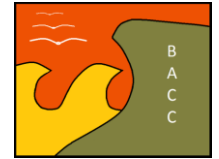
- Work undertaken for Mr Stephen Kirkwood to support his objections to Able Marine Energy Park (http://www.bacoastal.co.uk/Projects/AbleMarine/2012_07_29_cherry_cobb_compensation_site.pdf)
- Project WC1076 Evidence on appropriate compensation to facilitate and direct infrastructure development (Defra & Natural England). Project led by BACC with an international team of contractors.
<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18861&FromSearch=Y&Publisher=1&SearchText=natura%202000&SortString=ProjectCode&SortOrder=Asc&Paging=10>
- Also see <http://www.bacoastal.co.uk/projects.html>

Some statistics



- Nine managed realignment sites completed & one in development.
- Six relate to port development and four to flood-risk management.
- Oldest site now 15 years old.
- Total of over 375ha compensation with more to come in stages.

Chowderness: An example

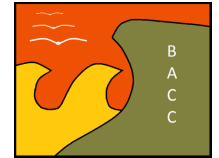


2010 (4 years after breach)



2012 (6 years after breach)

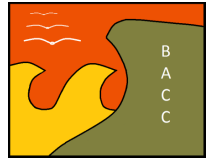




Key messages

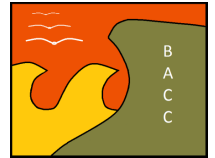
- It is straightforward to create **some** inter-tidal habitats but expect the unexpected.
- Inter-tidal habitats are part of a continuum and where habitat is created in former accommodation space it must be expected to progress towards saltmarsh and ultimately to forested areas (as on the Elbe).
- Durability of mudflat depends upon position of the site in the tidal frame and the suspended sediment load of the host estuary.

It is intertidal habitat, but not what we wanted!



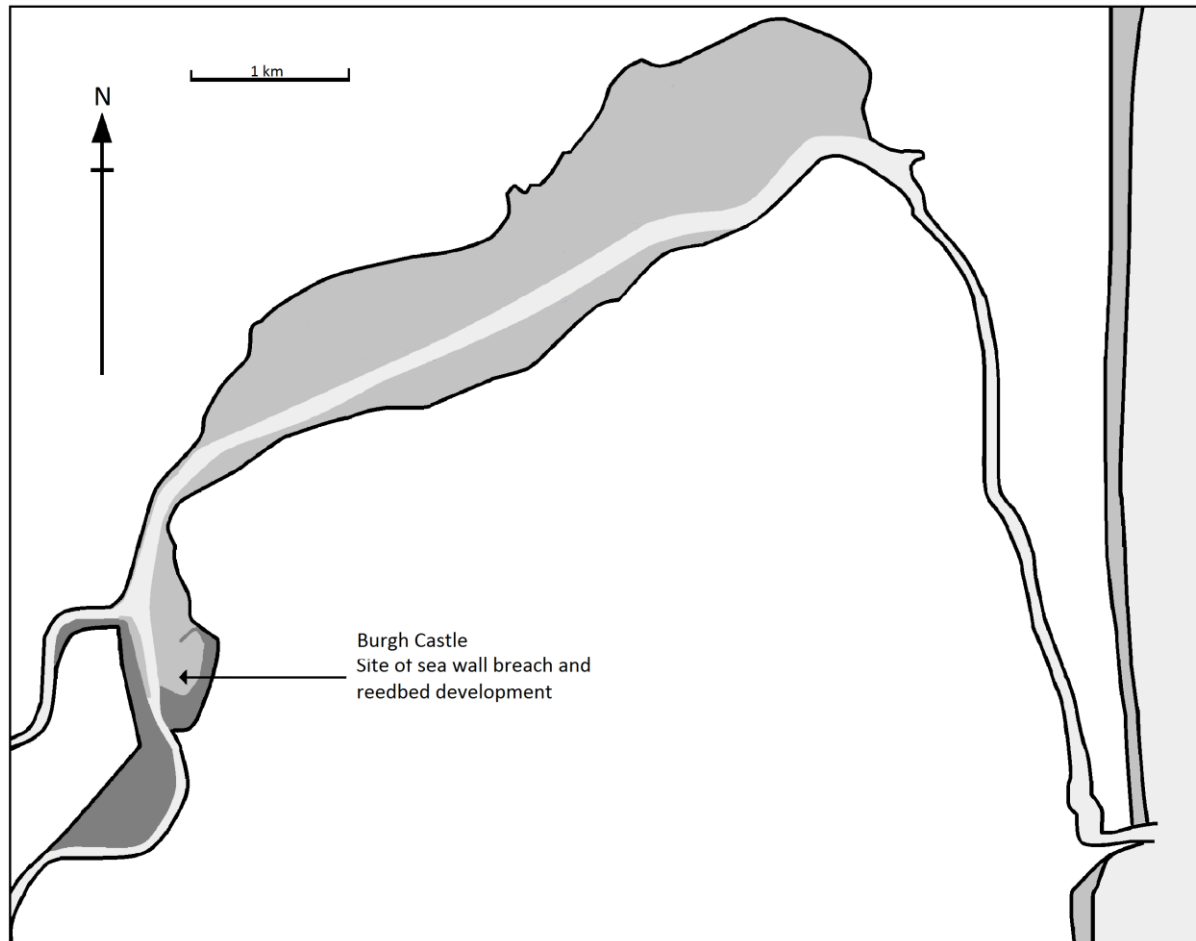
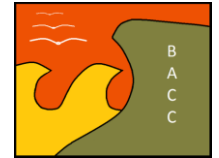
- Evidence from the majority of intertidal habitat creation projects suggest that mudflat is unlikely to be created in the long-term except where very specific conditions prevail.
- Nevertheless, compensatory habitat can be provided within the broad perspective of estuary dynamics.
- That will not satisfy everybody! But then, should we be seeking to avoid any change at all?

Need for further thinking

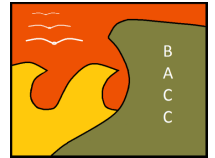


- How do we create mudflats – I have some ideas. The critical issues seem to involve:
 - Sediment supply – too much and there is rapid evolution of saltmarsh and forest.
 - Site orientation – we perhaps under-estimate the importance of wind-driven waves.
 - Ebb/flood dominance – if you want an accreting system flood dominance is more desirable than ebb dominance; conversely, if you want stability at a lower morphological level ebb dominance might be a better option.

Can we learn from existing models? Breydon Water



Summary



- We can replace extent – the first principle of favourable condition (no loss of extent).
- We can contribute to the development/maintenance of a dynamic system.
- Currently we cannot **reliably** reproduce mudflat in perpetuity but there may be solutions.