GOOSEMOOR

REGULATED TIDAL EXCHANGE PROJECT

for birds • for people • for ever

THE PROBLEM

- **'Coastal squeeze' is drowning out coastal habitats, such as intertidal mud and saltmarsh**
- **Estimates suggest that the UK is losing up to 100ha of saltmarsh and 450ha of mudflats per year**
- **At current rates, it is estimated that over 25,000ha of intertidal mud will be lost by 2050**

WHY ARE COASTAL HABITATS SO IMPORTANT?

- Many coastal habitats and intertidal areas are internationally important for migratory and wintering waterfowl

- Coastal habitats also provide flood defence benefits, social and economic benefits

SOLUTIONS – MANAGED REALIGNMENT

The setting back of hard sea defences to allow tidal flooding of previously defended land.

FREISTON SHORE RSPB RESERVE

SOLUTIONS – REGULATED TIDAL EXCHANGE

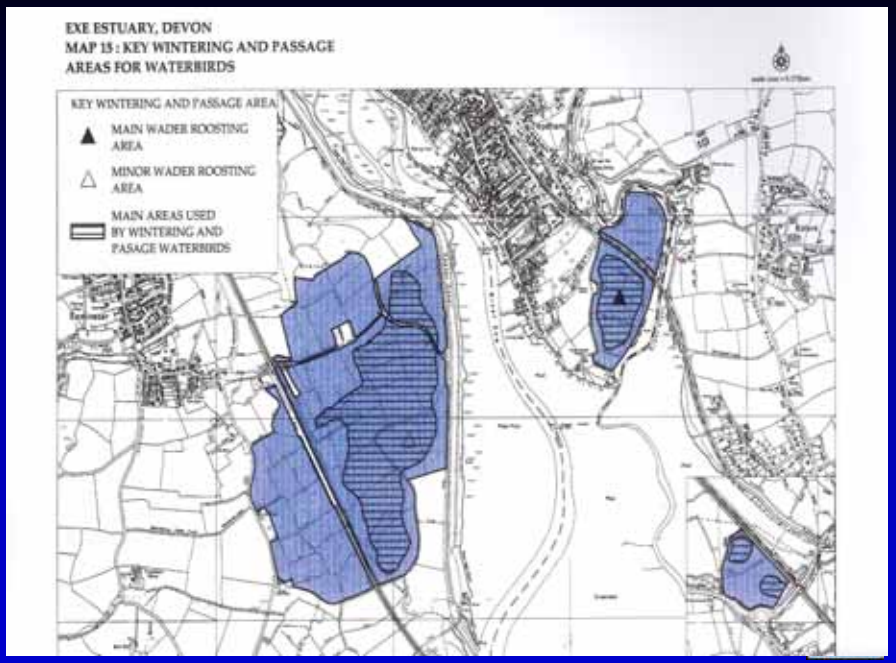
The regulated exchange of seawater to an area behind fixed sea defences, through engineered structures such as sluices, pipes or tide-gates, to create saline or brackish habitats.

ADVANTAGES OF RTE

- It can enable habitat creation on a wider range of of sites
- It allows precise control of the flood regime through design and operation of structures, with environmental, social, and economic benefits
- It can provide a cost-effective option for intertidal habitat creation in areas unsuitable for managed realignment (or be an early stage of a phased realignment project)

SITE REQUIREMENTS FOR RTE

- A permanent sea defence in place, that will allow the construction of a sluice or tide-gate
- Can be flooded without affecting adjacent property
- Source of seawater that can be engineered to flood and drain the site
- Land behind the sea defences is at least 0.1m lower than sea level at the highest part of the tidal cycle
- Impermeable underlying geology, eg silt or clay
- Gradient of 1 to 6%



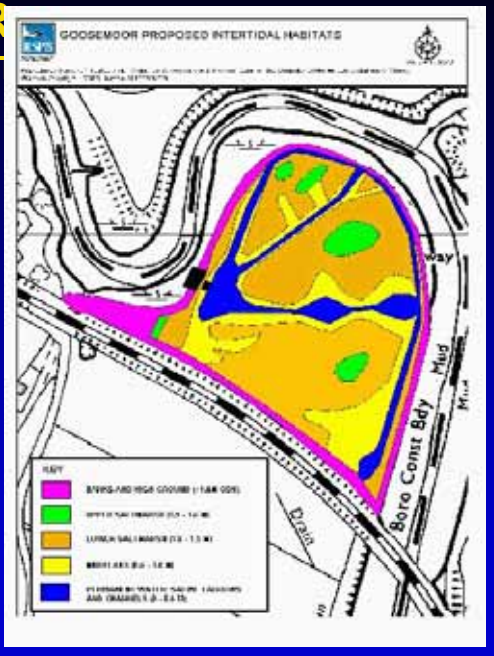
GOOSEMOOR

- Owned and managed by RSPB
- Approx 6 ha
- Bounded on three sides by river wall, and on fourth side by railway embankment
- Difficult to manage optimally as wet grassland

OBJECTIVES OF THE GOOSEMOOR PROJECT

- To build an understanding of the potential uses of RTE feasible
- To demonstrate the flood defence/management benefits of RTE as a cost-effective source of compensatory habitat
- To improve the biodiversity of a potentially important area
- To develop the project in partnership with the EA, EN and Defra, and other coastal decision makers

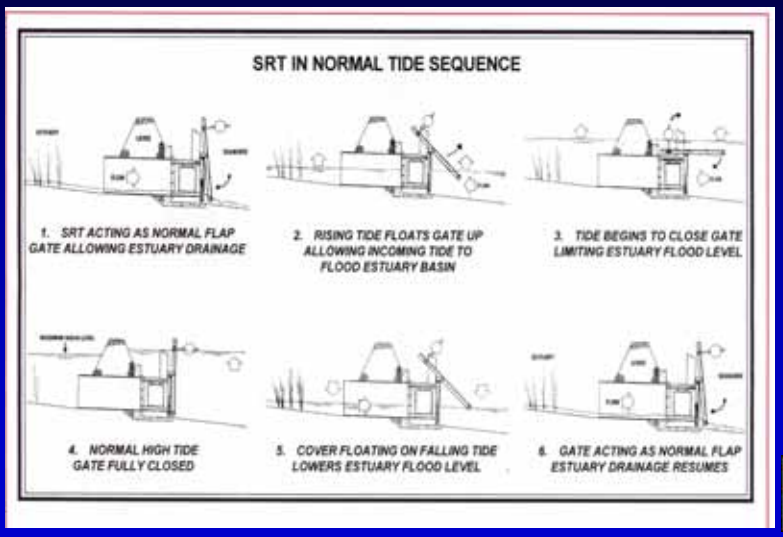
GOOSEMOOR
POTENTIAL HABITAT



THE WORK!!

- Excavation of existing drains and ditches to create new creek system
- Reprofiling of ground levels to create intertidal habitat areas
- Creation of secondary bank along the foot of of railway embankment
- Installation of 1.0m diameter pipe through the sea wall, with SRT on seaward side, and sluice on 'inland' side
- Excavation of channel to link the River Clyst with SRT and pipe

HOW DOES THE SRT WORK??



OUTCOMES

- **Saline lagoons** **0.75ha at between 0.0 and 0.6m AOD**
- **Mudflats** **0.75ha at between 0.6 and 1.0m AOD**
- **Lower saltmarsh** **1.0ha at between 1.0 nad 1.5m AOD**
- **Upper saltmarsh** **3.25ha at between 1.5 and 1.6m AOD**
- **Banks and higher ground** **c0.5ha at over 1.6m**

OUTCOMES continued…

- Favourable condition on this part of the Exe Estuary
- SPA Contribution to UK BAP targets for saline lagoon, mudflat and saltmarsh
- Breeding habitat for up to 5 prs of redshank, 3 prs shelduck, 10prs of avocet (??)
- Wintering habitat (feeding and roosting) for dark-bellied Brent geese, wigeon, teal, shelduck, black-tailed godwits and other waders

COSTS!!

The costs of the project have been quite high!

Self-regulating tidegate (including transport form US) £22K

Groundworks (including reprofiling, headwalls, pipe sluice, etc) £50K

The costs have been met in partnership with EA, EN and Defra

Priority objective is demonstration, aswell as conservation

It is anticipated that, in future, SRTs will be manufactured in the UK, and will not have to be imported!

MONITORING

- Water levels
- Salinity
- Changes in vegetation
- Changes in invertebrates
- Accretion
- Erosion
- Bird usage

FUTURE VISITING

- Visits by specialists to see demonstration site
- Visiting by the public viewing facilities, interpretation, etc
- Possibly educational visits – students, school groups