

MUDFLATS

What are MUDFLATS?

Mudflats are intertidal areas made up of fine silts and clays. They are located in sheltered coastal areas such as estuaries.

Life on and within mudflats is harsh, but for those organisms which can withstand the changing environmental condition, especially salinity, there is plenty of food and a relative lack of competition. Many creatures exploit the soft mud. Some are permanently buried, such as the sand gaper, whilst others emerge to hunt between the tides, such as ragworms. Few plants can survive on mudflats, but eel grass and marine algae are able to colonise the mud and play an important role in trapping sediment and providing food. Flat fish use estuaries and mudflats as feeding and spawning areas. Life is abundant on mudflats; however the diversity of species is low.

Where are they found in the UK?

Mudflats are widespread in UK estuaries. Some of the best examples include the Wash, the Solway Firth and Strangford Lough. There are about 270,000ha of mudflats in the UK.

Why are mudflats of CONSERVATION IMPORTANCE?

Mudflats are amongst the most productive ecosystems on earth. Species that live on mudflats include cockles, mussels, snails, worms, crabs, shrimps and sandhoppers. These animals in turn provide food for a large number of birds including brent geese, shelduck, pintail, oystercatchers, ringed plover, knot, dunlin and sanderling. A variety of fish also feed on the animals found in mudflats (including plaice, sole, flounder and dab) and the habitat is a vital 'nursery' for a number of these fish. Mudflats in the UK are internationally important as wintering grounds for wildfowl and wading birds.

Currently mudflats are under threat and in decline. At least a quarter of the UK's mudflats have already been lost to land claim and more are under threat because of pollution and climate change. Within the Durham plan area, mudflats are a locally rare habitat.



Other action plans and statements covering issues relevant to mudflats:-

GOLDEN PLOVER**

LAPWING**

CURLEW**

SANDERLING***

SALTMARSH***

COASTAL AND DUNES***

OTTER*

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MUDFLATS IN THE DURHAM AREA

Within the Durham area, there are 57ha of mudflat and sandflat on the Tyne estuary and 23ha on the Wear estuary. The principal area of mudflats along the Tyne are between Dunston and Stella and on the lower estuary, at Jarrow, Northumberland Dock and at the River Don Estuary in South Tyneside.

What is the state of mudflats in the DURHAM AREA?

The mudflats on the Tyne are particularly important for birds. The mudflats at Blaydon and Stella hold variable numbers of winter waders, especially lapwing with smaller numbers of curlew and redshank. The mudflats at Dunston, together with those on the northern side of the river form the most important area on the estuary for wintering birds. Together with those at Blaydon and Stella they form a mosaic of habitats, enabling birds to move between them. During the winter of 1997, 2,000 lapwing were recorded, along with 160 redshank, over 600 teal, 70 curlew and 3,000 golden plover. In most winters up to 100 dunlin are present. Small numbers of mallard, ringed plover, shelduck and oystercatcher feed here. The birds have roosted on the old Dunston Power Station site -this site is now vegetated and is not open enough for birds to roost. The mudflats south of Dunston staithes form an enclosed area which holds significant numbers of birds in winter, especially redshank, curlew and teal. This area is one of the main roost sites for redshank, teal and grey heron. In the lower estuary, the river Don outlet and the remains of Jarrow Slake hold up to 400 redshank with smaller numbers of curlew, cormorant and teal present. There may also be up to 400 lapwing and 500 teal in this area. All the mudflats in Gateshead are designated as SNCIs.

In South Tyneside, Jarrow Slake, was formerly a wetland site of regional importance. It is now reduced to a small area of mudflat as a result of the extensive landfilling in the 1960/70s and the subsequent development in 1993 of the Nissan car terminal. The site was important as a feeding and roosting site for birds. Now the remaining intertidal mud is separated by four man-made piers. At the adjacent River Don Estuary SNCI, the tidal section

of the river Don has been artificially expanded and now occupies approximately 2.4ha. New habitats, including mudflats and saltmarsh have been created.

In Sunderland, there are small areas of intertidal mud at Claxheugh Riverside and Timber Beach. Both these sites are designated as Sites of Nature Conservation Interest. At Claxheugh, there is a small area of intertidal mud and saltmarsh (2.4ha). The areas of intertidal mud provide feeding grounds for curlew, redshank, oystercatcher, ringed plover, lapwing, common sandpiper and turnstone. Shelduck and mallard also feed on the mudflats. At Timber Beach, there is a larger area of intertidal mud and saltmarsh (15.1ha). Small numbers of redshank, dunlin and other waders on passage feed here.

There are no mudflats in County Durham.

Mudflats are at RISK from:

LAND CLAIM - many of the areas where mudflats are located have been developed for industrial and economic reasons, leading to the loss of a quarter of Britain's mudflats. The River Tees has lost 80% of its mudflats. Loss of mudflats reduces estuary productivity and may influence other estuarine habitats, such as saltmarsh.

LOSS OF LAND ADJACENT TO MUDFLATS - if land adjacent to mudflats that is being used as a roost site is developed, this can have serious consequences for the mudflats themselves. The loss of all roost sites will lead to a mudflat becoming no longer viable. Estuary Management Plans need to take account of this.

CLIMATE CHANGE - climate change poses one of the greatest threats to mudflats. It is generally accepted that global warming will lead to a rise in sea level which will affect low-lying estuaries. As sea-levels rise, mudflats are squeezed out. At least 8,000ha of mudflats in England are expected to be lost as a result of sea-level rise during the next 10 years. Climate change is also predicted to bring an increased frequency of storms which will affect sedimentation patterns of estuaries and mudflats.

FISHERIES - the most damaging fishing activity used in mudflats is suction dredging, which is used to obtain various shellfish, including cockles. This activity kills a

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large number of non-target species and destabilises the mudflats themselves, although it is not a threat to local mudflats.

POLLUTION - mud in estuaries may be polluted by a range of substances including persistent organic compounds, heavy metals, sewage, agricultural runoff and industrial waste. Industrial waste contains heavy metals which attach themselves to suspended sediments and settle out. They enter the food chain when they are eaten by filter feeding animals and will eventually be consumed by predators.

DREDGING - the practice of dredging affects the natural movement of sediments in the estuary. There is currently little dredging on the river Wear, except at the harbour mouth. There is very little dredging on the river Tyne. At present, dredging does not constitute a major threat to local mudflats.

RECREATION AND MARINA CONSTRUCTION - the construction of marinas may lead to the direct loss of mudflat habitat and their subsequent pattern of use, if not effectively regulated increases disturbance and erosion.

Mudflats BENEFIT from:

APPROPRIATE SITE SAFEGUARDS - because of their local rarity, all areas of mudflat within the DBAP area in the Plan area should be designated as protected areas.

PLANNING PROTECTION - local planning documents should include a presumption against development which will adversely affect mudflats e.g. construction works, and highlight the necessity of having land available, within the context of the estuary, for roosting birds which use the mudflats.

CLEANER WATER - high levels of river pollution restrict the diversity of invertebrates in mudflats.

FURTHER RESEARCH - the effects of disturbance and damage to mudflat communities is not well understood.

MEASURES TO REDUCE THE IMPACT OF GLOBAL WARMING.

Important SPECIES for mudflats:

OYSTERCATCHER	PLAICE
DUNLIN	SOLE
REDSHANK	FLOUNDER
SHELDUCK	DAB
TEAL	CRABS
LAPWING	COCKLES
	MUSSELS

TARGETS

- 1 Maintain the current area and quality of mudflats in the DBAP area. (ONGOING)*
- 2 Increase the area of mudflats by 20ha, as part of regional recreation target. (2010)*
- 3 Restore estuarine water quality to ensure that mudflats are able to fulfil their ecological and conservation role. (ONGOING)*
- 4 Monitor the wildlife on the mudflats - birds, plants, invertebrates etc. (ONGOING)*
- 5 Increase public awareness of the value of mudflats for local wildlife. (ONGOING)*
- 6 Include contingencies for managing mudflats in local strategic plans such as the ICZM Plan. (2002)*

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ACTION PLAN

ACTION	DATE	Possible PARTNERS	Meets TARGET No.
POLICY AND LEGISLATION			
1. Shoreline and estuary management plans, local plans, development plans and LEAPS should have clear policies that ensure there is no net loss of mudflats or their availability to wildlife as a result of development.	ONGOING	DEFRA, EA, Local Authorities	1, 3, 6
2. An Estuary Management Plan, with clear policies for intertidal mudflats should be written and implemented for the River Tyne mudflats.	2002	GC, STMBC, EN, EA, RSPB, C of N, NoTy	1, 2, 3, 6
3. The Estuary Management plan for the River Wear should be implemented with clear policies for habitat management.	2001	SCC, EN, EA	1, 2, 3, 4, 6
SITE SAFEGUARD AND MANAGEMENT			
4. Apply appropriate conservation designations to all intertidal mudflats and ensure appropriate management.	2001	GC, STMBC, EN	1
5. Investigate the case for the designation of Dunston mudflats as a SSSI. Consider designating the remaining mudflat areas along the Tyne as SNCIs including Newburn Haugh and small areas on both sides of Northumberland Docks.	2002	EN, LAs, RSPB	1
6. Create secure high tide roosts for birds using the mudflats of the both the Tyne and Wear.	2002	GC, SCC, STMBC, RSPB, EN	1, 4
7. Ensure that practical coastal defence or construction works avoid disruption of coastal processes which might lead to a loss or damage to mudflats.	ONGOING	EA, GC, SCC, STMBC, DEFRA	1, 6
8. Maintain and improve estuarine and coastal water quality.	ONGOING	EA, NWL, DEFRA	1, 3

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ACTION PLAN			
ACTION	DATE	Possible PARTNERS	Meets TARGET No.
SITE SAFEGUARD AND MANAGEMENT continued			
9. Support measures to reduce the impact of global warming.	ONGOING	ALL PARTNERS	1
10. Encourage public participation in measures to slow down the rate of climate change e.g. wise use of fossil fuels.	ONGOING	LA21, GC, STMBC, SCC	1
RESEARCH AND MONITORING			
11. Support continued research into the value of mudflats for flood and coastal defence and the holistic management of these habitat in conjunction with flood risk management.	ONGOING	EA, EN, DEFRA	1
12. Monitor the water quality and pollution levels on the Tyne and Wear.	ONGOING	EA, NWL	3
13. Consider ways of increasing the area of mudflat in the DBAP area e.g. site protection and non-intervention.	2001	EN, STMBC, GC, SCC, EA, DBAP	2
14. Carry out further research into the effects of disturbance of adjacent development on mudflat communities.	2001	EN, EA, RSPB	1
15. Establish areas where the area of mudflat could be increased.	2001	EN, EA, GC, SCC, STMBC	2, 6
16. Establish monitoring systems for the wildlife of the mudflats in the DBAP area.	ONGOING	EN, GC, SCC, STMBC	4
ADVISORY			
17. Provide advice to local authorities who manage shorelines on how to plan for the maintenance of mudflats.	ONGOING	EA, DEFRA, DBAP, EN, DBAP, DWT	1, 2, 3

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ACTION	DATE	Possible PARTNERS	Meets TARGET No.
COMMUNICATION AND PUBLICITY			
18. Raise public awareness of the value of mudflats for wildlife.	2001	EN, DWT, DBAP, GC, SCC, STMBC	1, 5
19. Prepare publicity information as part of integrated coastal/marine interpretation package.	2002	CA, LAs, DBAP	5, 6
20. Ensure planning authorities and developers are aware of the importance of mudflats in estuarine and coastal dynamics.	2001	EN, DWT, EA	1, 5, 6