

Multiple benefits from catchment restoration

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Biodiversity 2020 – the challenge

Outcome 1A- at least 90% of priority habitats in recovering condition and 50% of SSSIs in favourable condition

- Outcome 1B increase of at least 200,000 ha of priority habitat
- Outcome 1C –.at least 17% of land and inland water managed for biodiversity and ecosystem services

Outcome 1D – at least 15% of degraded ecosystems restored as contribution to climate change mitigation



Multiple Benefits Through upland restoration



Operation Peatland, Forest of Bowland









KILLER FACT from Making Space for Water project – Peak District NP: restoration of bare and gullied peat reduced peak flows by 30% and increased lag times by 20 mins.

Multiple Benefits Through pond creation





Belford Burn, Northumberland







KILLER FACT from Belford Burn: a "leaky" pond holding 800 m3 of water takes roughly 8-12 hrs to drain completely and delays the peak flow 1 km downstream by app. 15 mins

Multiple Benefits Through woodland planting





Woodland shelterbelt at Pont Bren

Woodland planting on the Belford Burn



KILLER FACT from Pont Bren project: infiltration rates are up to 60x higher under young native woodland shelterbelts compared to adjacent heavily grazed pasture

Multiple Benefits Through woody debris



Woody debris installed in Belford Burn



Woody debris combined with floodplain attenuation at NT Holnicote. Somerset



Leaving woody debris in situ at Holnicote





KILLER FACT from the Belford Burn project – Northumberland: Installation of 6 large woody debris structures in the headstream more than doubled the travel time for the peak of the flood 1 km downstream

Multiple Benefits Through WFD – on watercourses

Weir removal at Prestolee on R. Irwell







Radcot Weir bypass channel, R. Thames

Multiple Benefits

Through rural wetland creation





Lunt Meadows, North Merseyside

Environment

KILLER FACT from study of ponds in Northumberland: Organic carbon is 10% in uncompacted sediments in permanent ponds compared with 3% in adjacent agricultural land

Multiple Benefits S Through urban river restoration





Restoration of the R. Medlock at Clayton Vale LNR, Manchester







KILLER FACT: Visitors to Ladywell Fields urban greenspace in South London increased by >250% after restoration of the River Ravensbourne through the park

Multiple Benefits Through urban flood risk management



River Quaggy at Sutcliffe Park, South London, before and after flood alleviation work



KILLER FACT from the Mddx Univ Socio-economic study of the R. Quaggy: The average amount of time spent per person in Sutcliffe Park increased by 44% after "daylighting" of the river.

Multiple Benefits

Through flood storage area enhancement



Flood storage area of very limited biodiversity value



R. Beam Parklands, Dagenham



KILLER FACT: There are app. 400 flood storage areas over 5 ha in size in England, most of which are of very limited biodiversity value

Multiple benefits Through SUDS



Green roof, London



Surface water collection pond, Dunfermline



SUDS for Schools project, Queen Elizabeth Girls' School, Pymmes Brook catchment, North London



KILLER FACT from Environment Agency Introduction to SUDS: On average, urbanisation without SUDS trebles the rate of run-off during storm events

SUDS for Schools examples







Susi Earnshaw Theatre School, Pymmes Brook catchment, North London







Queen Elizabeth Girls' School, Pymmes Brook catchment, North London



Multiple Benefits

Through coastal realignment





Alkborough Flats managed realignment project, Humber Estuary

Steart managed realignment project, Severn Estuary



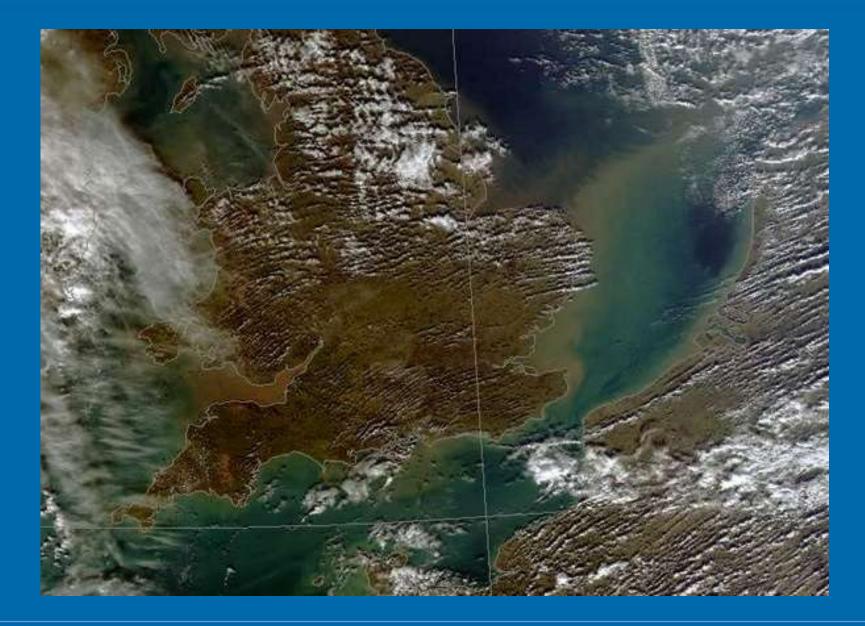
Agency KILLER FACT from EA Ecosystem Services Case Studies report: 400 ha Alkborough Flats managed realignment scheme cost app. £10M and provided £12M of storm protection to land and property. Other ecosystems services benefits = app. £1M p.a.

Multiple Benefits Through soil management





KILLER FACT from Defra Soil Strategy for England 2009: The water treatment cost of soil erosion is app. £21 million p.a. in England. Agriculture is responsible for 75% of the sediment in rivers and 25% of the phosphorus





Washing topsoil down the drain – Jan 2014

Thankyou for your attention





Bruce Pearson's Vision for the Great Fen