



Kent Catchment Flood Risk Management Scheme

Natural Flood Management (NFM) key facts

The Environment Agency is delivering a proposed three phase Flood Risk Management Scheme to better protect residential and business properties from flooding in the Kent catchment and improve the local environment and community amenities. Kendal is the first phase being delivered with further phases proposed for Burneside, Staveley, Ings and upstream storage. Complimentary to this, NFM interventions are being delivered to slow the flow. Here is a snapshot of some of those benefits being delivered as part of the scheme;



NFM projects within the catchment

Stock Beck, Kendal

This project is delivering:-

- storage ponds to hold water
- diversion pathways to divert water
- long leaky dams to slow the flow
- tree planting to stabilise land and soak up water.

This is the start of a number of other opportunities to deliver more in the catchment.



Town View, Kendal

This project has delivered:-

- earth bunds to hold water
- leaky dams to slow the flow
- tree planting to stabilise land and soak up water.

This project is designed to address the surface water flood risk in the area.



Staveley

This project has delivered:-

- re-connection of floodplains
- flow routing to divert excess water
- run-off attenuation to allow water to be stored.

This project is designed to reduce flooding from both river and surface water.



Peatland restoration

Restoring 50 hectares of peatland in the Upper Kent catchment providing a number of benefits including:-

- 164 tonnes of carbon storage each year
- additional water storage capacity
- improved habitat for specialist species
- helping the catchment become more resilient to climate change.



Natural Flood Management (NFM) in the Kent Catchment

We aim to deliver a Flood Risk Management Scheme to a 1 in 100yr standard of protection to homes and businesses in the Kent catchment. In order for us to deliver this we have identified our preferred option following full public consultation that provides a combination of linear defences, improved pumping and 3million m³ of flood storage. This is the most economically viable, technically feasible, environmentally sustainable and socially acceptable option. NFM does form part of our proposals and is complimentary to traditional engineered measures. The diagram below demonstrates why our proposed scheme is our preferred option and some of the limitations of delivering only NFM as a stand alone solution.

Number and type of interventions required to achieve the 3 million m3 storage required or the 6 million m3 storage required in place of storage and linear defences.

Cost Emillions		£13.3 - £14.6m		£180 - £225m		
Investment required to achieve 1 in 100yr standard of protection or the equivalent of a 1% chance of flooding in any given year						
Flood storage capacity (million m ³)	6	Kendal 6km linear defences Stock Beck 2km catchment drain.				
	5	Stock Beck Pumping Station.				
	4	Burneside, Staveley & lngs 1km of linear defences.		Minimum 24,000 small dams required with each having the capacity to store maximum 250m ³ flood water.		48 million broadleaves planted 300km ² (30,000 hectares) land required.
	3	Kentmere Tarn storage volume = 1.2million m ³ , covering 0.5 km2 or 50 hectares of land Controls 10% of the catchment.		Build costs approx £12m plus replacement costs every 10 - 20 yrs = £90m.	24 million Broadleaves planted 150km ² (15,000 hectares) land required.	OR 54 million conifers planted 240 km ² (24,000 hectares) land required.
	2	Kentrigg storage volume =	Minimum of 12,000 small dams required with each having the capacity to store maximum 250m ³ flood water.		OR	
	1	Kentmere Reservoir controls only 5% of catchment and would require significant rebuild costs.	Build costs approx £6m plus replacement costs every 10 - 20 yrs = £45m.		27 million Conifers planted 120km ² (12,000 hectares) land required.	River Kent catchment upstream of Kendal = 184km2
	0.125	1 million trees planted after 10 yrs.			River Kent catchment upstream of Kendal = 184km2	
		Kentmere Reservoir & tree planting	Kent three phase Flood Risk Management Scheme	Small dams instead of upstream storage	small dams instead of upstream storage and linear defences	Tree planting instead of upstream storage