Freshwater quality monitoring

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The challenges we face

- Targeting our resources at where they are most needed
- Understanding the impact of current and new pressures and how best to manage their impacts
- Demonstrating the benefits and value of the improvements we make

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GRTS monitoring network design

What to monitor/measure

- WFD compliant assessment methods
- Water quality and biology (except fish)
- morphology

Population of rivers and streams

- This is defined by a shapefile
- We will use the 1:250k OS map scale + WFD riverline outside this
- This avoids the inclusion of masses of tiny streams for which we don't have assessment methods

Sub populations

- The scales by which we can describe status or trends
- Geographic (e.g. RBD or Area), typological (e.g. stream order, land use)

Environmental assessment – are our rivers getting better or worse?

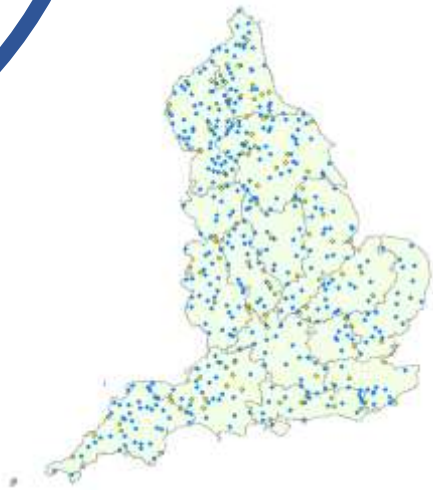
Network design

- Run GRTS with equal probabilies
- The sites selected mirror the length of river in each stream order

Panel design

- Describes the pattern of site visits
- Each panel is a representative "sample" of the population of rivers and streams
- Maximises the power of the network to detect spatial and temporal information

	Year							
	1	2	3	4	5	6	7	8
Fixed panel_a	100	100	100	100	100	100	100	100
Rotating panel 1	100	100				100	100	
Rotating panel 2		100	100				100	100
Rotating panel 3			100	100				100
Rotating panel 4				100	100			
Rotating panel 5	100				100	100		
Rotating panel 6	200					200		
Rotating panel 7		200					200	
Rotating panel 8			200					200
Rotating panel 9				200				
Rotating panel 10					200			
Sites per year	500	500	500	500	500	500	500	500
Unique sites	500	800	1100	1400	1600	1600	1600	1600



Network size

- 500 sites per year will be sampled for all elements which with co-located monitoring

Sentinel Evidence for Decision Making (EDM)

What is it? An evidence system to provide information on why we are seeing changes in the condition or health of the environment

Causes of change in state or trend

Detect emerging threats/future risks

Policy intervention is working

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