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## Managing Urban Diffuse Pollution

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**Head of Environmental Science and Regulation**



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# Starting With Rural Diffuse Pollution...



**Well established**

**Clear roles and remit**

**National initiatives:**



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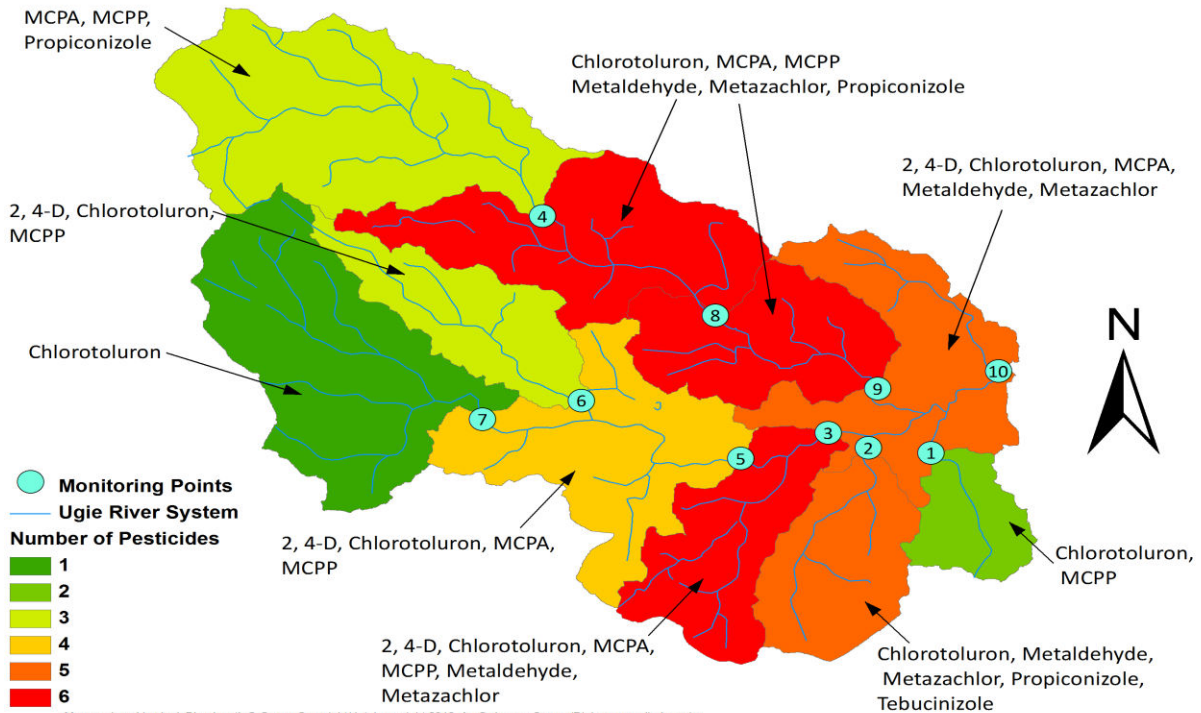
# Scottish Water Experience



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# Evidence From Catchment Work



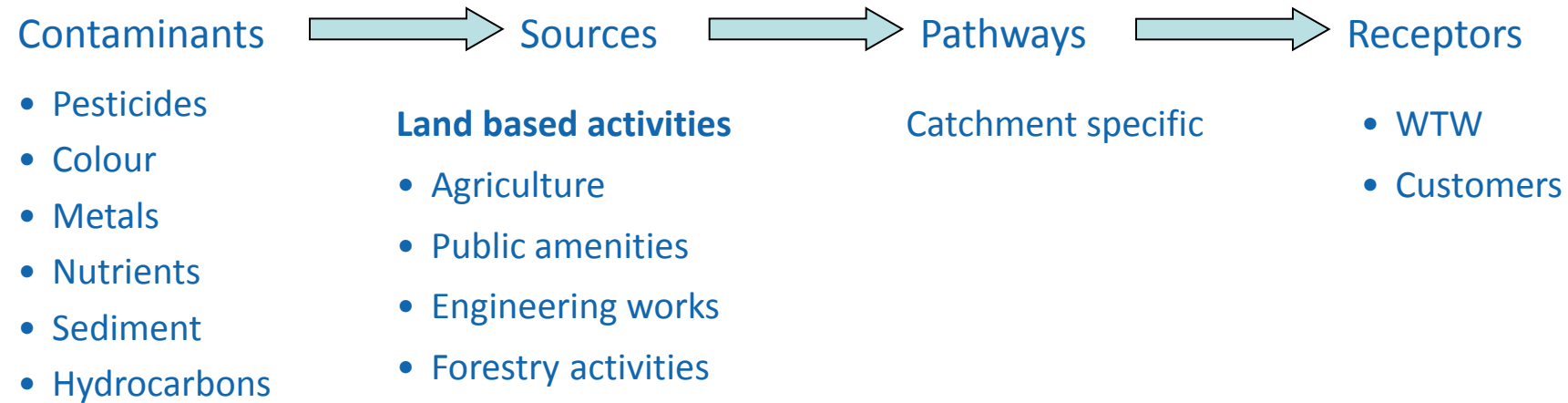
Map produced by Jack Bloodworth © Crown Copyright/database right 2012. An Ordnance Survey/Digimap supplied service



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# Source-Receptor Pathways



**Primary Benefits** – Drinking water quality and value for money

## Secondary Benefits

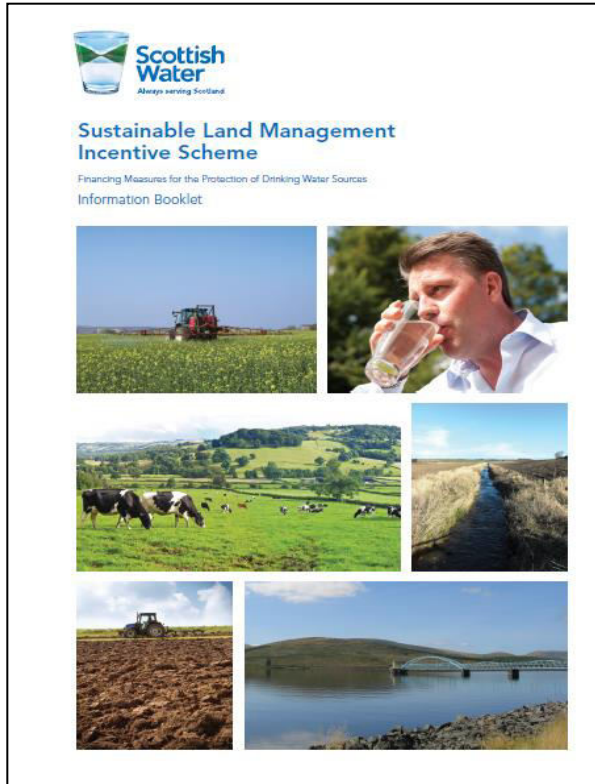
- Environmental (quality, energy, carbon)
- Land users e.g. save land chemical inputs
- Catchment resilience



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# Water Environment Management Plan



## Incentivise Behaviours

Win – Win for land manager and for SW

Sustainable Outcomes – Quality, Cost, Carbon



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# So can we apply to urban sites?



**Surface Water Drainage from Urban Landscapes**

**Low amenity / under valued water bodies**

**Legacy – situation developed over decades**



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# Surface Water Systems



Separate foul and surface water systems

Residential and commercial / industrial sites

Generally a good thing hydraulically



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# Surface Water Treatment Systems



**Required for all new developments**

**Provide a treatment and storage facility**

**Require land!**



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# Surface Water Systems - challenges



**Road runoff/oil/silt; cross connections/ragging;**

**general litter on sites**



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# Challenge in 2010-15 investment plan



**Improve 6 surface water outfalls to meet Water Framework Directive**

**Little or no land for treatment**

**High cost: >£20m relative to benefit**



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# Another Way – Surface Water Action Planning



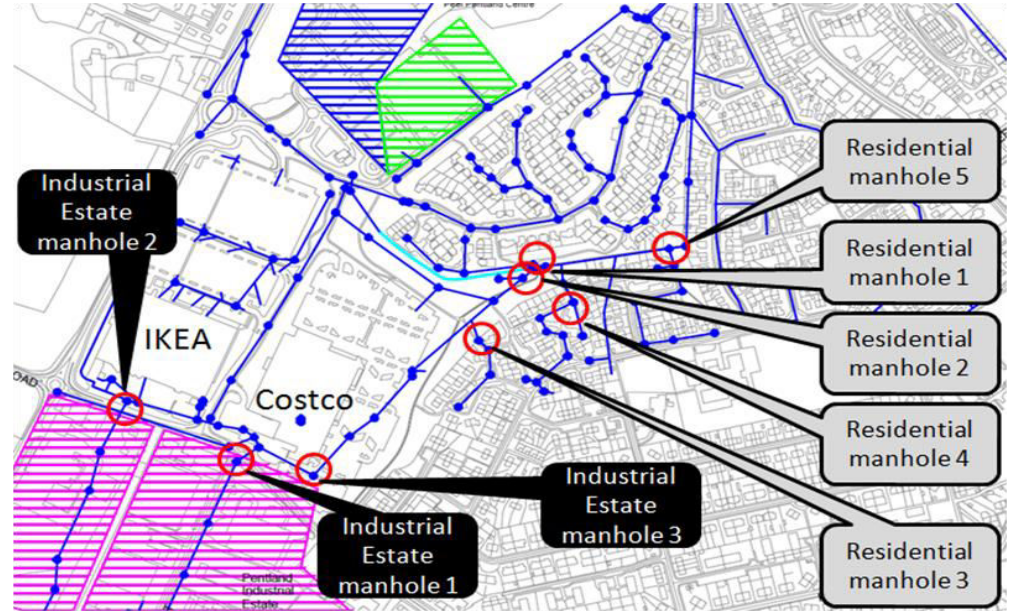
Source control for urban catchments?



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# Catchment Investigations



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# Catchment Investigations



**Sampling**

**Catchment surveys**

**Cross Connections / dye tracing / CCTV**

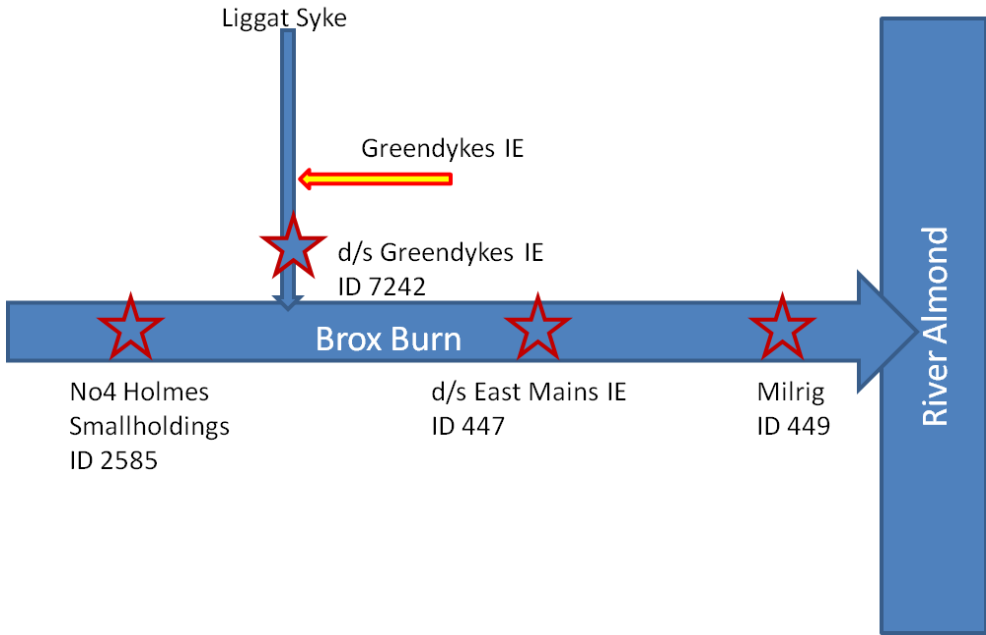
**Critical to try and understand 'first flush'**



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# Catchment Investigations



Multiple monitoring points

Quality and ecology

Concern:

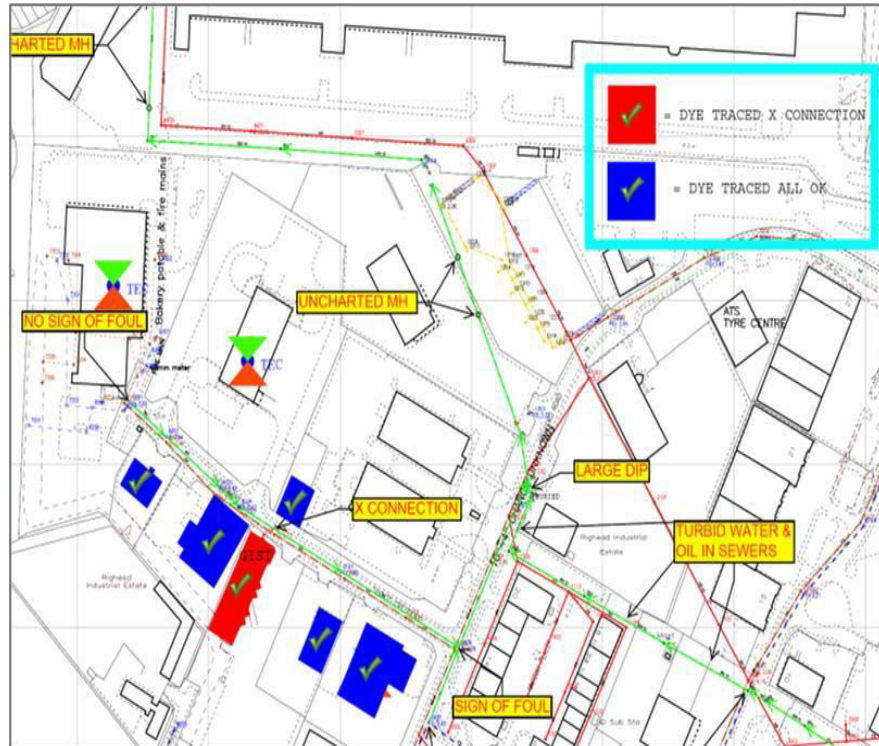
- Metals
- Detergents
- Hydrocarbons



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# Cross Connections



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# Pollution Events



**Intermittent Events**

**Cross Connections**



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# Roads and Vehicle Washing



**Blocked gulleys – silt traps full**

**Hydrocarbons**

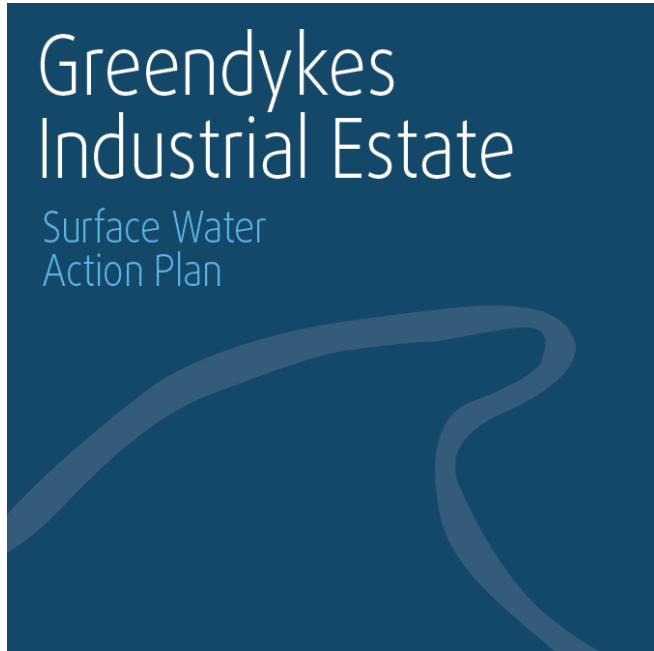
**Detergents and chemicals**



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# A plan to tackle at source



**Surface Water Action Plans (SWAP)**  
developed for each site

**Catchment Investigation Details**

**SWAP outlines key risks and actions**



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# A plan to tackle at source

Level of risk (H/M/L)	Risks identified from site visit (source)	Potential for contamination (route)
H	<b>Storage/Service yards</b> High likelihood of contamination from open storage areas if not properly managed	If the site is not bunded there is a risk that surface waters will be contaminated by direct entry of pollutants to the drainage system.
H	<b>Contaminated land</b> History of engine oil contamination from the old engineering works and contaminated surface water is present.	Oil contamination from the site is potentially seeping through ground into surface waters.
M	<b>Roads and carparks</b> Typical traffic load. High likelihood of ac hoc car washing.	There is a risk of direct entry of pollutants to surface waters through the drainage system

Supported by catchment officer for 2 years

Engage operators and planners

Work with SEPA

Continue site monitoring



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# Key Action Areas

## Scottish Water

- Cross Connections, general management of outfall

## Local Authority

- Gully cleaning, roads maintenance
- Planning – redevelopment = opportunity!

## Operators

- Bunds
- Service connections
- Good housekeeping
- Vehicle washing

## SEPA

- Inspection and potential regulatory controls
- Monitoring
- Representation in River Basin Plans



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# Challenges



**Seen as low value habitats, therefore low priority**

**Enforcement powers and responsibilities?**

**Co-ordinated planning and environmental regulation?**

**A growing challenge for WFD and Priority Substances**



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**Thank You**



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