

**Protecting Water Catchments from Diffuse Pollution
- the Emerging Evidence
21 February 2012**

Mitigation of Risks to Drinking Water Quality

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guardians of drinking water quality
DRINKING WATER INSPECTORATE

Outline

- Scene setting – historic examples
- DWI involvement in catchment initiatives
- AMP4 Programmes of work
- Current Programmes of work
- DWI position and use of legal instruments
- Next price review
- Summary



Historic Examples

Water companies (and predecessor organisations) have always considered catchment measures to reduce risks to drinking water quality.

For example:

In 1990, the Badenoch Report on “*Cryptosporidium* in Water Supplies” recommended catchment measures to reduce the risk of *Cryptosporidium* occurring in drinking water supplies



Historic Examples

The first report of the Group of Experts chaired by Sir John Badenoch recommended:

- MAFF (Defra) and the National Rivers Authority (EA) should review advice on storage and disposal of animal manure
- The NRA (EA), water companies & those responsible for private supplies should... seek ways to reduce contamination of water sources, particularly close to abstraction points
- In the longer term MAFF (Defra) should promote the development of safer methods for the use of manure fertiliser



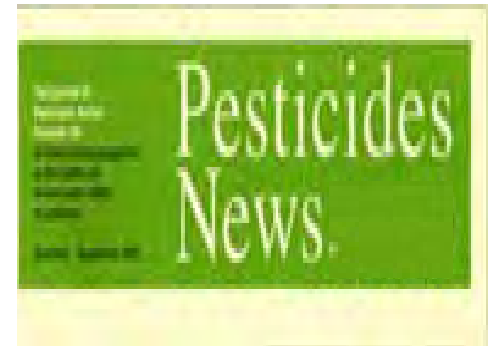
Poultry manure storage facility

Historic Examples

Another example:

In the early 1990s, due to contamination of groundwater with the herbicide atrazine, a number of water companies worked closely with British Rail (later RailTrack) and local authorities to reduce the use of the herbicide on hard surfaces. These campaigns led to a ban on its use for non-agricultural purposes.

A Water Supplier's View - *An integrated strategy for dealing with pesticide pollution of drinking water catchments* by Bob Breach and Mike Porter, Severn Trent Water, ***Pesticides News*** No.22, December 1993



Historic Examples

These historic examples illustrate some points:

- Water companies need to take and continue with operational steps
- Water companies cannot do everything – other regulators and stakeholders have responsibilities – as recognised by the Group of Experts
- Collaborative working between agencies & stakeholders is essential
- If the measures do not deliver compliance with the standard, mitigation by blending and/or water treatment will be required.
- If voluntary measures are ineffective (or too late), legal restrictions may be necessary.



Drinking Water Inspectorate Involvement – AMP4

At PR04, DWI required companies to obtain EA confirmation that nitrate schemes were the most environmentally sustainable solutions

- The DWI began discussions with Wessex Water – need to slow rising nitrate levels
- In AMP4 the DWI supported Wessex Water with programmes of work involving catchment measures at four sites to mitigate nitrate:

Carry out detailed investigation in the catchment, liaising with farmers and other interested parties to assess and promote reductions in nitrate use.

Outcome:

The Company has worked with farmers in the catchments to change farming practices and to encourage, for example, the use of nutrient management plans, use of catch crops and safe storage and application of farm slurry.



Fertiliser calibration

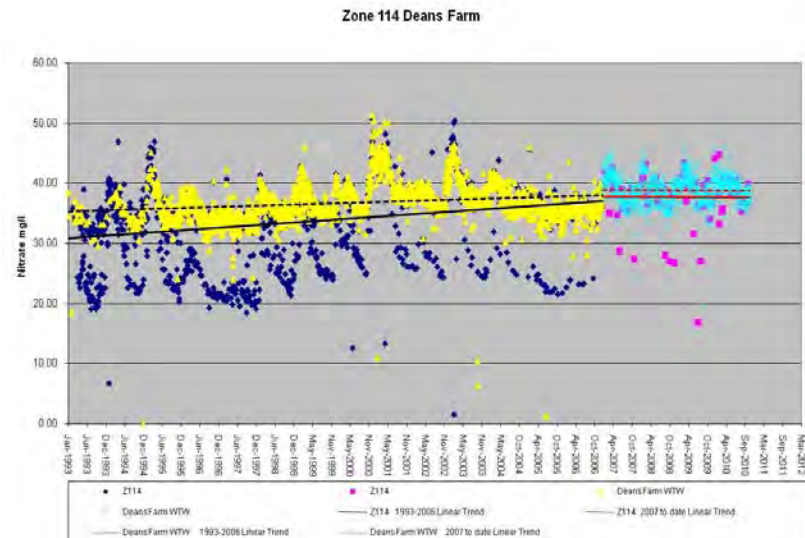
Drinking Water Inspectorate Involvement – AMP4

These programmes of work have been signed off by the Inspectorate because the Company has been able to demonstrate that:

- the nitrate trend in the source waters is slowing or stabilising
- it is committed to continuing this work into AMP5 and beyond.

Outcome (example):

Nitrate levels at the Deans Farm source since the introduction of catchment management in 2007 have been relatively stable in recent years fluctuating by about 5mg/l around an average of approximately 40mg/l.



Drinking Water Inspectorate Involvement – AMP4

The Inspectorate also supported Wessex Water's programme of work to reduce pesticide levels at Friar Waddon treatment works. It involved working with the farming company to encourage safer use of pesticides, and building for the farming company new chemical make up and washdown facilities.

Outcome:

The scheme began as an AMP4 scheme. Building was completed in 2011. The DWI is considering how the benefits of this and other such schemes should be demonstrated.



Current Programmes of Work

A total of **86** time-limited legal instruments in place for schemes including catchment measures, covering 16 water companies. Excluding bulk imports and insets.

50 AMP5 Catchment Management Undertakings (10 companies)

- 33 for Metaldehyde
- 2 for Clopyralid
- 8 for Colour (inc 7 for Colour & THMs)
- 7 for Nitrate (inc 2 for Nitrate & Pesticides)

35 Non-AMP Catchment Management Undertakings (a further 6 companies)

- All 35 for Metaldehyde (which include a max. deviation of quality)

1 AMP5 Catchment Management Notice

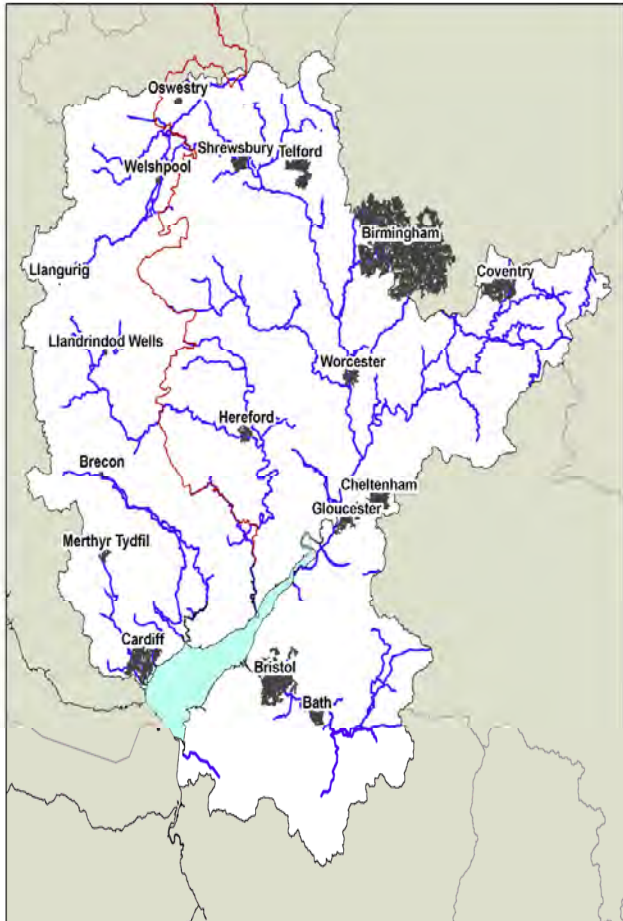
- *E.coli*, Nitrate & Pesticides

1 Non-AMP Catchment Management Notice

- Nitrate

DWI Position

The Inspectorate recognises that:



River Severn Catchment >21,500 km²

- Catchment measures can deliver worthwhile benefits
- The likelihood of success depends very much on the size and characteristics of the catchment
- Catchment measures alone are unlikely to sufficiently mitigate the risk to consumers
- The company must work in partnership with other regulators & stakeholders
- It can be hard to specify when benefits will be delivered and how to demonstrate delivery of benefits.
- Timescales can be long-term
- We need to be flexible and realistic about what can be achieved
- Need to think about **outcomes**
- Activity may need to be continued indefinitely to maintain benefits

Criteria for Drinking Water Quality Schemes covered by Legal Instruments

Schemes formally supported by DWI must meet the following specific criteria:

In all of the LIs, catchment measures are not the only requirements. Other required steps include e.g. Treatment optimisation; investigation of alternative sources

- Based on risk assessment, with a clearly identified actual or potential risk to wholesomeness
- Source of pollution has been identified
- Proposal has a clear aim and objective
- Proposal includes a detailed programme of activities / measures with defined milestone steps & delivery dates
- Proposal includes a mechanism for demonstrating progress and criteria for measuring success
- The balance of benefits favours drinking water quality
- Appears to be a reasonable chance of success
- The solution is sustainable

Delivery of Schemes Covered by Legal Instruments

Delivery of all schemes covered by legal instruments (Undertakings or Notices)

All schemes accompanied with a Schedule of Work setting out:

- Key milestone steps
- Delivery dates
- Reporting requirements

Key milestone steps include:

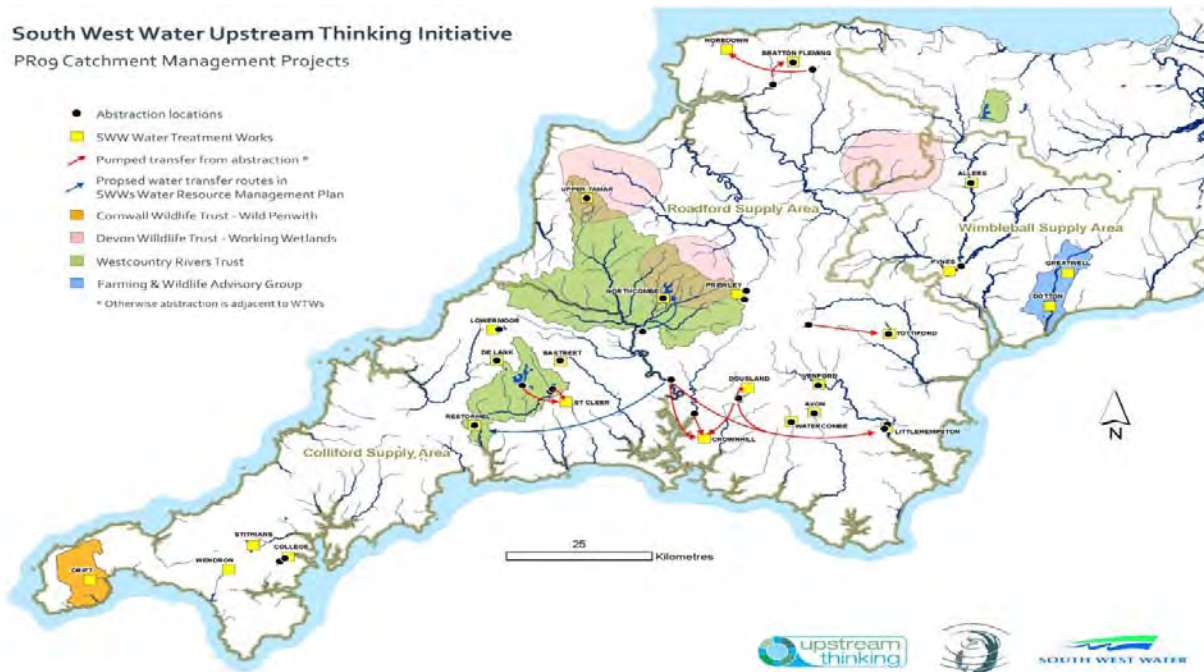
- Develop enhanced monitoring strategies for raw & treated waters
- Investigate extent of raw water quality issues
- Confirm actions / measures to be taken & criteria for reporting progress
- Engage with relevant stakeholders to facilitate delivery of actions / measures
- Deliver agreed actions / measures
- Interim and final reports (2013 and 2015)
- Agreement on demonstration of benefits



Schemes not covered by Legal Instruments

The Inspectorate also issued letters of commendation for a further 13 schemes

- Where benefits non-specific or covered multiple parameters
- Delivery of benefits likely to be long- term
- No short-term (<5 years) direct benefit to consumers



Next Price Review

1. Need to review outcomes of current schemes and company plans for continuation of work to maintain benefits
2. What if the catchment measures fail to deliver required benefit
3. New schemes may be required or existing schemes extending



Summary

- **Historic examples**
- **DWI Involvement**
- **AMP4 programmes of work**
- **Current (AMP5) programmes of work**
- **Issues faced by companies**
- **Use of legal instruments and letters of commendation**
- **Risk-based approach – to reduce risks to consumers**
- **Issues to consider for next price review**



The End

Thank you

With acknowledgement and thanks to all the companies who gave permission for us to mention their schemes and use their material.

Some of the images used in this presentation are courtesy of the Environment Agency and Natural England.

