



Monitoring and mitigating pesticides in water: a collaborative approach

Why, what and how

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Catchment Projects Manager

Outline

- Introduction
- Monitoring
- Mitigating
- Conclusion



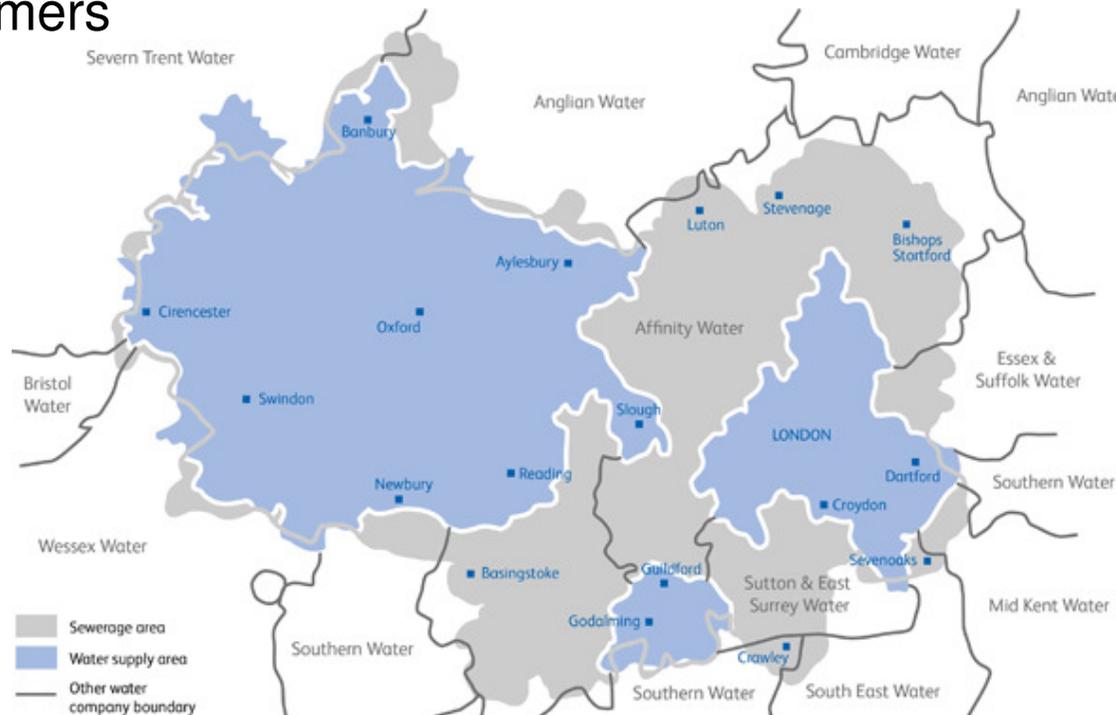
Thames Water

Supply drinking water

- 2.6 billion litres per day
- 9 million drinking water customers

Provide sewerage services

- 4.4 billion litres per day
- 15 million sewerage customers



Thames Water

Drinking Water Quality

- Ensuring tap water is wholesome and compliant



Catchment Control Team

- Understanding risks to water quality
- Where risks come from
- How they can be mitigated

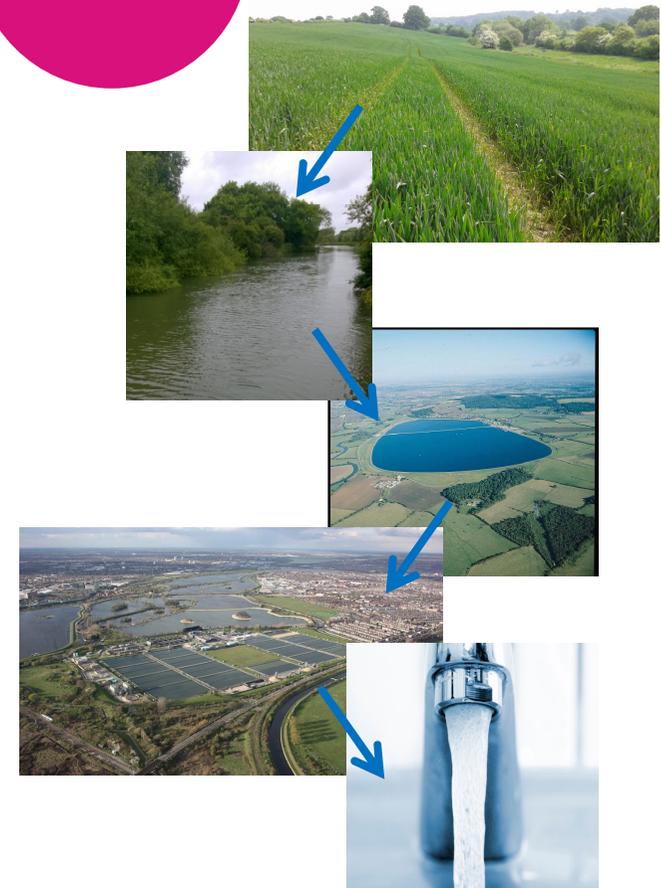
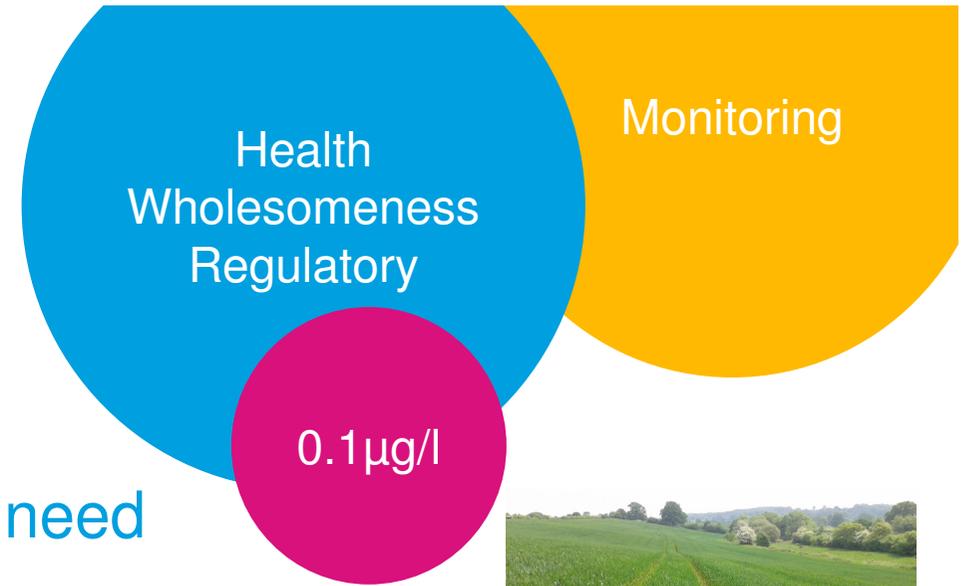
Working with our neighbours

- Overlapping areas of interest and work
- Thames Catchment Management Steering Group (TCMSG)



Why we monitor

- Drinking water standards
 - Every treated water sample
- Understanding the risks we need to mitigate
 - What's typically in raw water that cannot be in treated water
- Drinking Water Safety Plans
 - From source to tap
 - Identifies and assesses risks to drinking water quality
 - Mitigation if required.



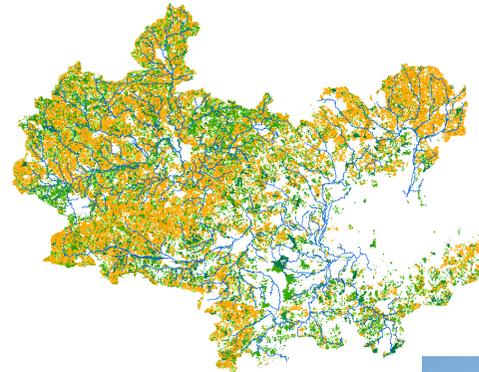
What we monitor

- Pesticide risk assessment



What we monitor

- Pesticide risk assessment
- Monitor for pesticides
 - Used in catchment
 - Likely to reach water sources
 - Likely to reach abstraction points
 - Difficult to remove



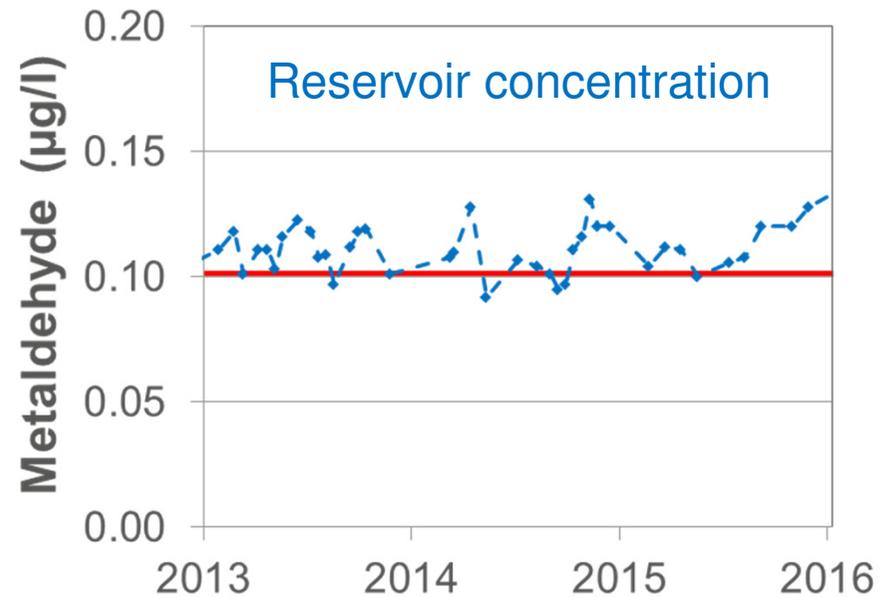
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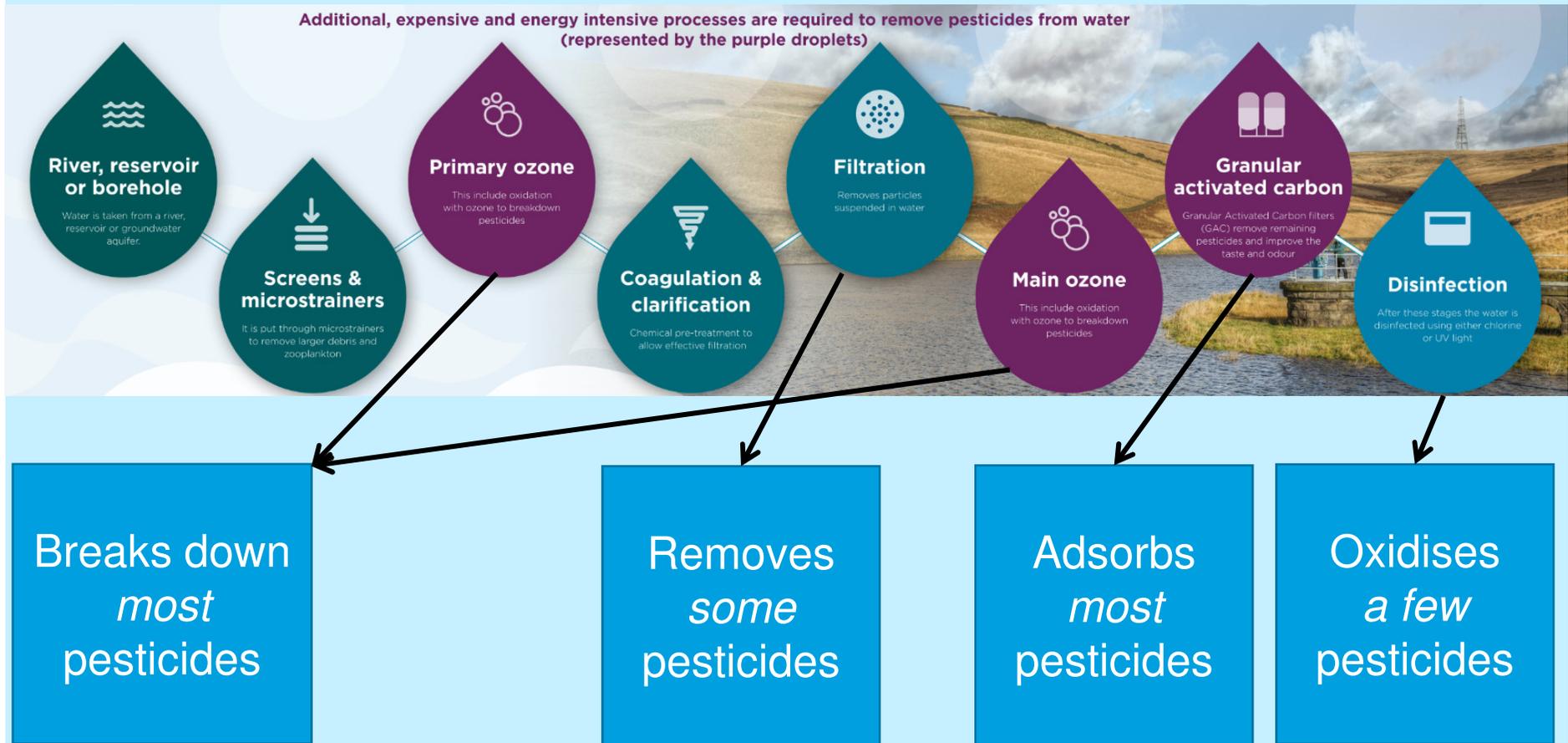
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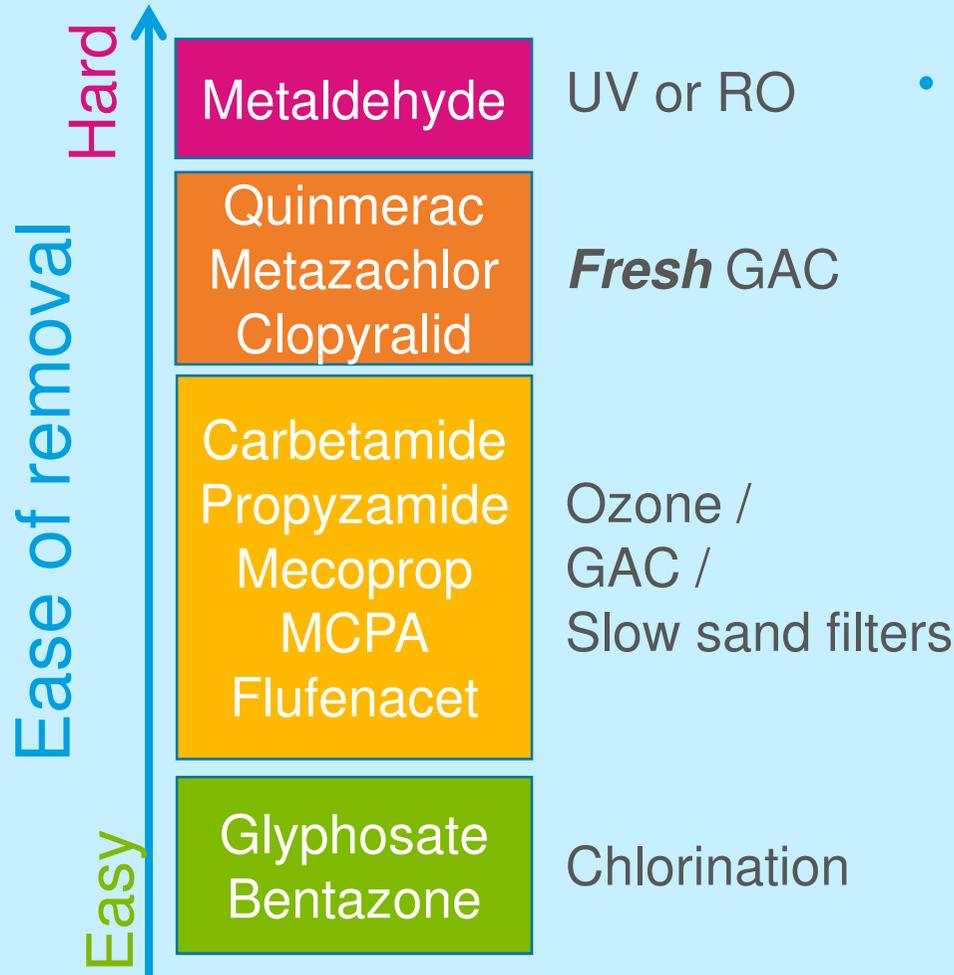
Stages of water treatment and pesticide removal

Example WTW (not at WTW have all/same stages of treatment)

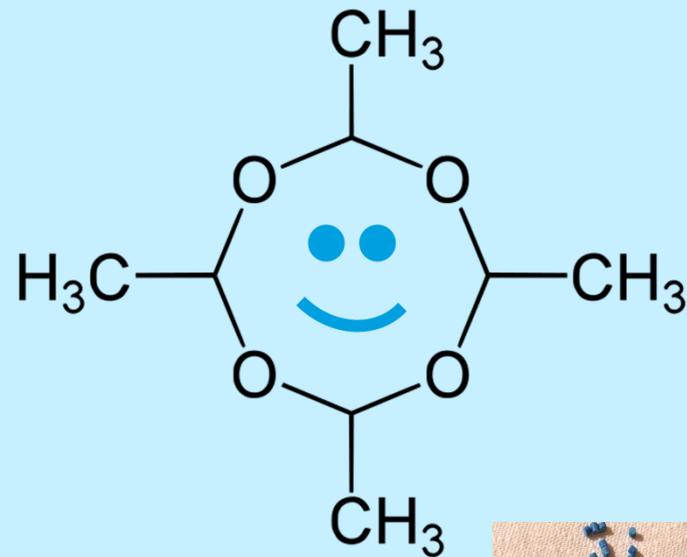


Pesticides: ease of removal

Not all pesticides are equal
(and neither are all WTW!)

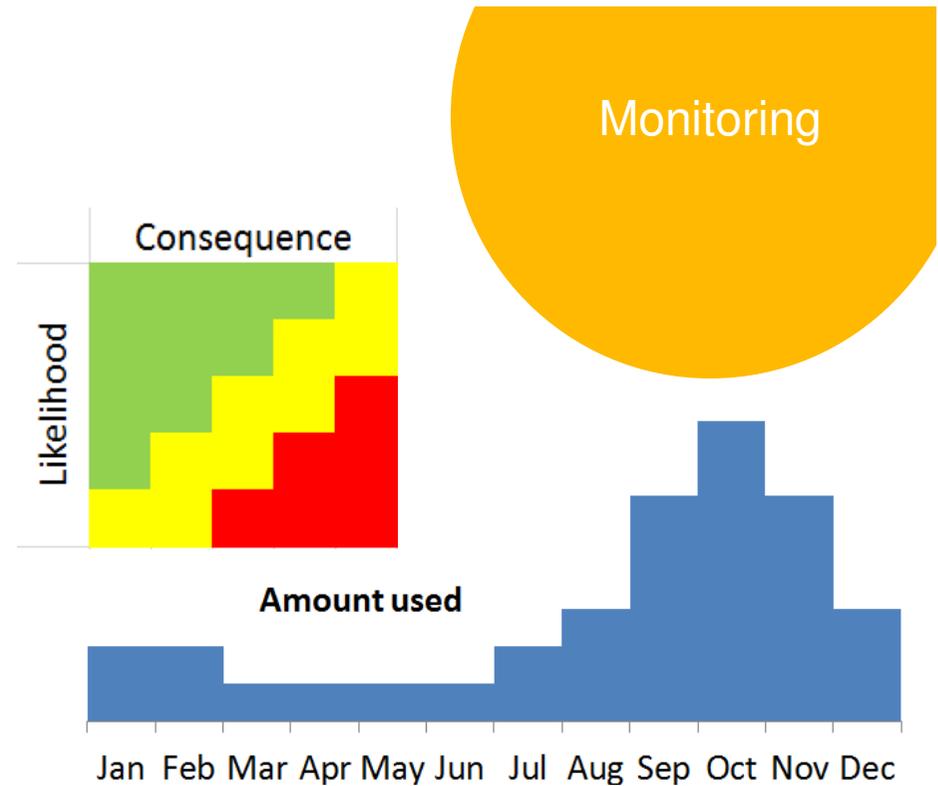


- e.g. metaldehyde – a happy, stable molecule



What we monitor

- Pesticide risk assessment
- Monitor for pesticides
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 - Likely to reach abstraction points
 - Difficult to remove
- Risk based approach



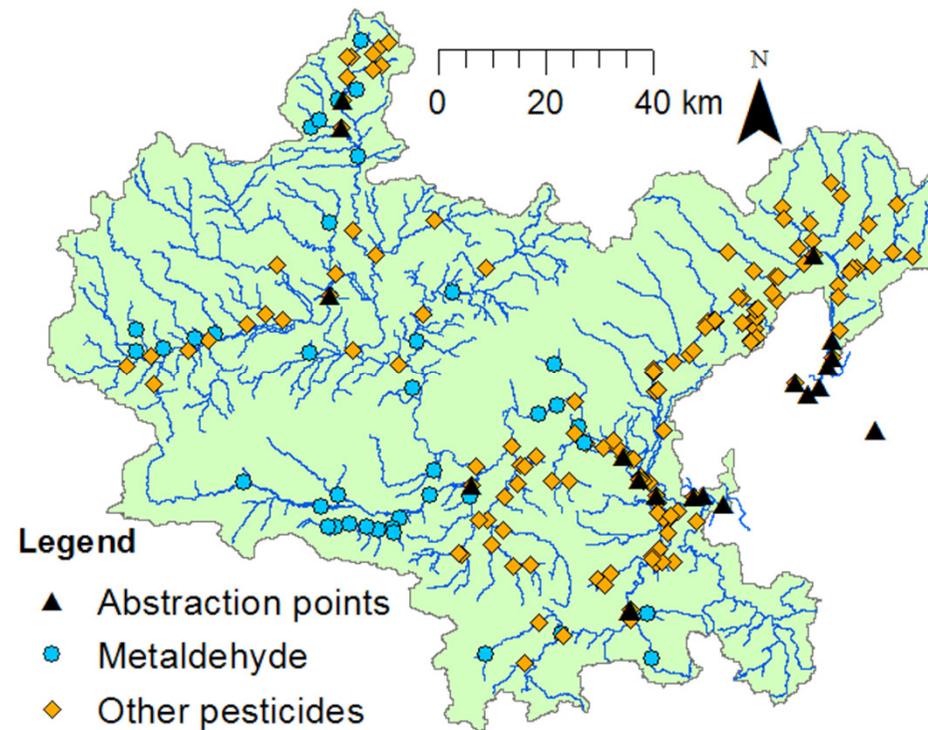
How we monitor

- Grab samples
 - Pros and cons
- Frequency
 - Statutory
 - Enhanced – time of use
- Locations
 - Abstraction points
 - Water treatment stages
 - Upstream catchment



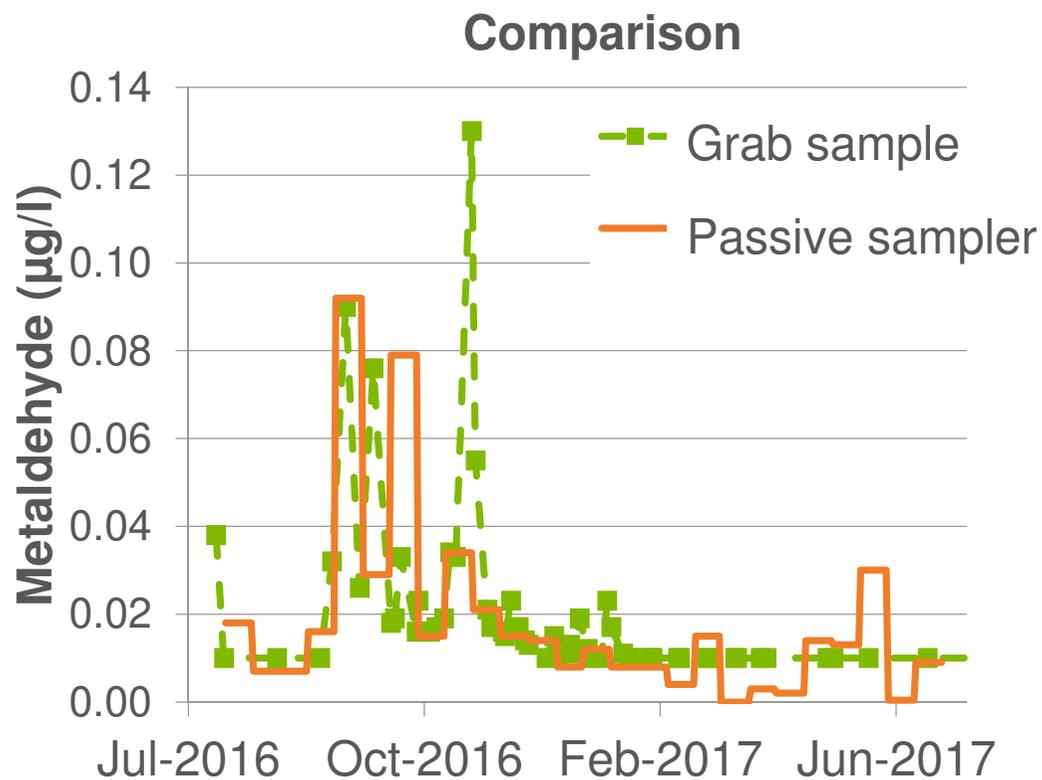
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Collaboration in monitoring

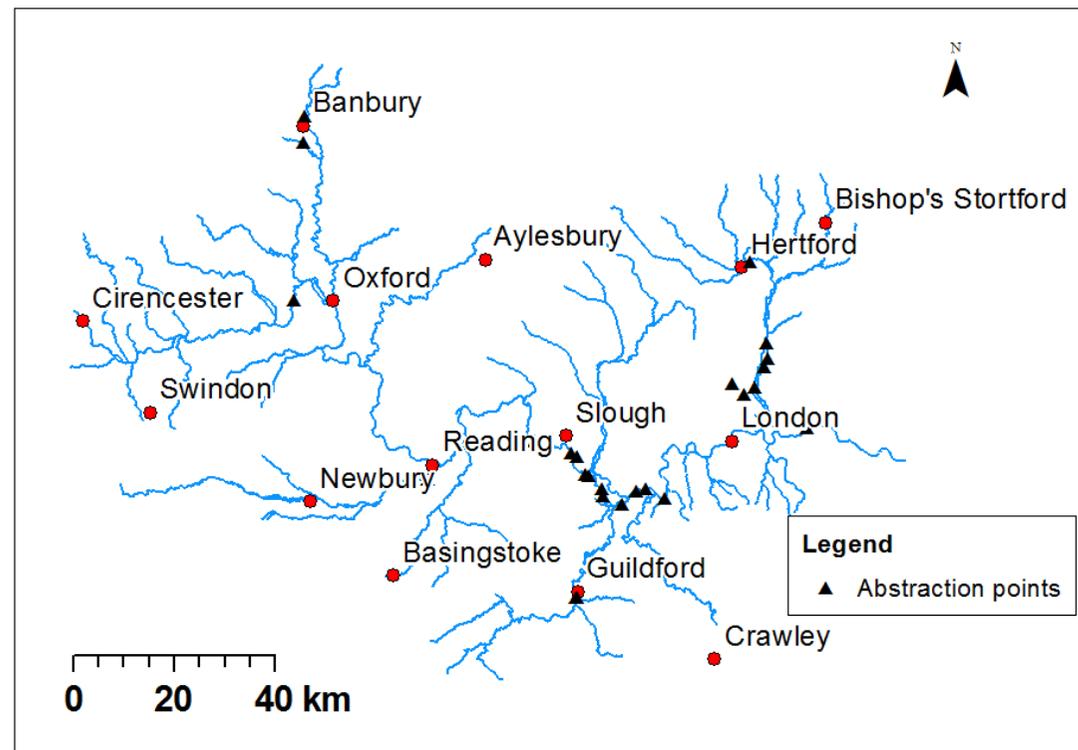
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 - Collective research
 - Common interests
 - Cooperative sampling
 - Combined datasets



Collaboration in monitoring

Monitoring

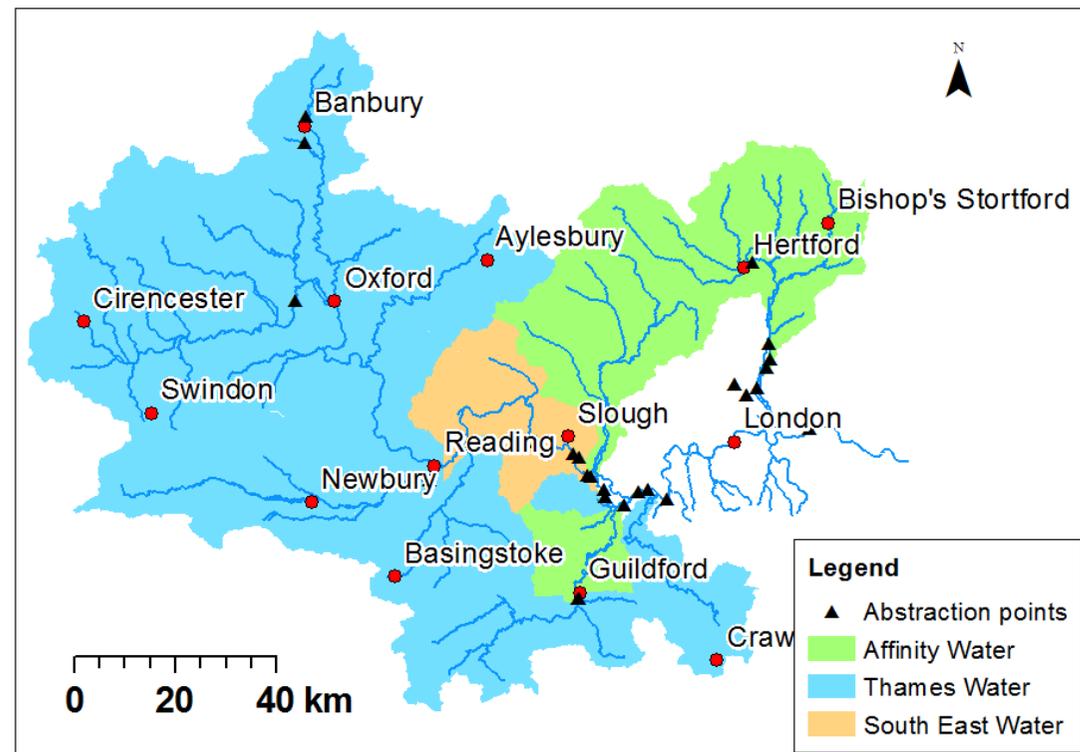
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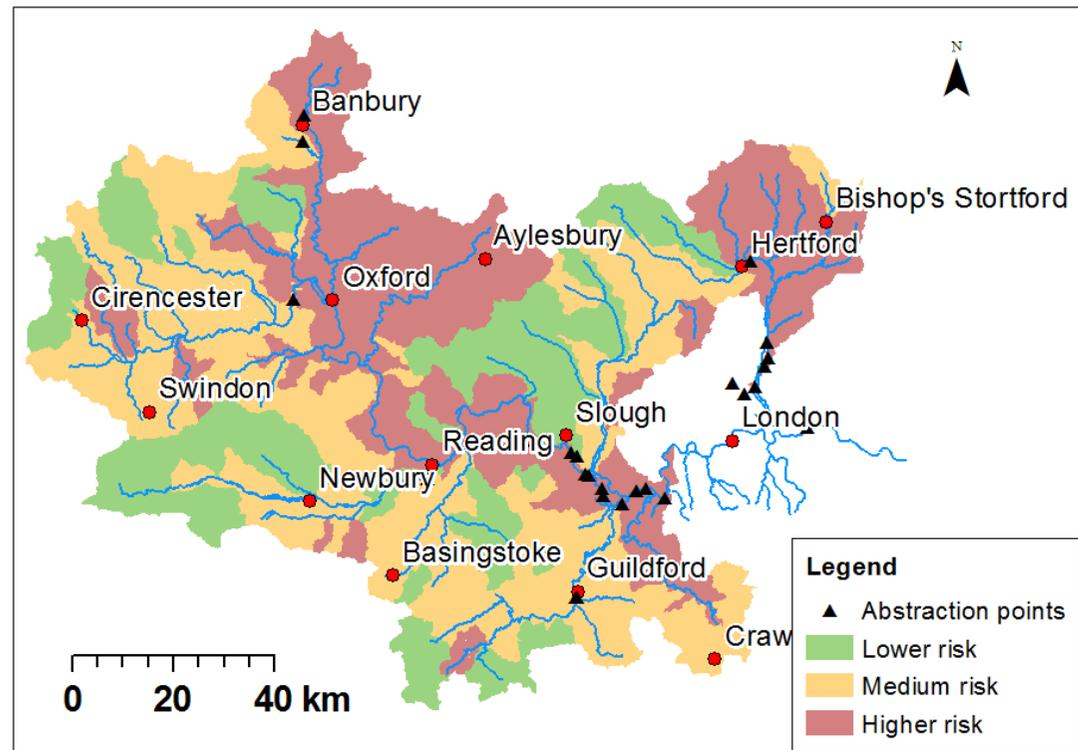
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Collaboration in monitoring

Monitoring

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Why we mitigate

- We have to meet the drinking water standard
 - Historically, engineering solutions were the obvious answer
 - Expectations have changed

- Prevention vs cure

- Mitigate at source
- Sustainable
- Holistic
- “Because it’s the right thing to do”



What we mitigate

- Pesticides most at risk of failure
 - Frequently found in raw water at abstraction points at concentrations that could challenge treatment
 - Deteriorating trends
 - Hard to remove

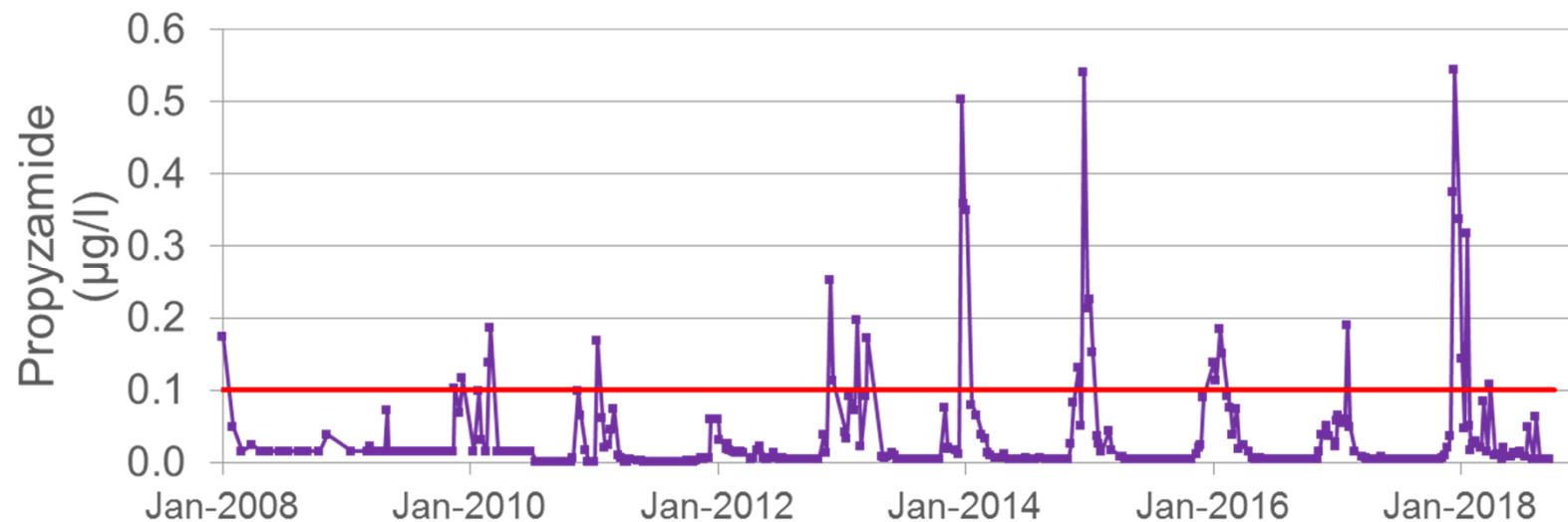
Metaldehyde



Propyzamide & carbetamide

What we mitigate

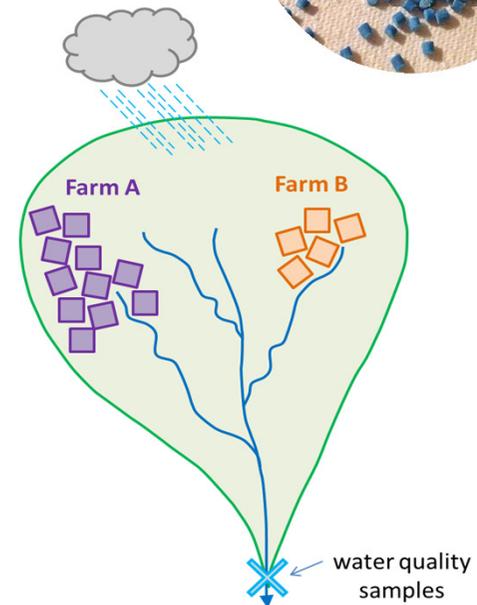
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How we mitigate

- Catchment management
 - Working with farmers to reduce the amount of metaldehyde reaching watercourses
 - Information about the issue
 - Encouraging Integrated Pest Management, including cultural controls
 - Education about alternative options
 - Incentivisation
 - Product substitution
 - Payment for ecosystem services

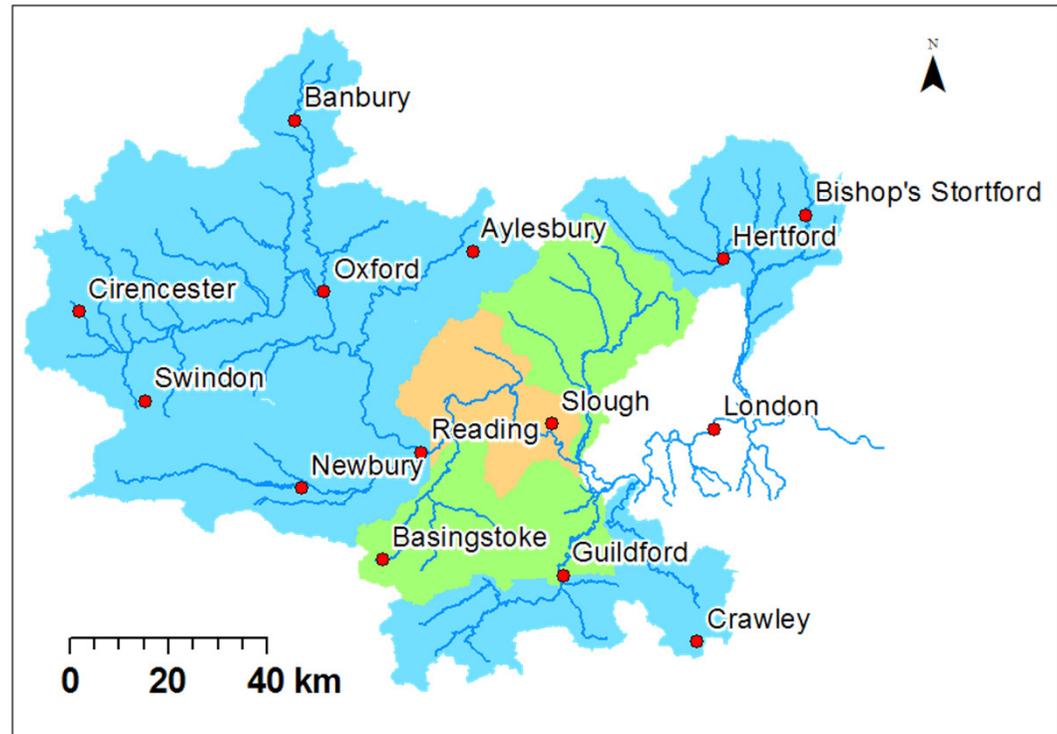
Voluntary approach



Collaborative mitigation



- Thames Catchment Management Steering Group
 - Agreed areas of responsibility
 - Sharing lessons learned



Collaborative mitigation



Conclusion

- **Monitoring:**
 - essential, but we have to take a risk-based approach.
- **Collaboration:**
 - efficiencies for all companies involved.
- **Mitigation:**
 - work in progress,
 - catchment management remains the preferred approach



Thank you

