IS THERE HARM IN REDUCING SPILLS AT STORM OVERFLOWS BEYOND HARM?

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Agenda

- Provide legislative context
- Pollution source apportionment
- How should we define harm?
- Should we be reducing spills at storm overflows to an average of 10 per annum?
- Should we approach this problem differently?
- Summary

Legislative background

Storm Overflow Assessment Framework (SOAF) 2018

- Five step framework issued by the Environment Agency to help prioritise infrastructure improvements to reduce spills at storm overflows.
- Four levels of study to define the complexity of modelling required to determine water quality impact.
- An update to the Storm Overflow Assessment Framework is due to be published soon.

Environment Act 2021

Water companies must:

- Report all discharges from storm overflows within an hour of the start of the discharge.
- Continuously monitor the quality of water upstream and downstream of an asset.
- Secure a progressive reduction in the adverse impacts of discharges at storm overflows.

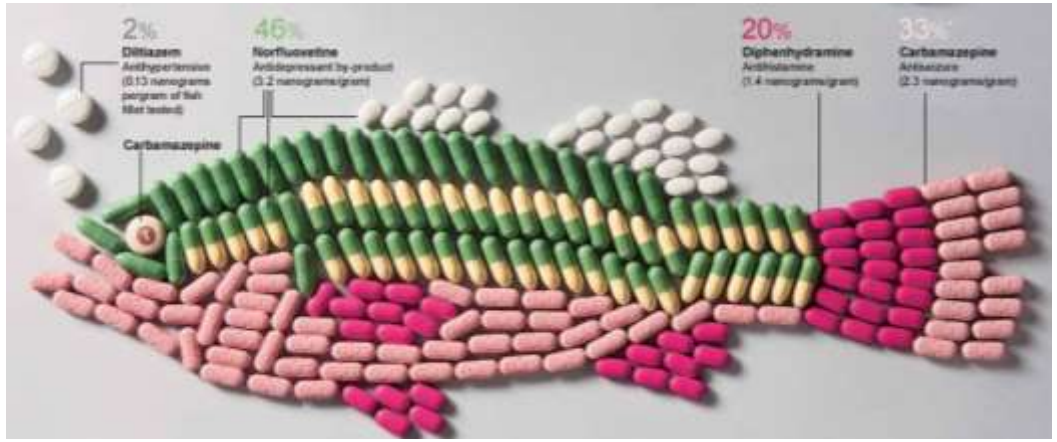
Storm Overflow Discharge Reduction Plan (SODRP) 2022

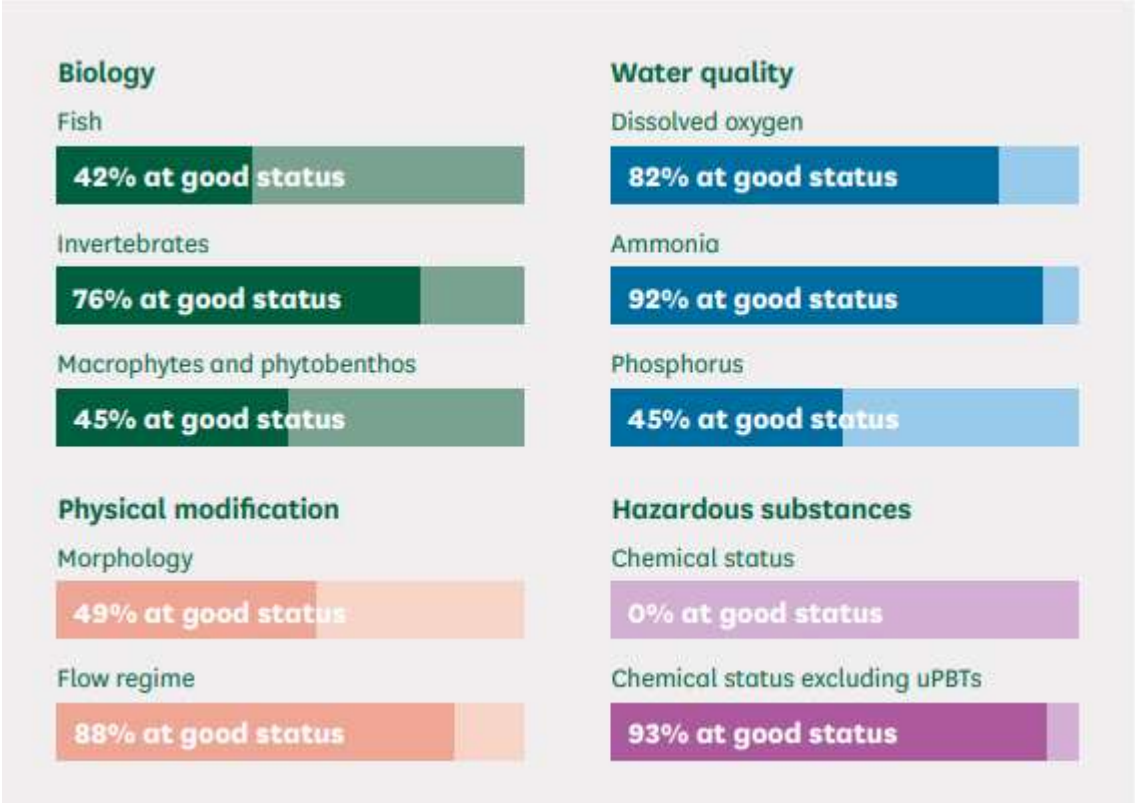
Water companies must:

- Only discharge from a storm overflow where they can demonstrate that there is no local adverse ecological impact.
- Significantly reduce harmful pathogens from storm overflows discharging near designated bathing waters.
- **Not allow storm overflows to discharge above an average of 10 rainfall events per year by 2050.**
- Ensure all storm overflows have screening controls.

How should we define harm?

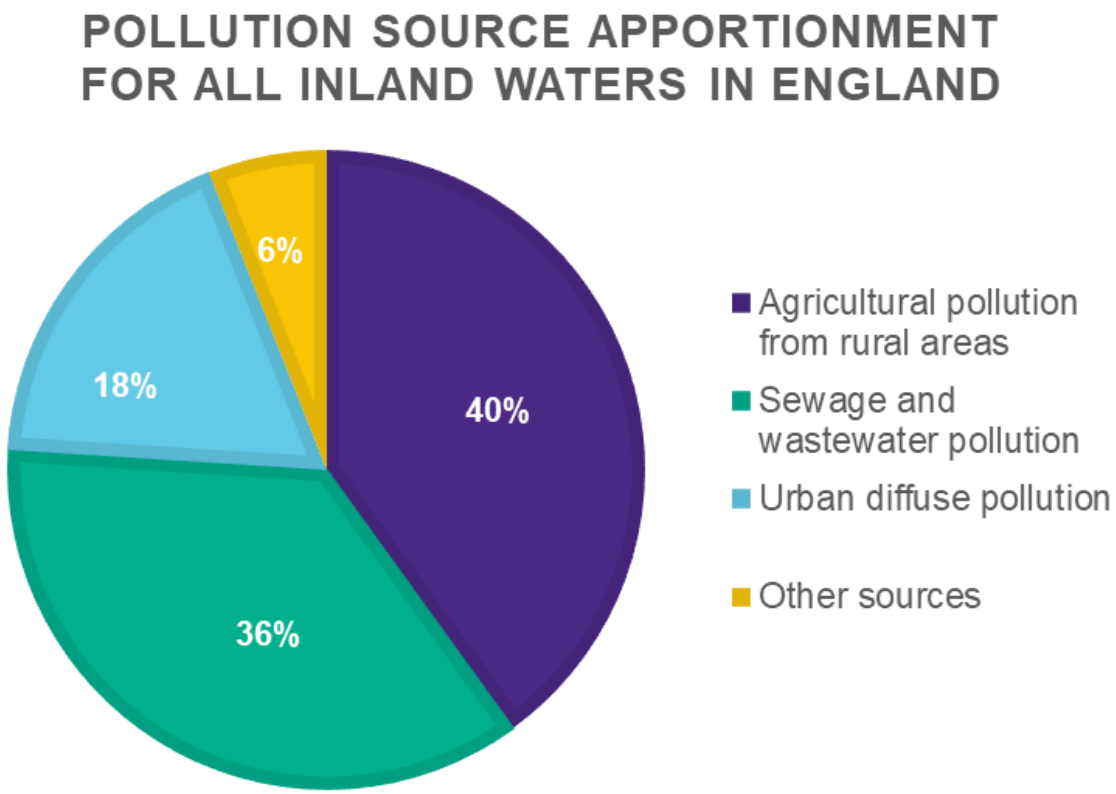
- Harm caused by storm overflows:
  - Harm to public health.
  - Harm to the environment.
- “No local adverse ecological impact”- Storm Overflow Discharge Reduction Plan





Environment Agency indicators for water quality in rivers in England (Water quality in rivers, House of Commons Environmental Audit Committee)

Improving water quality of rivers is not solely water companies' responsibility.



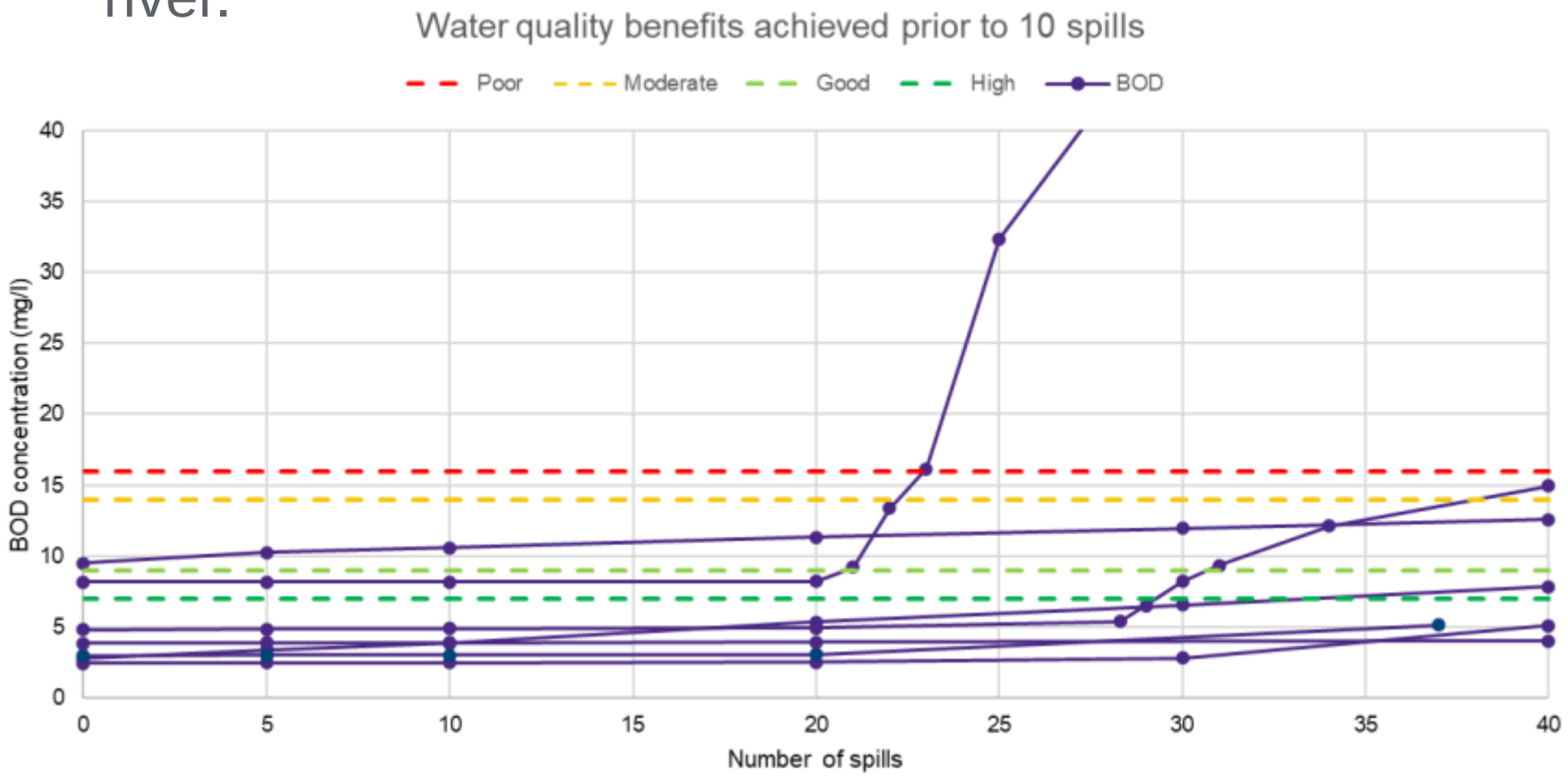
House of Commons Environmental Audit Committee (2022) *Water quality in rivers. Fourth Report of Session 2021–22*

SHOULD WE BE REDUCING SPILL FREQUENCY AT STORM OVERFLOWS TO AN AVERAGE OF 10 PER ANNUM?

Reducing to 10 spills per annum is a clear target which will likely improve the water quality of a river.

VS

The optimum water quality benefits at a storm overflow can often be achieved prior to 10 spills.



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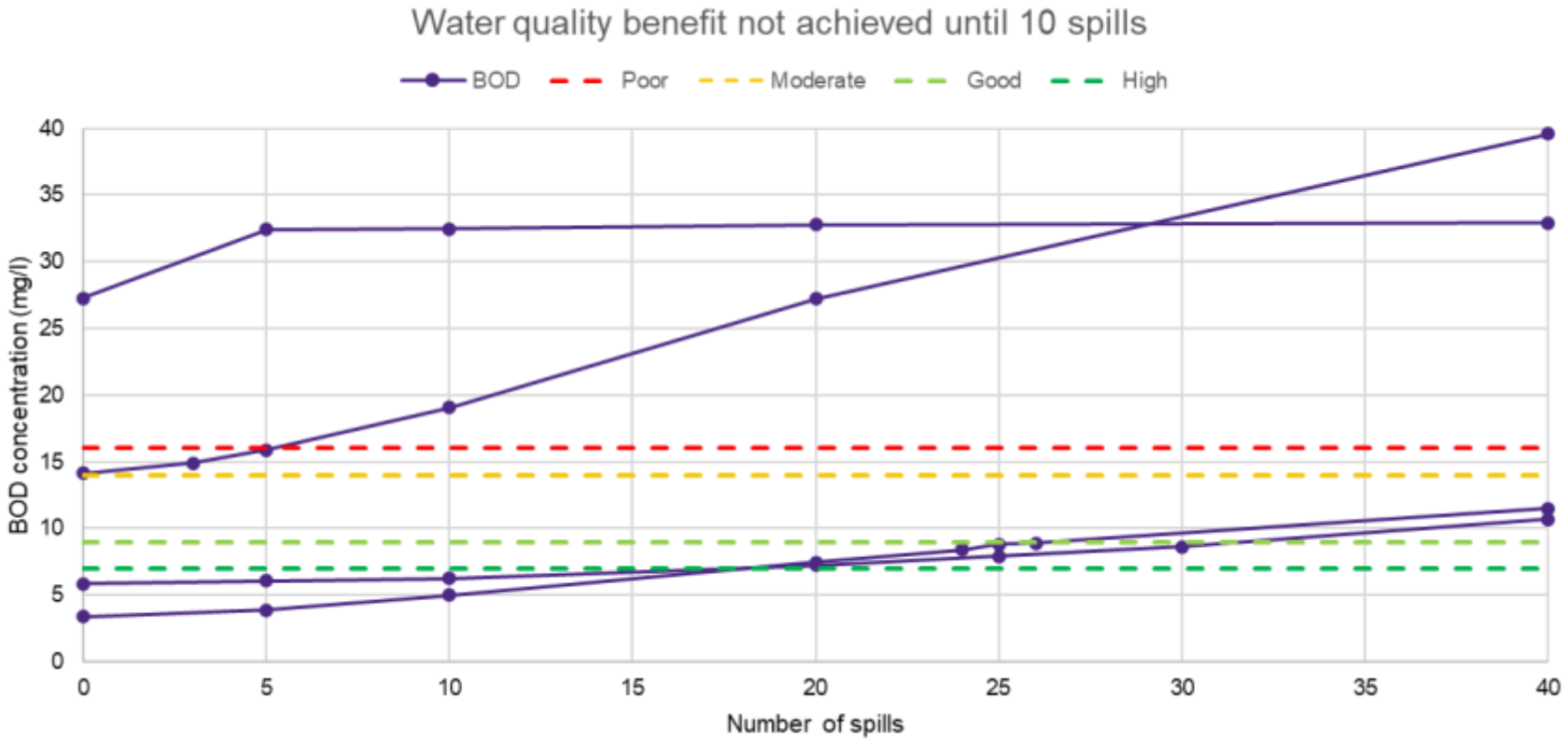
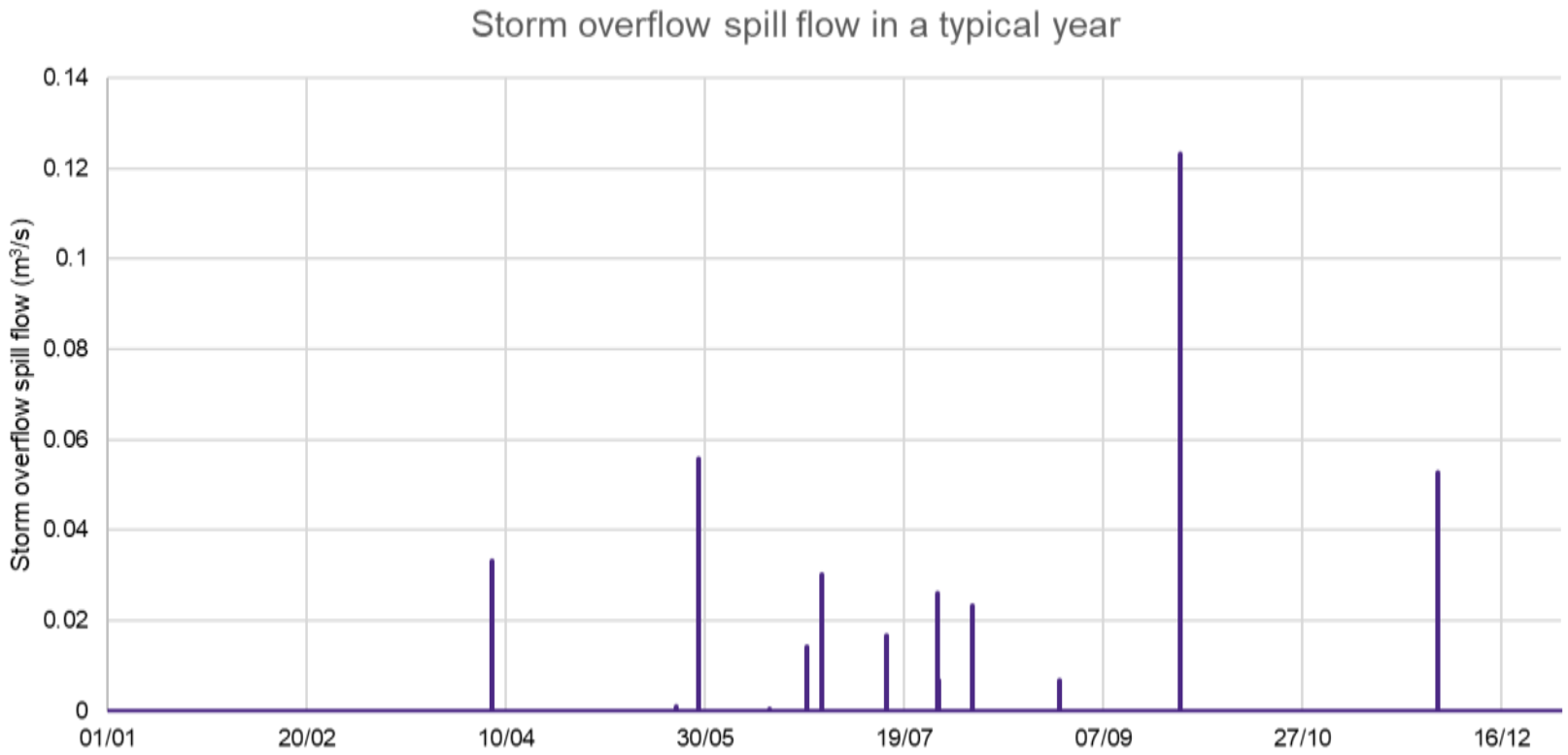


Harm is a subjective term and modelling is required to determine impact of a storm overflow.

VS

Setting arbitrary targets means solutions will be designed for all assets even when they don't cause harm.



Reducing spill frequency at all storm overflows is necessary by 2050.

Reducing spills is important to the public who want to use watercourses for recreational use.

Reducing spill frequency to 10 per annum at all storm overflows means that everyone has access to clean rivers.

Reducing spill frequency at storm overflows to an average of 10 spills per year is a statutory requirement.

vs

The cost and resources required to deliver this programme of work are not currently available.

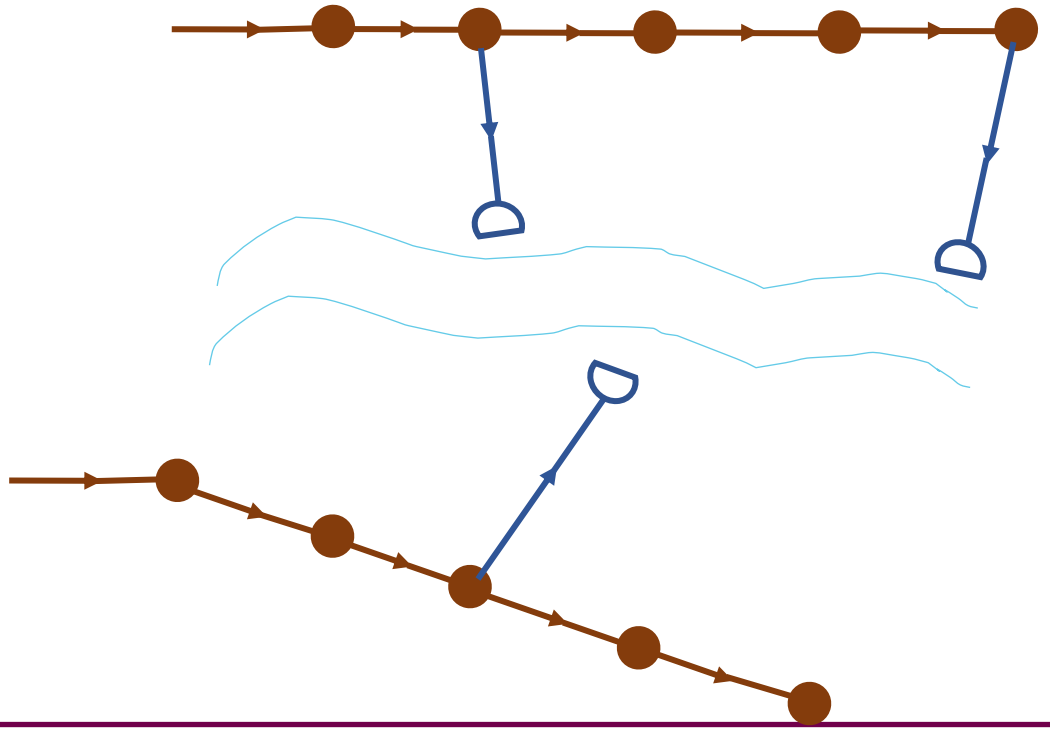
Reducing spill frequency to 10 per annum at storm overflows discharging to inland and coastal waters is estimated to cost £73 billion by 2050.

Ofwat have approved an accelerated infrastructure programme which is a £1.7 billion investment in 10 schemes across 7 water companies.

There is a significant annual cost associated with maintaining the schemes that needs to be accounted for.

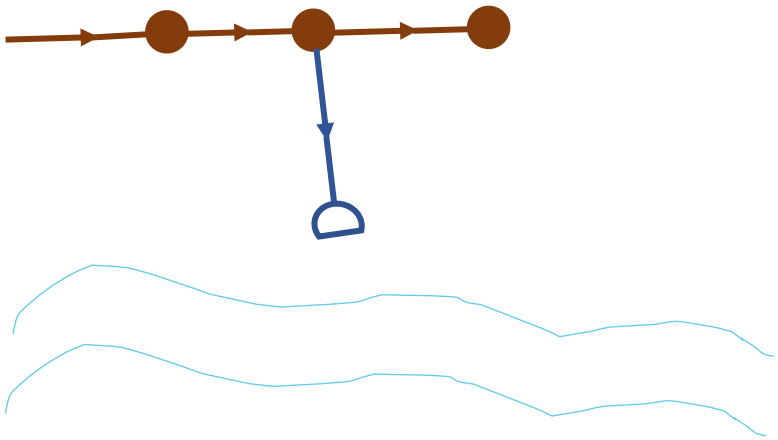
Upsizing and improving treatment technologies at sewage treatment works is a requirement to improve water quality.

Reducing spills at every storm overflow to 10 per year encourages the implementation of a catchment-based approach.



vs

A spill target approach could lead to solutions focused on individual poorly performing assets within a catchment.



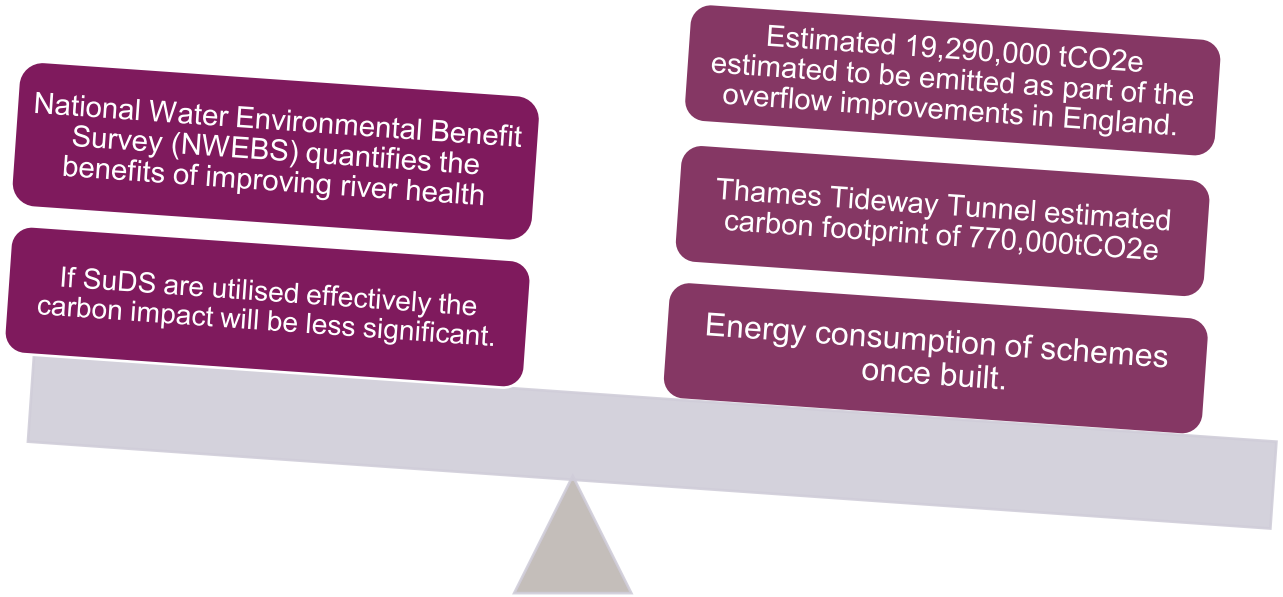
Pollution of waterbodies needs to be addressed as this can cause significant harm to the environment.

VS

There is a significant carbon impact of reducing spills to 10 per annum that needs to be considered.

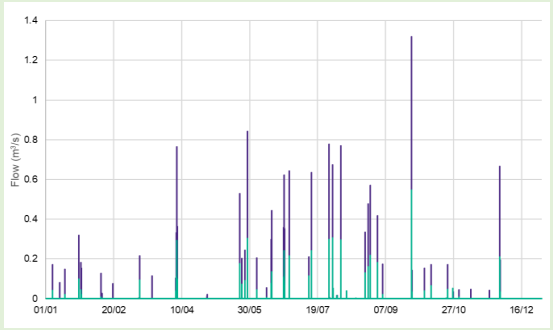
Storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050.

Water companies have committed to net zero carbon emissions by 2050.



SHOULD WE APPROACH THIS DIFFERENTLY?

Assess water quality impact and identify sources of pollution prior to designing solutions.



Spill volume and duration is a more useful metric than spill count.

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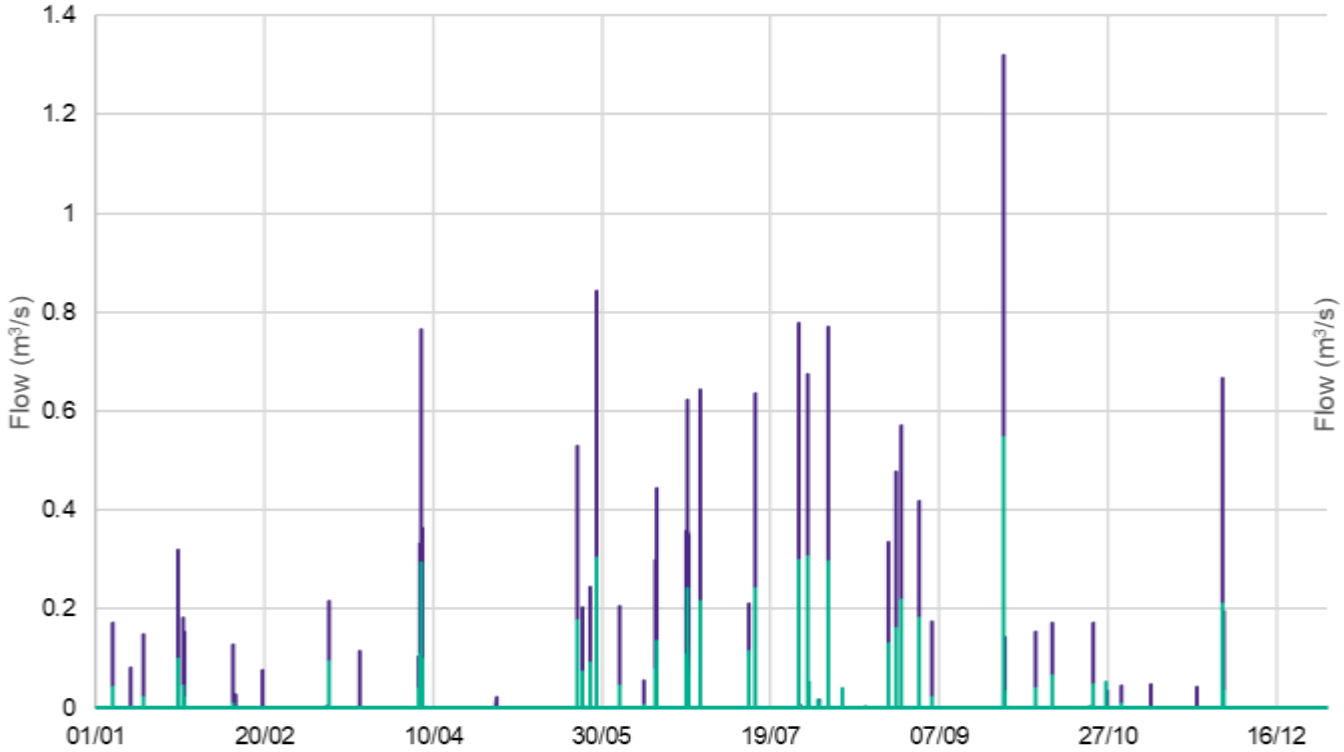
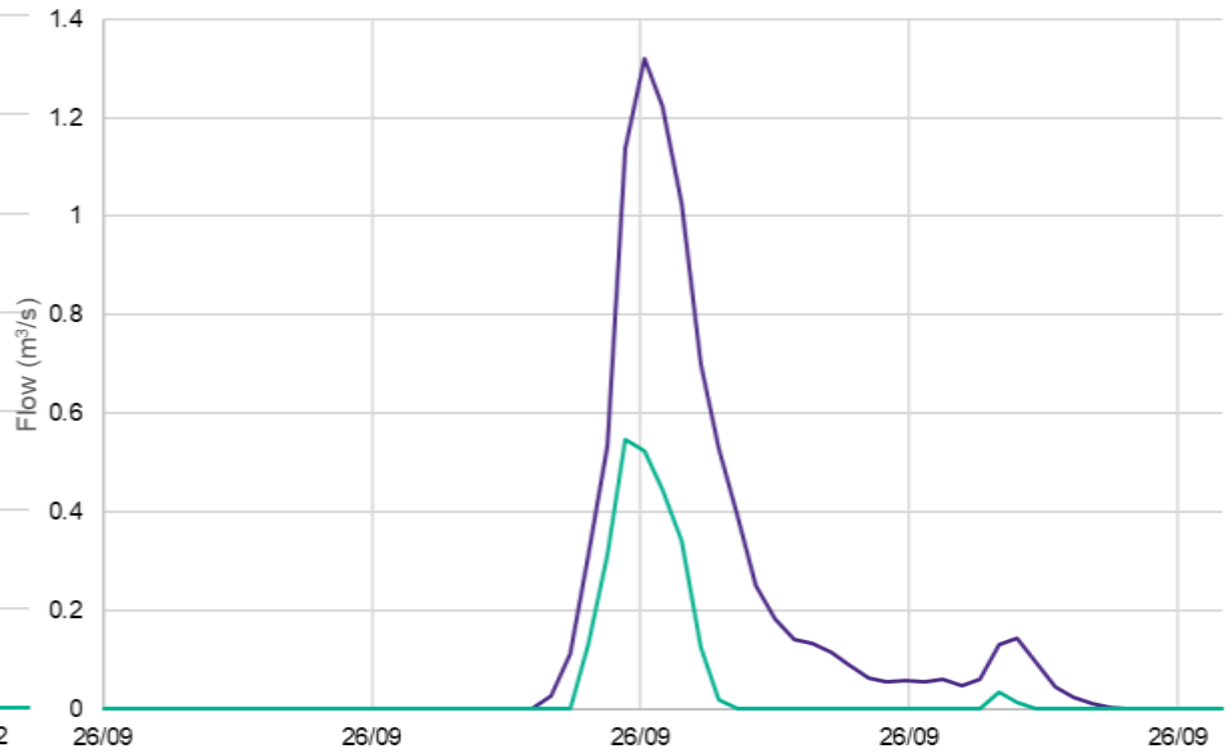
Spill volume and duration is a more useful metric than spill frequency.

Spill flow at two assets with similar spill frequency but different spill volumes





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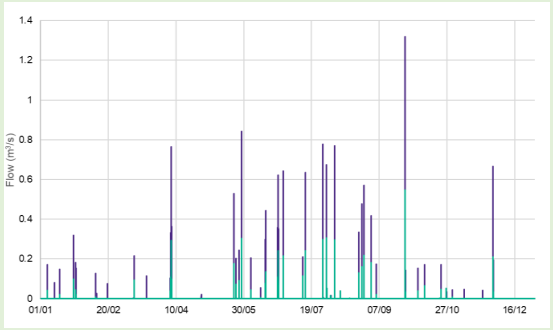

Spill volume and duration is a more useful metric than spill count.

Prioritise watercourses with high amenity value.

Invest in improvements to monitoring equipment to be able to demonstrate impact more effectively.

STW

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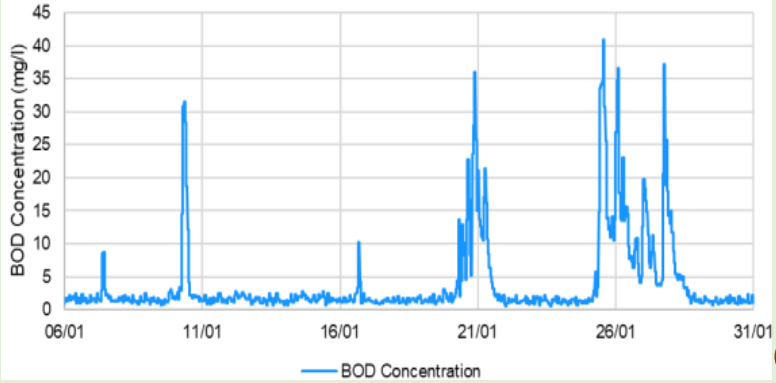
Consider the impact of the river on dilution of the overflow pollutants.



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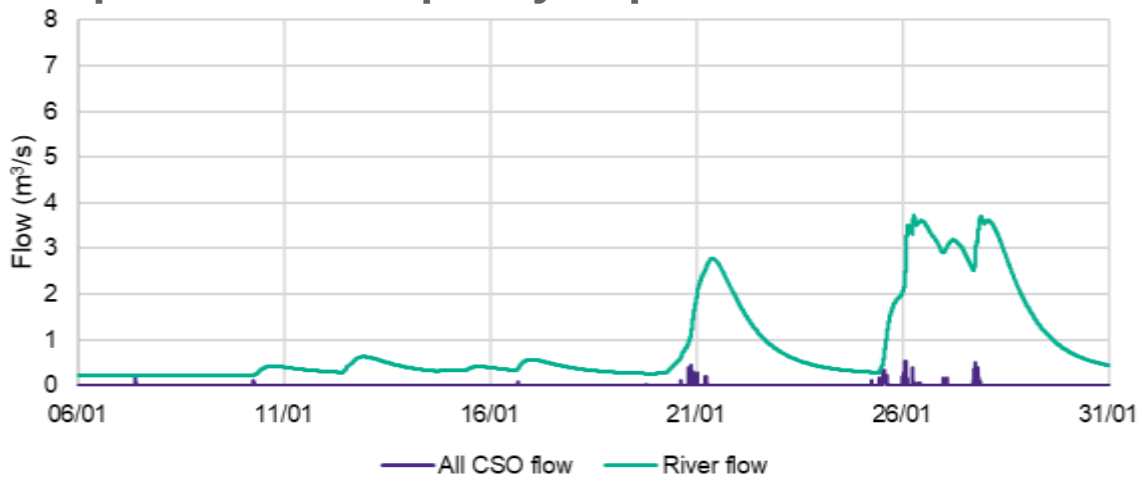
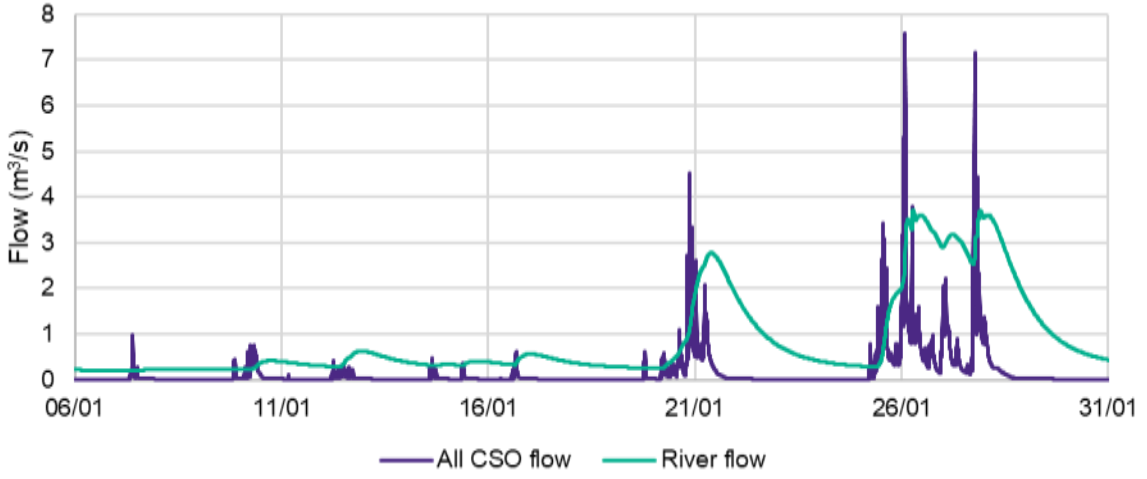
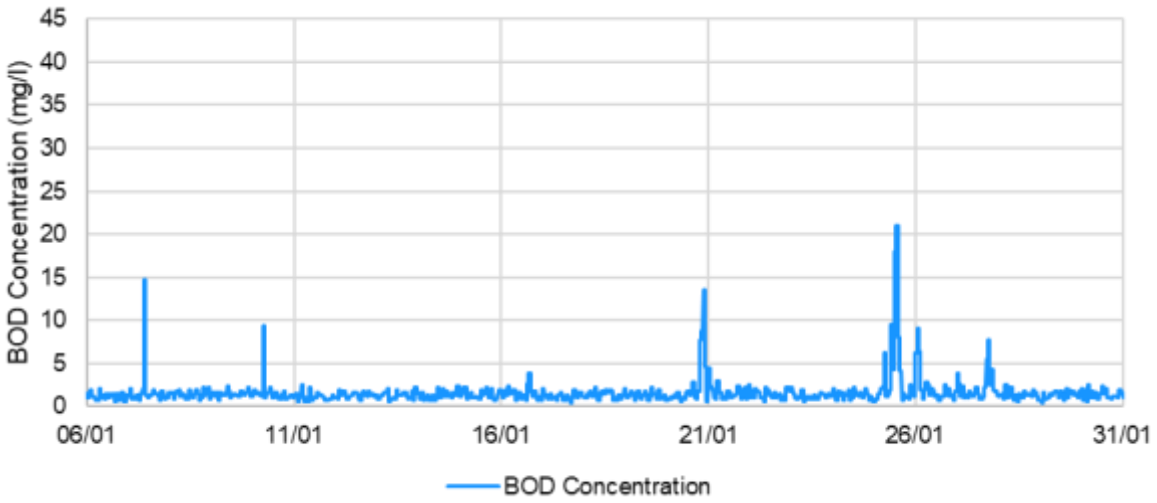
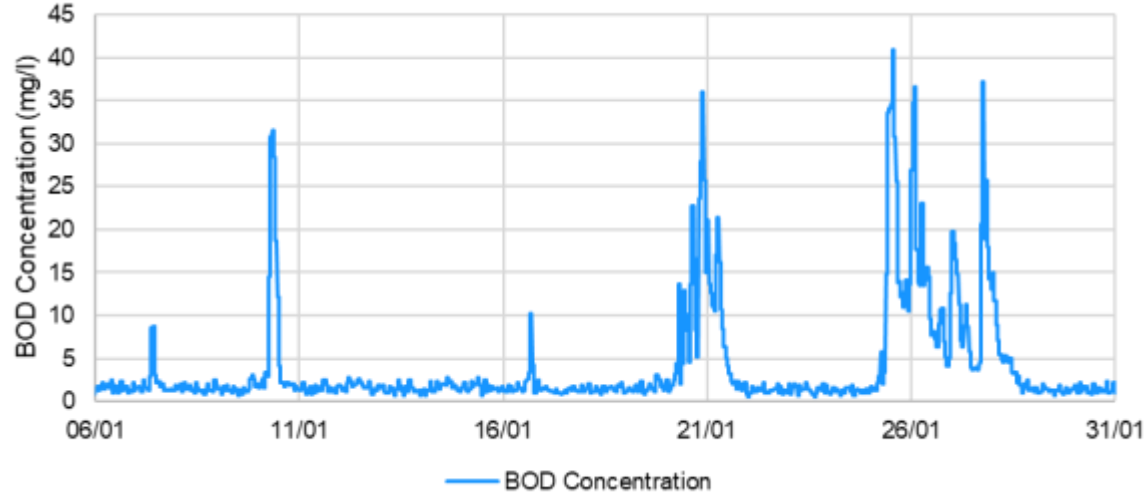
Inputs of water quality impact assessment





Results of water quality impact assessment





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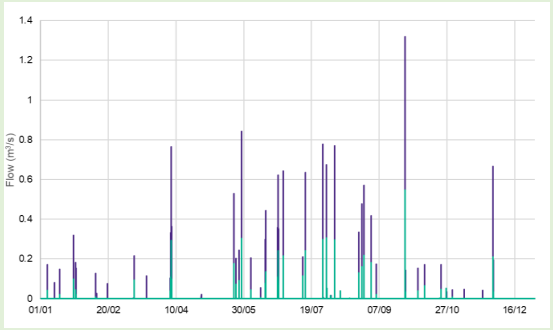

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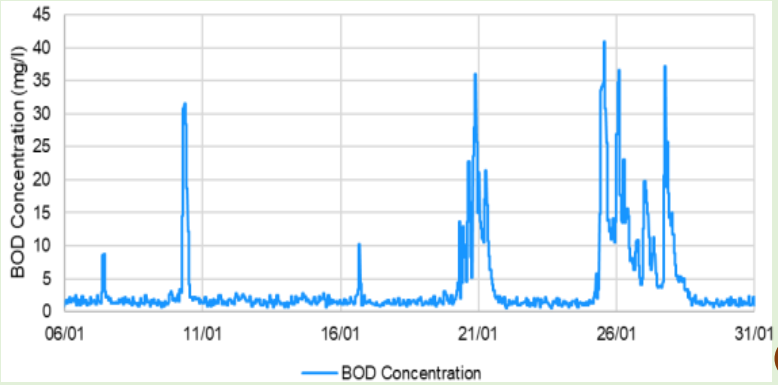

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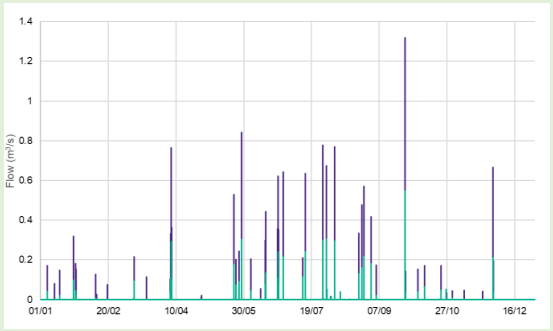

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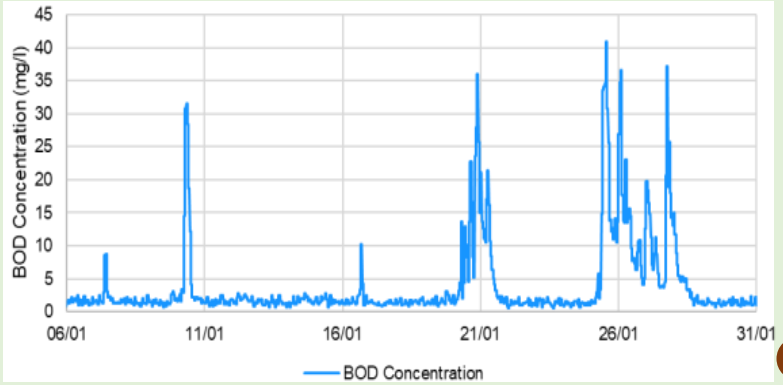

Invest in treatment technology.

Adopt a catchment-based approach. Propose bespoke solutions based on catchment characteristics.

Identify catchments we can easily reduce spills by disconnecting surface water systems.

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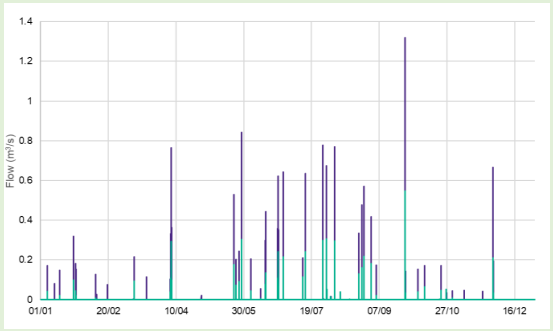

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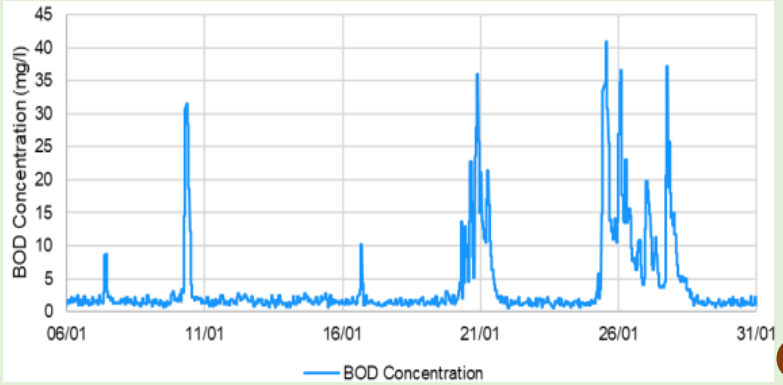

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Summary

Reducing overflow spill frequency to an average of 10 spills per annum is a statutory requirement. Politically, it would be very difficult to change this target now.

However, reducing spill frequency at overflows to an average of 10 per year may not provide environmental improvements proportional to the scale of investment required.

We are reducing spills with the aim of improving water quality so we need to make sure we are able to actually do that.