



BRISTOL
WATER

Challenges of Drinking Water Security in the West of England

**UWE
Bristol**

University
of the
West of
England



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It's what we're made of

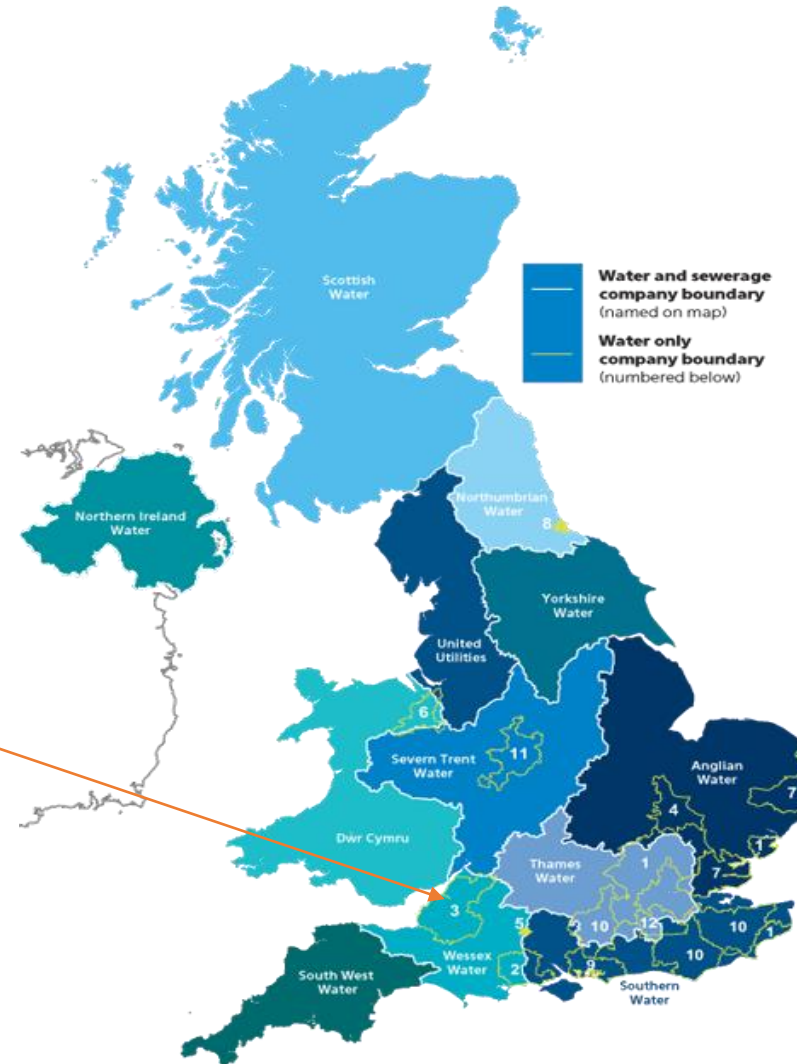
1. Resilience Measures: catchment & source

2. Resilience Measures: distribution



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Where is Bristol Water?





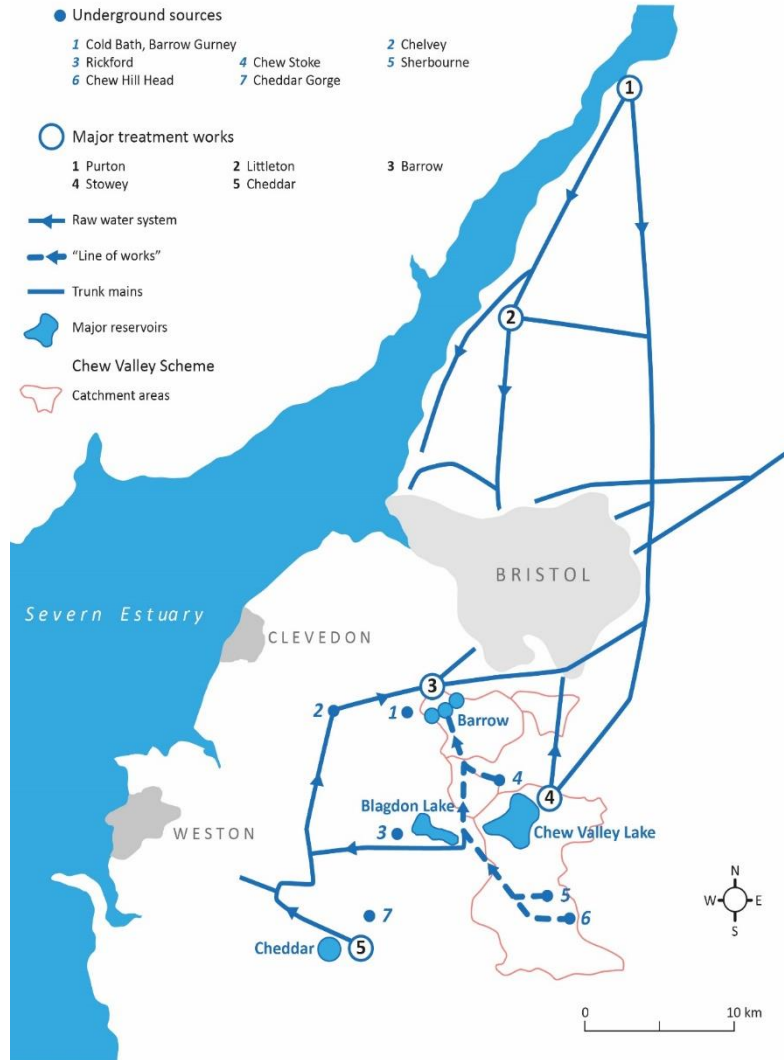
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Part 1

Resilience Measures: catchment & source

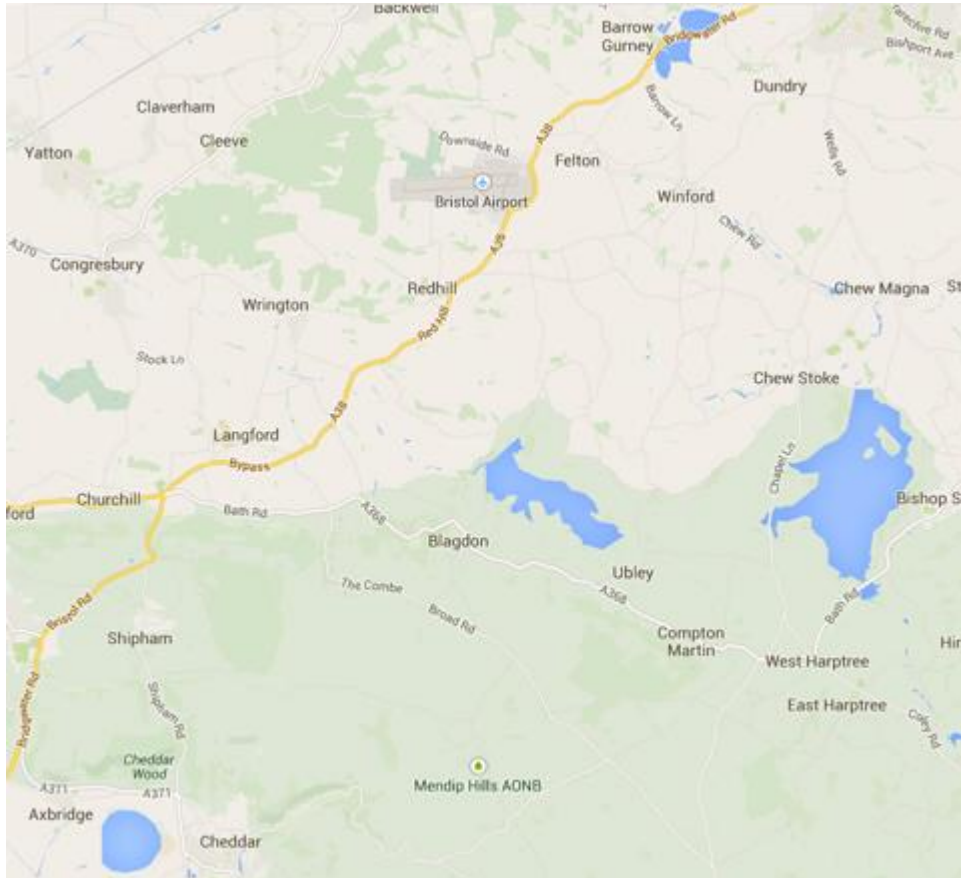
Part of Bristol Waterworks Company's System





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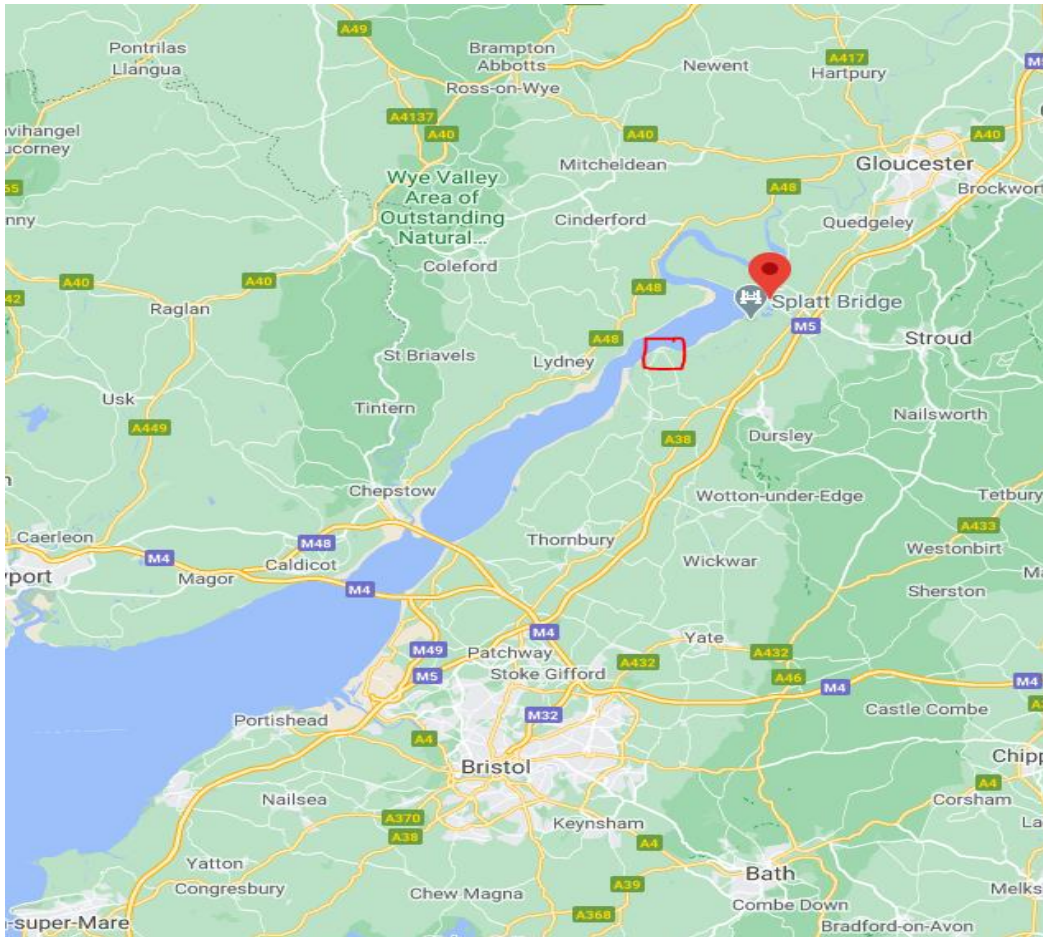
Southern sources





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Northern source

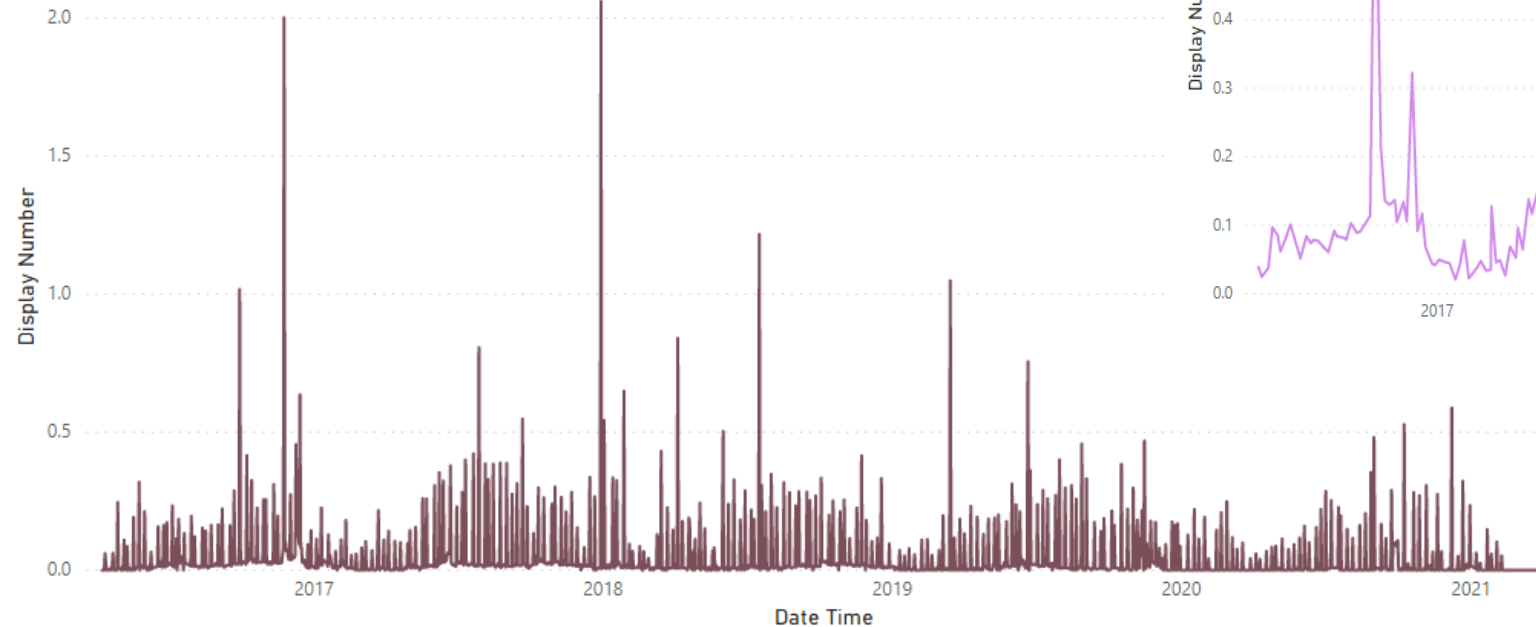




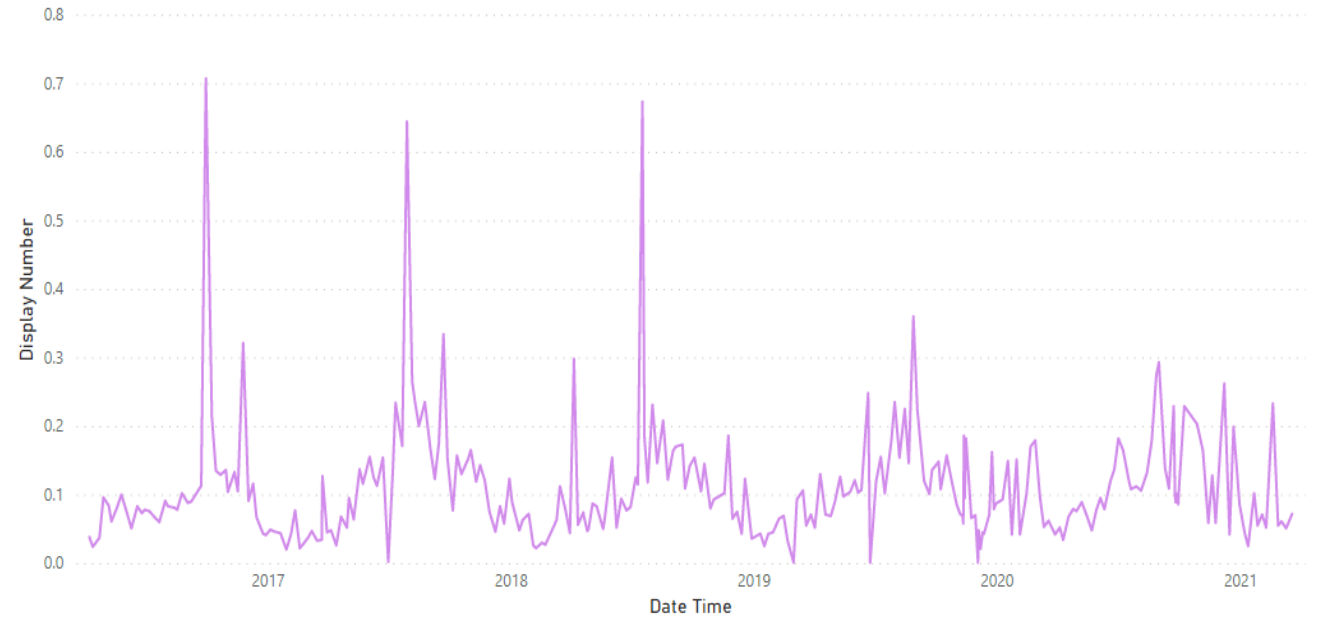
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Raw water quality: Pesticides

Sample Point ID + Result ● PURTONINTK Total Pesticides

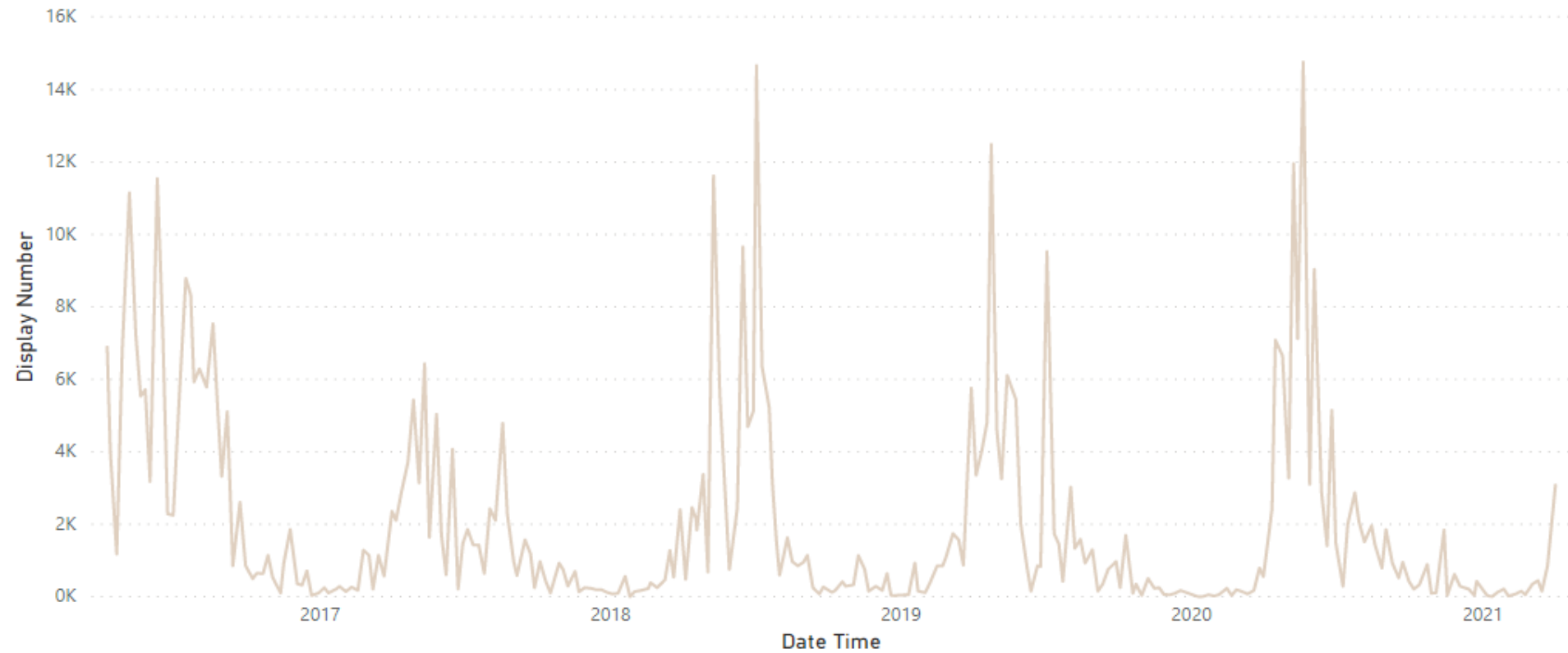


Sample Point ID + Result ● PURTONINTK Glyphosate



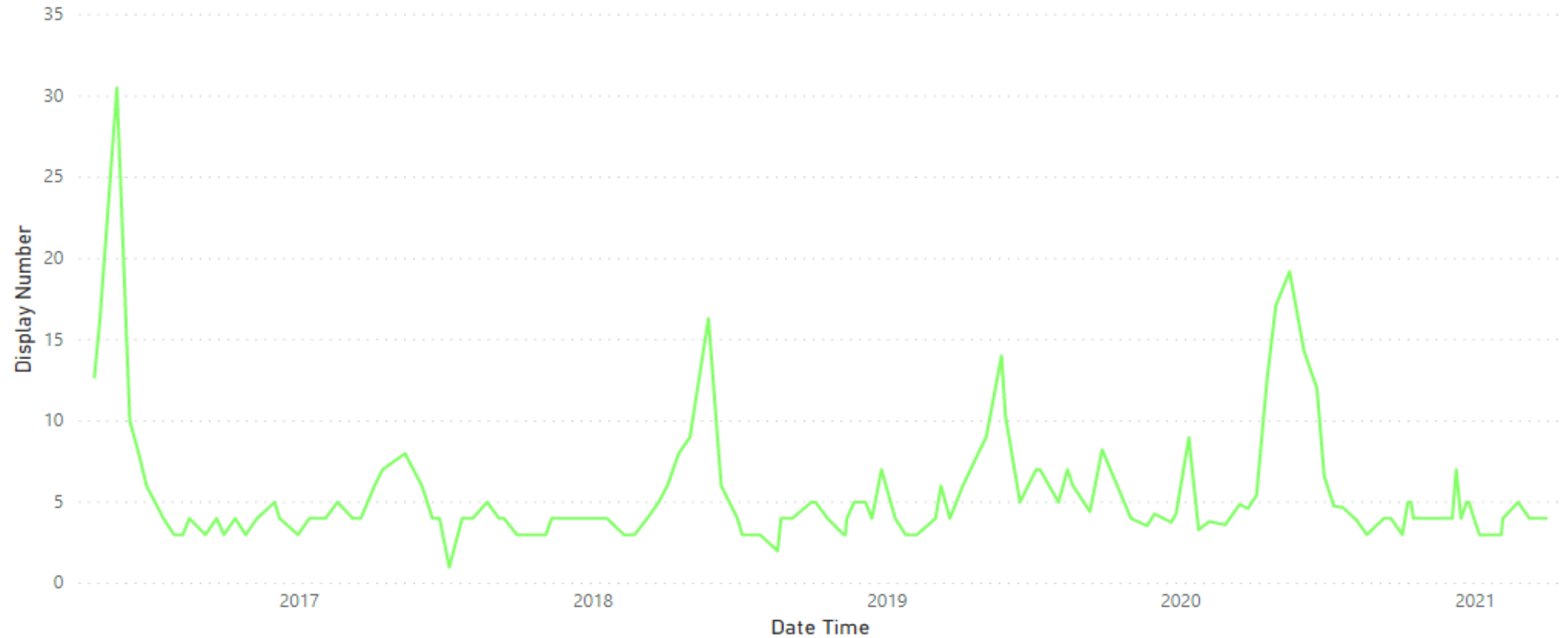
Raw water quality: Algae

Sample Point ID + Result ● PURTONINTK Algae Count



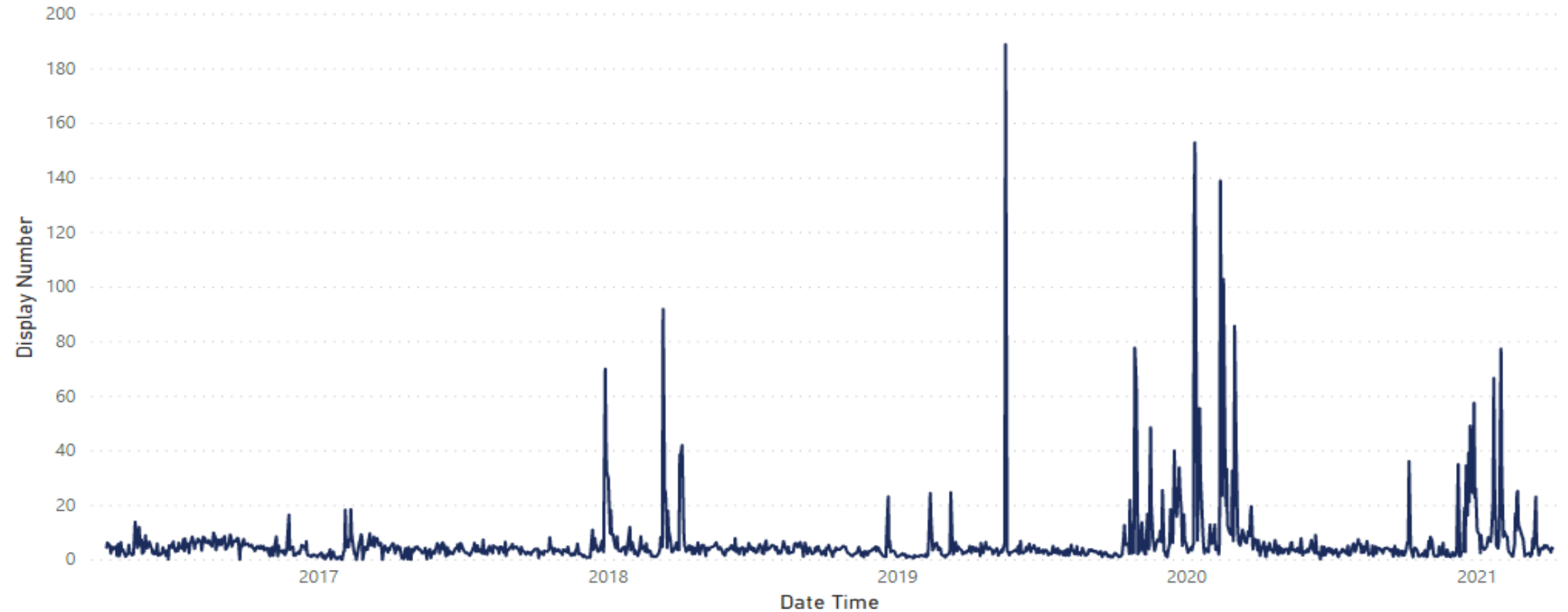
Raw water quality: Geosmin

Sample Point ID + Result ● PURTONINTK Geosmin



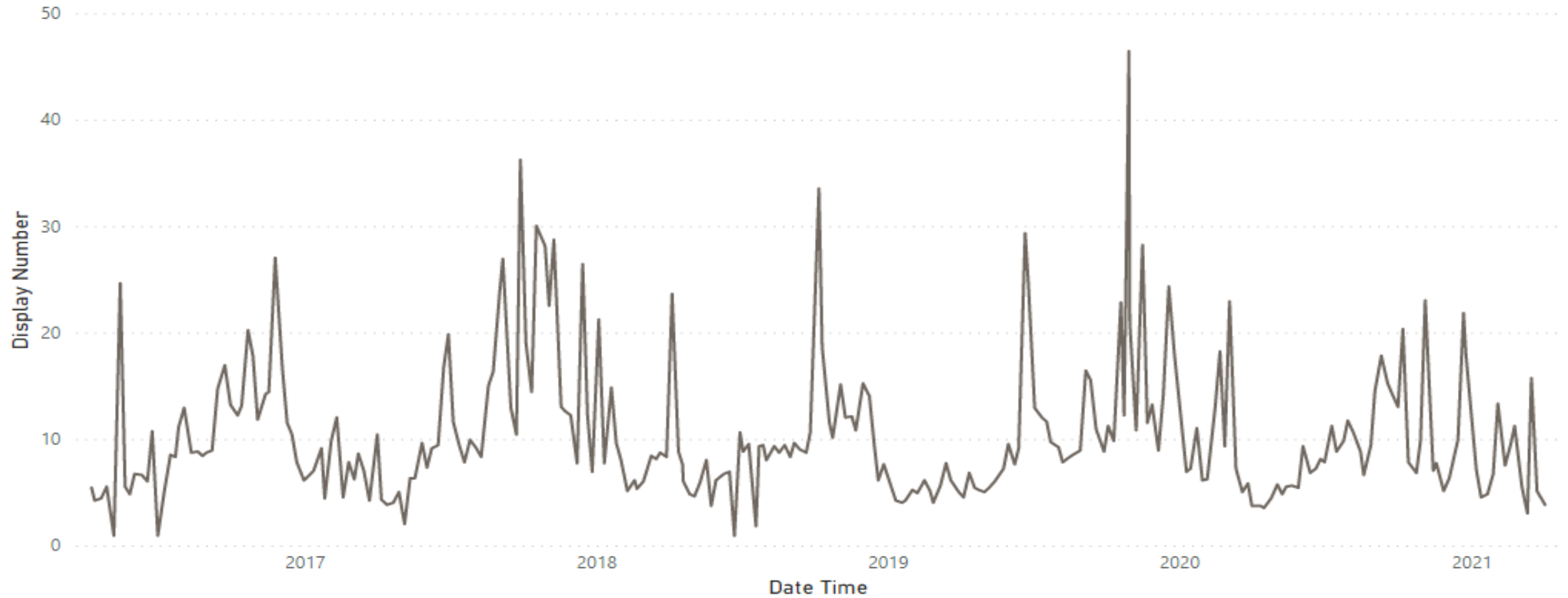
Raw water quality: Turbidity

Sample Point ID + Result ● PURTONINTK Turbidity - Indicator



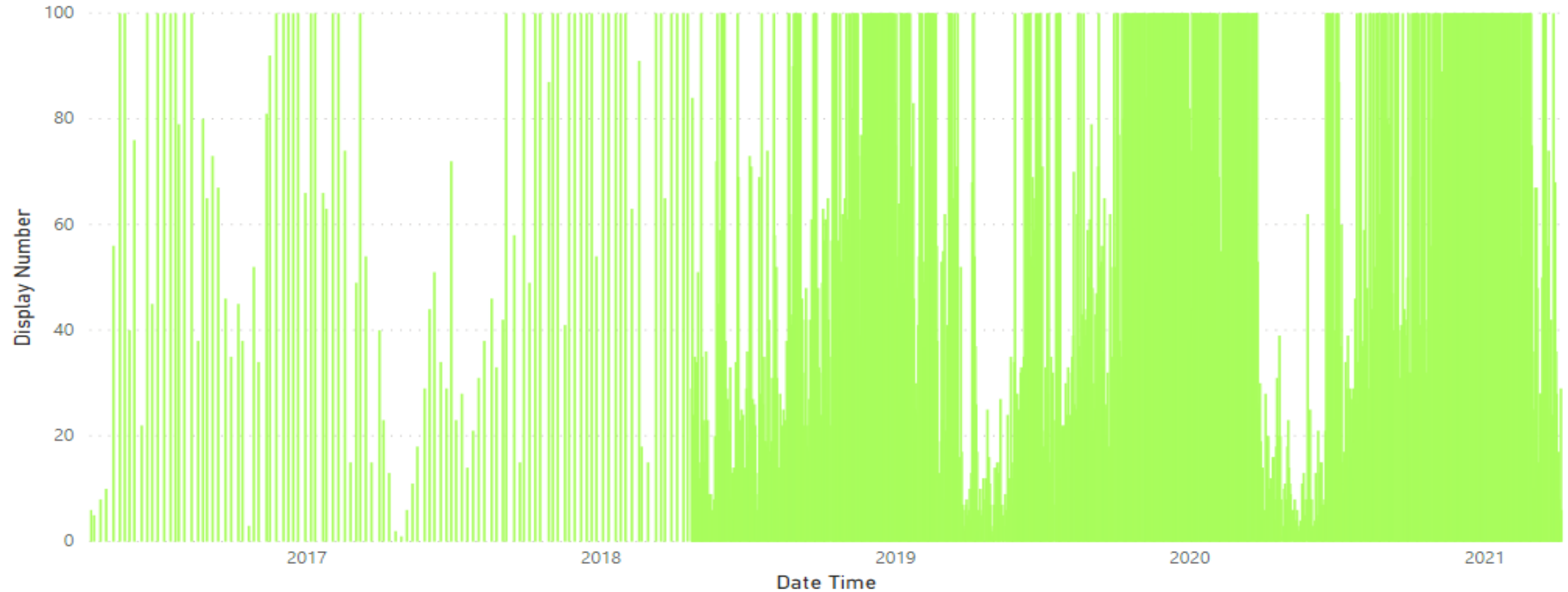
Raw water quality: Colour

Sample Point ID + Result ● PURTONINTK Colour

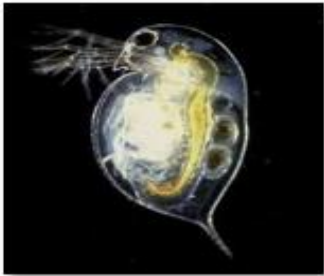


Raw water quality: *E. Coli*

Sample Point ID + Result ● PURTONINTK E.Coli Presumptive



Algae and Zooplankton



Daphnia



Spirogyra



Nematode Worm



Nauplius



Dinobryon



Pandorina



Fragilaria



Asterionella



Anabaena



Asellus



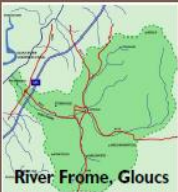
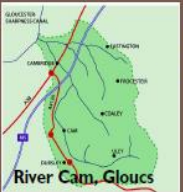
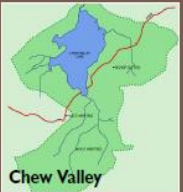
Chydorus



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Bristol Water Metaldehyde Action Project



Bristol Water is working in partnership with the Farming and Wildlife Advisory Group (FWAG) to liaise with farmers and landowners in order to gain a better understanding on the extent of metaldehyde use in the four catchments above.

The Metaldehyde Action Project is helping farmers with...

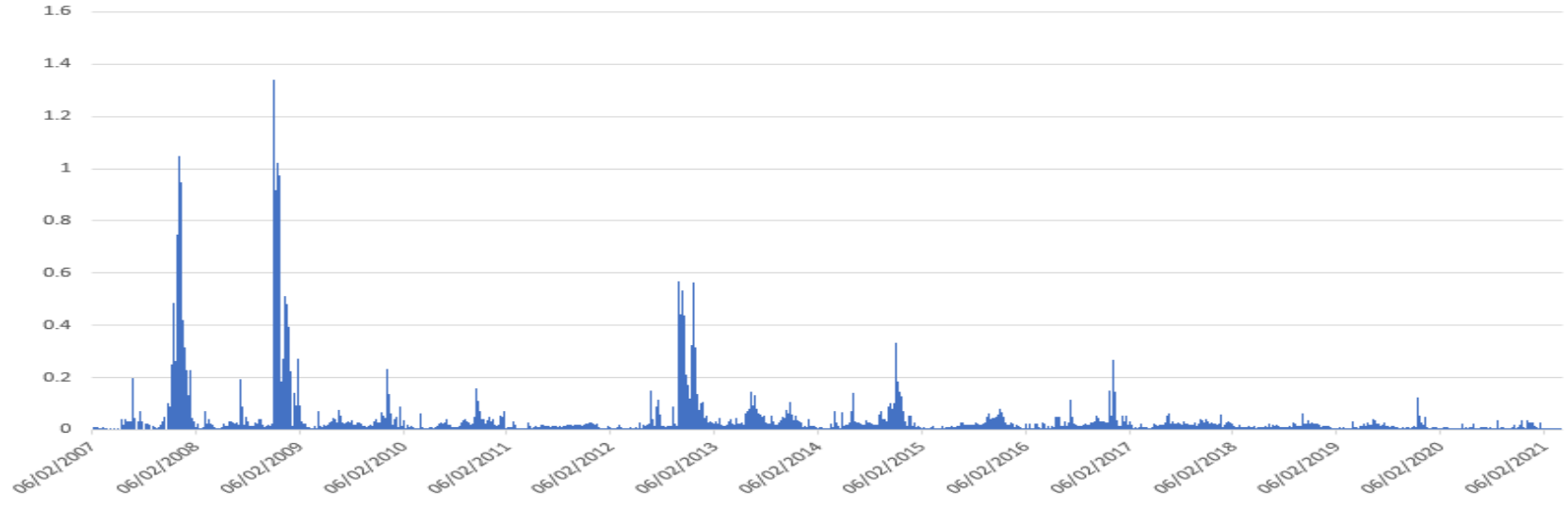
- Free training for slug pellet users to obtain appropriate NPTC certification.
- Free calibration tests for application equipment.
- Free advice on slug monitoring and control strategies.
- Free advice on Environmental Stewardship Scheme (ELS and OELS) water protection measures.
- Access to selective water quality monitoring data

For more information on the project or to register for free training and application machinery calibration, contact FWAG on 01823 355 427 or visit: www.fwag.org.uk

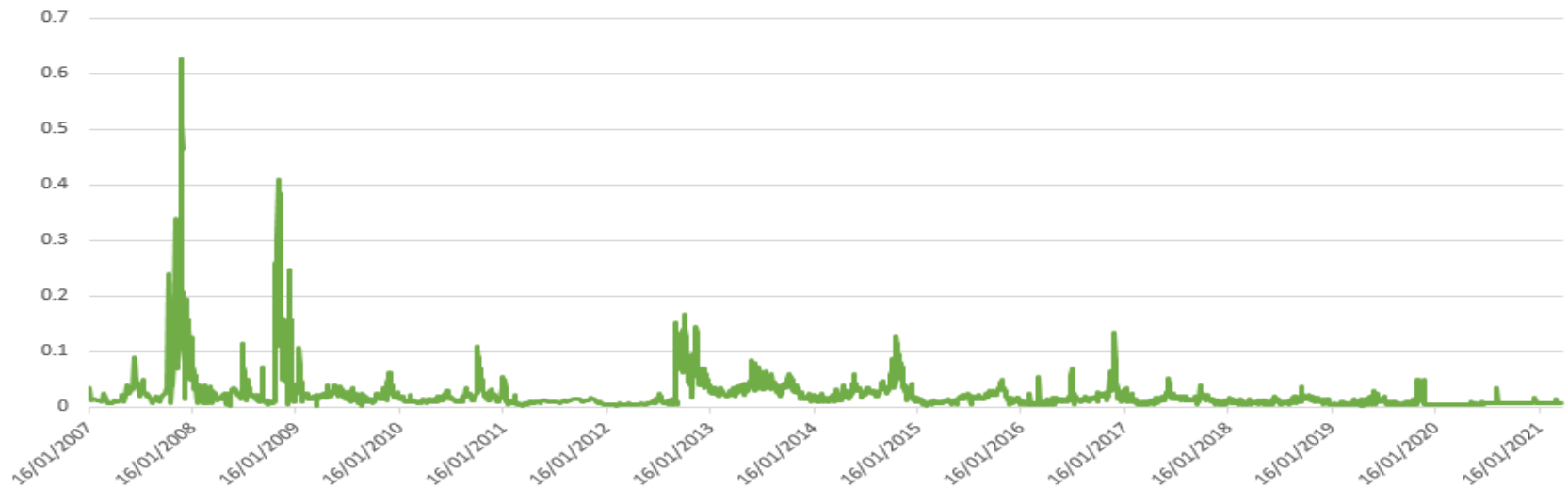


Farming & Wildlife Advisory Group

Metaldehyde at Purton Intake (ug/l)



Metaldehyde at Purton treated ug/l



The Zebra Mussel (*Dreissena polymorpha*)



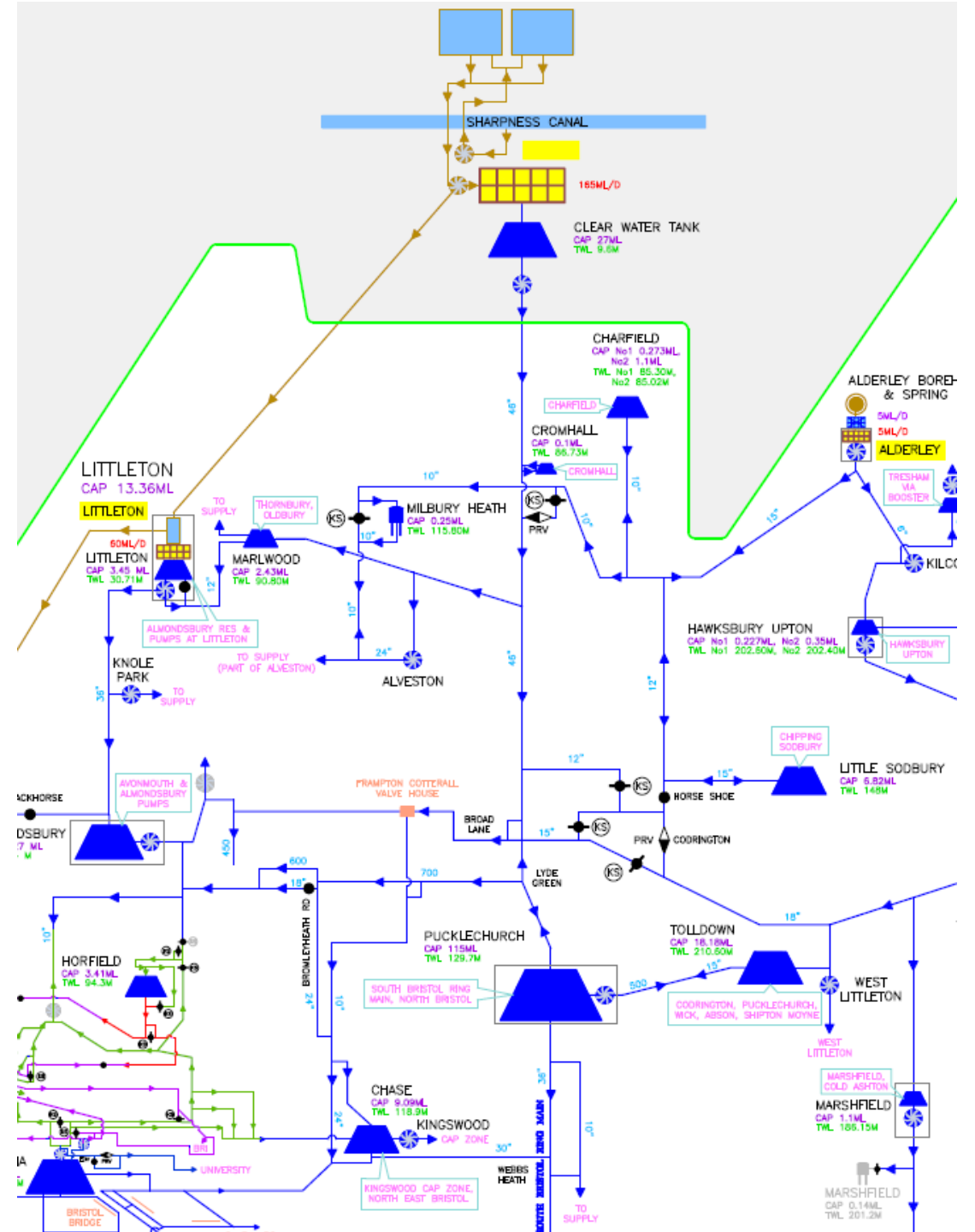
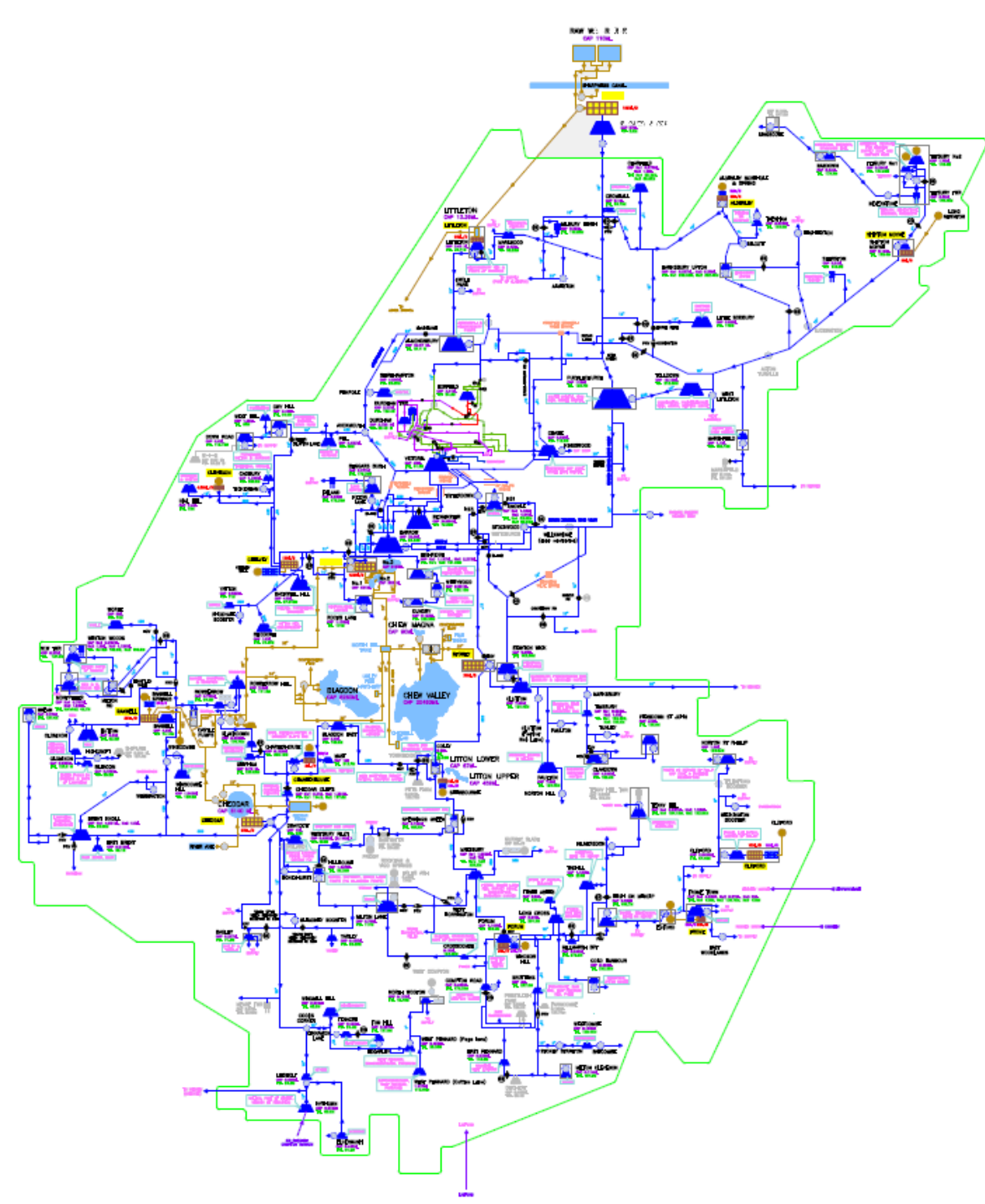


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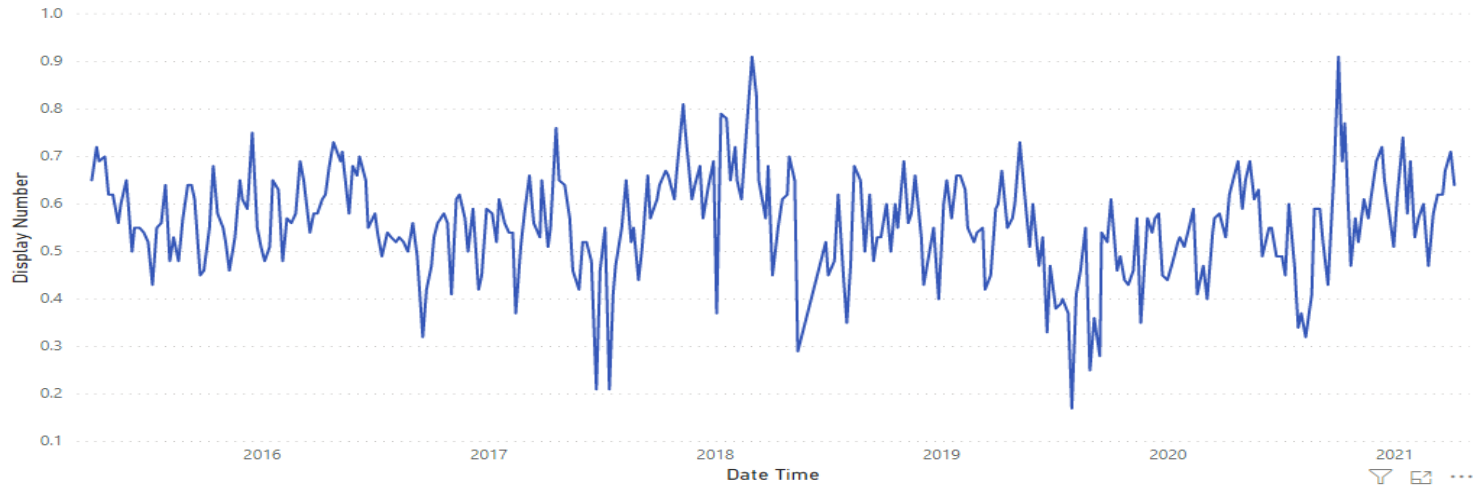
Part 2

Resilience Measures: distribution

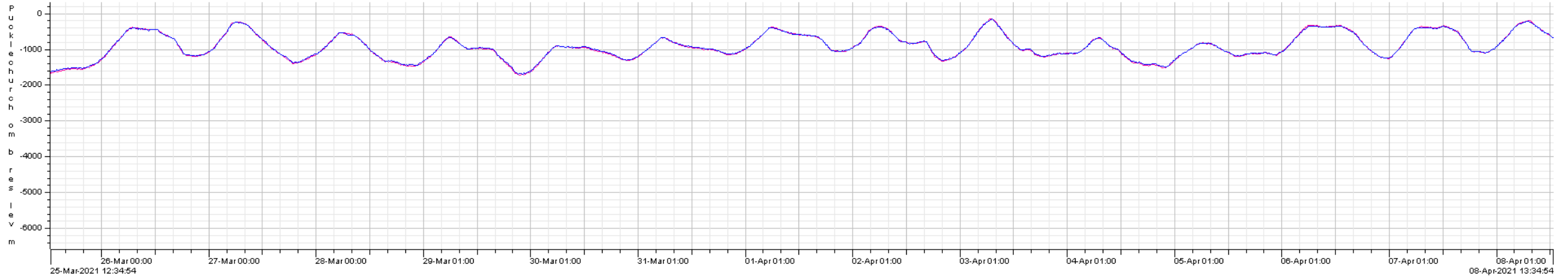


Pucklechurch Service Reservoir

Sample Point ID + Result ● PUCKCH1BOT Field Free Chlorine



Pucklechurch res levels



Water mains - dimensions and materials



Over 6,900km of
mains!





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When things go wrong!



Common complaints



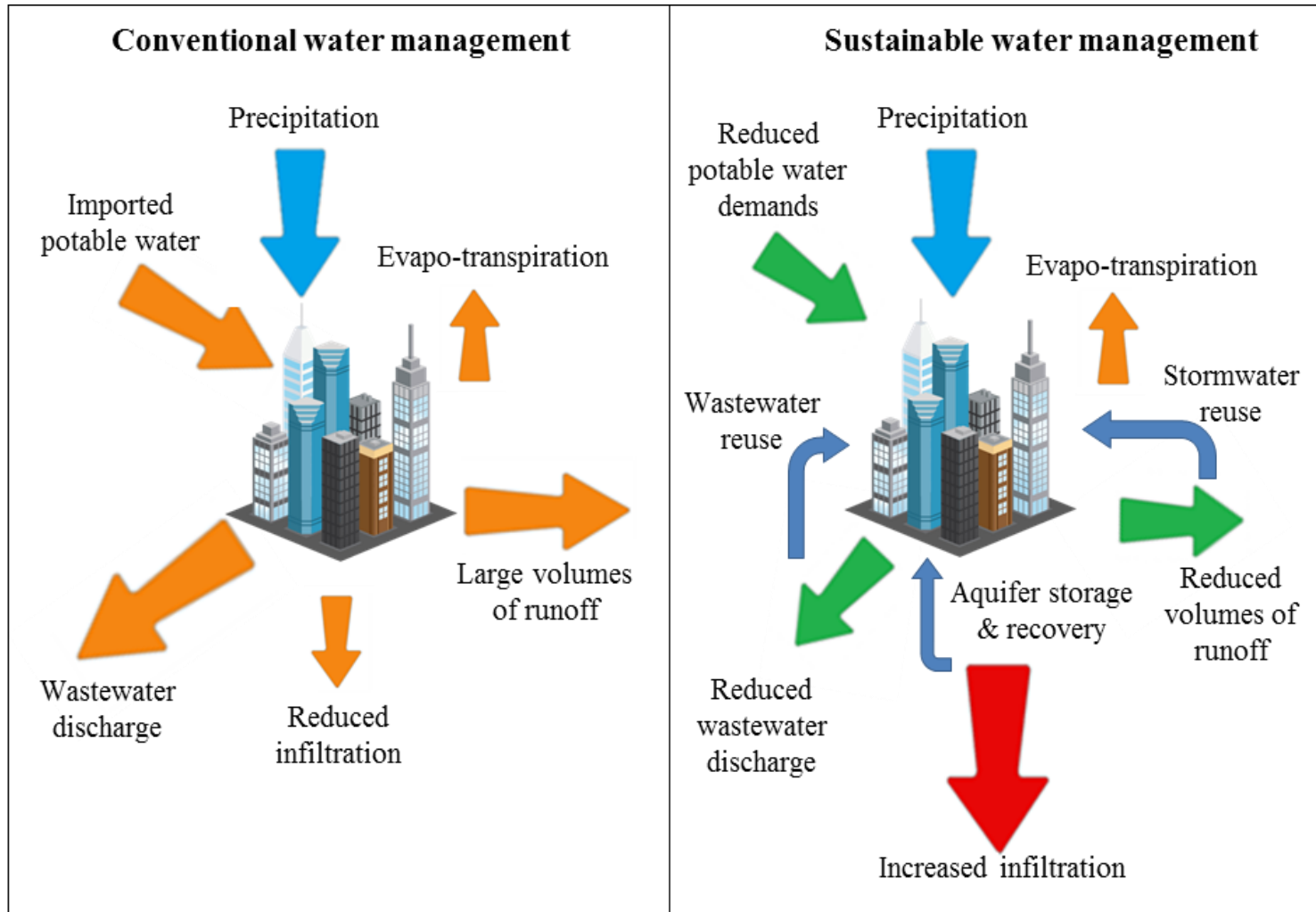


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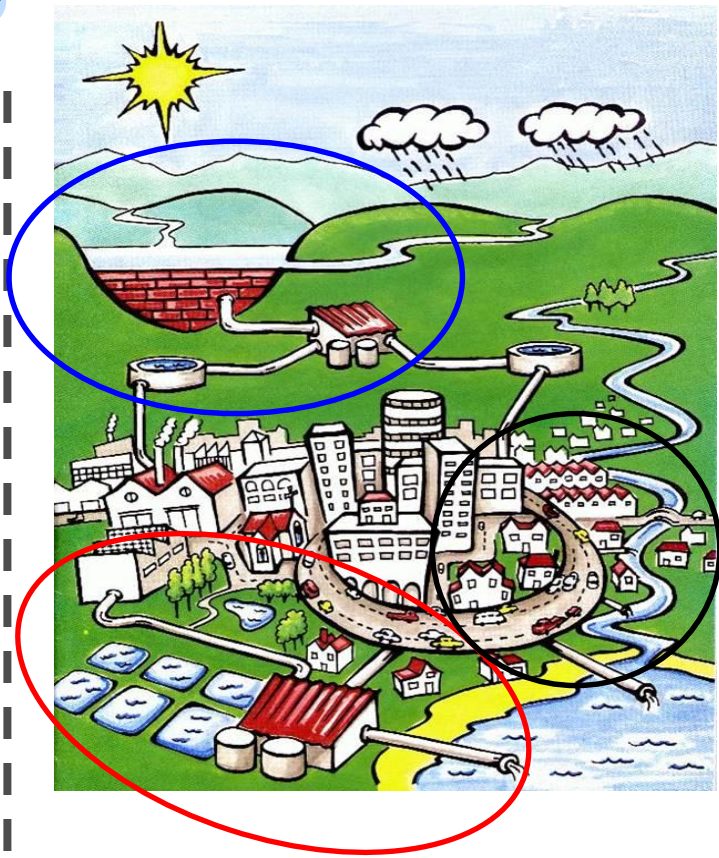
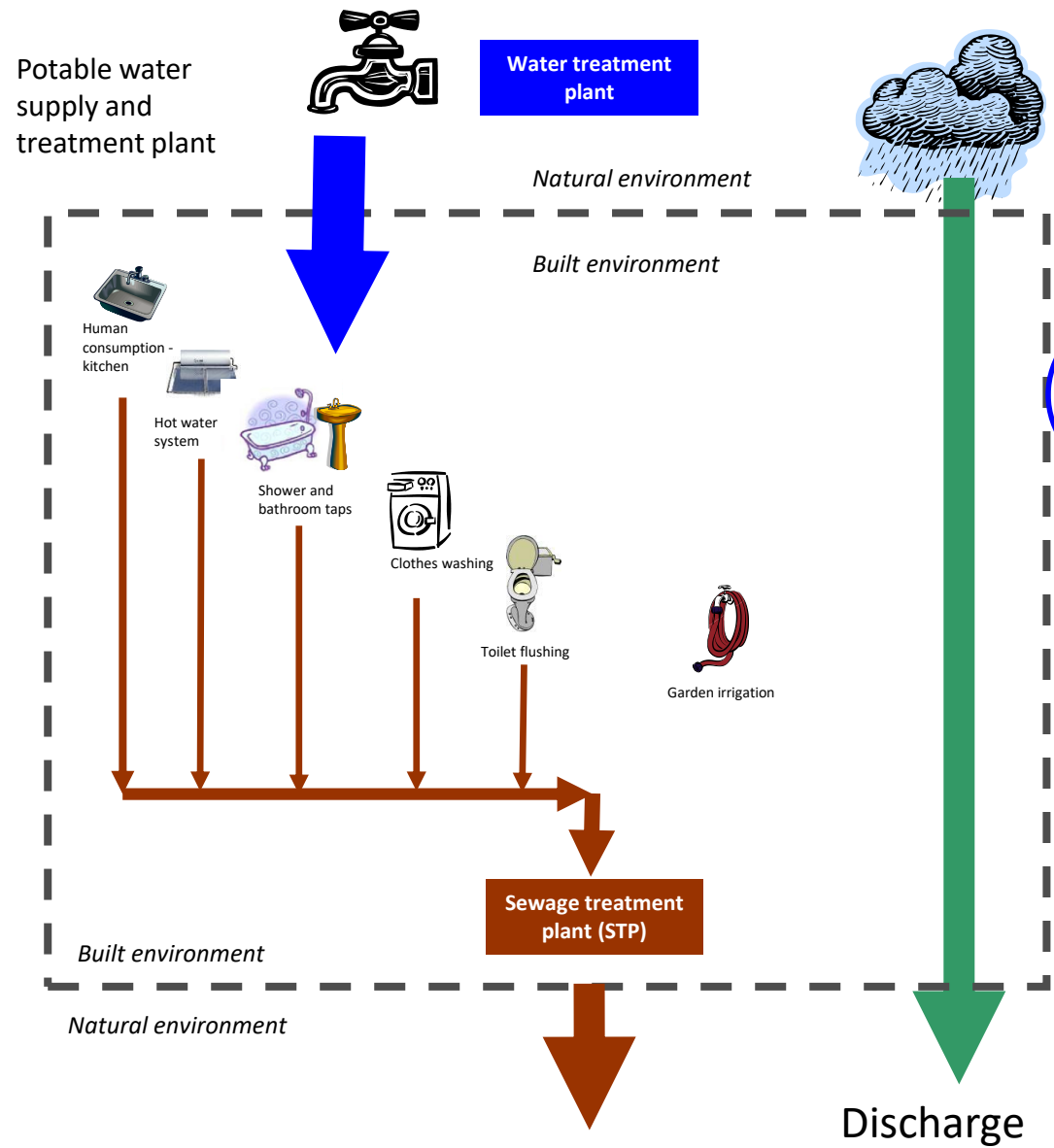


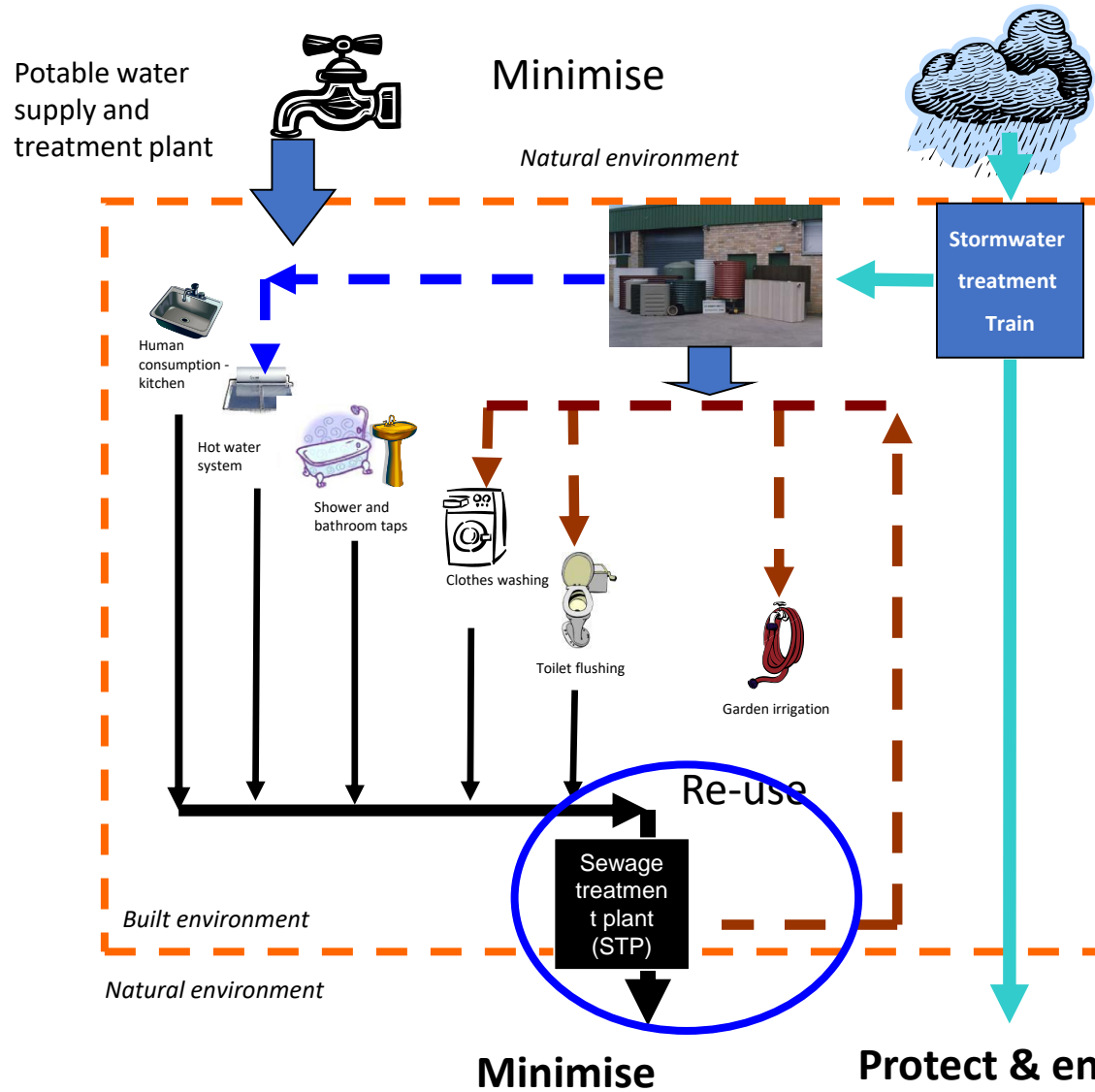
Conclusion

Resilience through Circular Economy

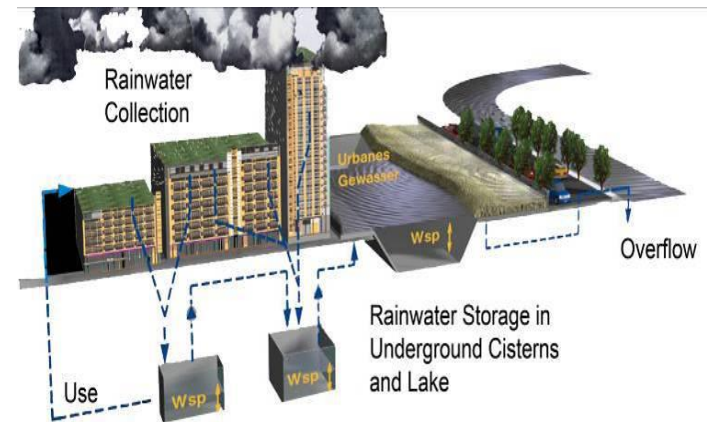


(Adapted from Hoban et al., 2006)





All water is an opportunity - not a threat





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End