

Our Rivers are Dying *(and It's Our Fault!)*

Basingstoke Loddon Rotary

9th February 2026

Brian Herbert

Photo: Humphrey Bolton





Dying? How do we know?

- River Invertebrate Numbers are Crashing
- All rivers in England and Wales

River Invertebrates? So What?

- River Invertebrates are the foundation of river life
- Larvae of insects, crustaceans, molluscs and worms
- CLEANSE the river by eating organic detritus
- At the start of the FOODCHAIN
- Provide evidence of the declining health of our rivers

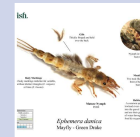


Crashing? How do you know?



- Anecdotal evidence
 - Clean car windscreens
 - Disappearing hatches
- Objective measurement
 - Riverfly Partnership monthly samples
 - Numbers dropping

Forty Years Ago – A Common Sight

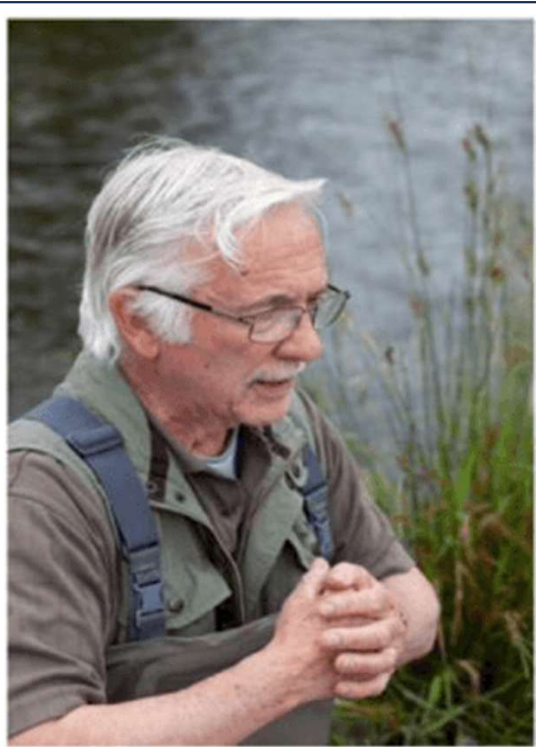


July 1979 – three-minute kick sample yielded 7000+ mayfly larvae



July 2025 – three-minute kick sample yielded 46 mayfly larvae

...and on the river Avon



Spring 2024 at West Amesbury only three species of mayfly totalling 29 individuals

Previously recorded at this site 14 species of mayfly totalling '000s of individuals

Dr Cyril Bennett, MBE, FRES



The Riverain Biome

- Is a unique ECOSYSTEM that is nurtured by the River which..
 - influences humidity level and temperature
 - nourishes plants and animals
 - provides shelter
 - and a place to breed

River Life is Rich...

- Plants
 - Bankside, margins, fast flowing
- Vertebrates
 - Fish, Amphibians, Birds, Mammals
- Invertebrates
 - Worms
 - Molluscs
 - Crustaceans
 - Insects



Aquatic Organisms Need:-



Places to
Breed



Untainted,
Oxygenated
Water



Security



Food

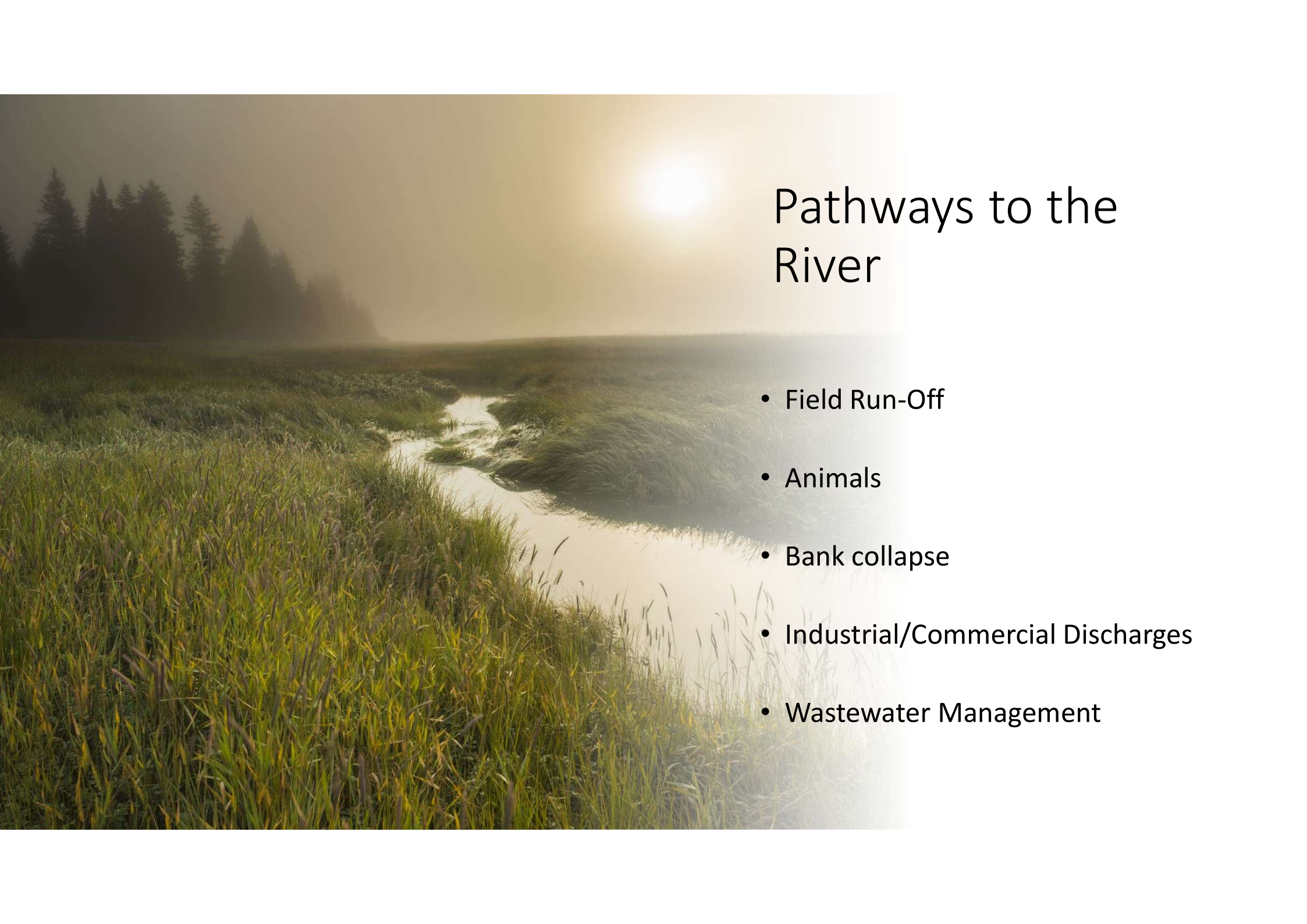


Threats to River Life

Toxins: KILL

Fertilisers: DEplete
Dissolved Oxygen

Silt: SUFFOCATES the
Riverbed

A landscape photograph showing a river winding through a lush, green grassy field. The sun is low on the horizon, creating a warm, golden glow and reflecting off the water. In the background, a dense forest of evergreen trees is visible under a hazy sky.

Pathways to the River

- Field Run-Off
- Animals
- Bank collapse
- Industrial/Commercial Discharges
- Wastewater Management

Pathway – Field Runoff of Nutrients

1950-1978 Increase in Usage

- Nitrogen(N) five-fold increase
- Phosphates(P) doubled
- Potash(K) level

Move from manure to granular

Take-up Rates: N (40-60%), P (10-30%), K (50-80%)

Much of the rest lost to run-off or locked in soil



Pathway – Field Runoff of Pesticides

Insecticide wash-off
range is 20-70%

Herbicide wash-off
range is 10-60%

Fungicide wash-off
range is 30-90%



Legal Action – River Wye

Nutrient Overload

Avara Foods –
Chicken Producer

Supplies Major
Supermarkets



Pathway – Animals (Dogs)

- Flea and Mite Treatments e.g. fipronil
- One dose for a labrador is sufficient to kill 60 million bees

(Credit: Univ Sussex – Prof David Goulson)



Pathway – Bank Collapse

Deposits bank material as
SILT

Releases locked-in
nutrients and pesticides

SILT clogs and
suffocates riverbeds

Climate Change – More
Flash Floods

Aggravating factor: Signal
Crayfish undermine banks



Pathway –
Industrial
Discharges

Waste Water Companies and
Other Commercial Enterprises

Licensed by Environment
Agency

Entirely Self-monitored

Nutrient Enrichment → depleted DO

(Muck Map – Friends of the Earth)

- 70% from agriculture
 - Run-off
 - Soil erosion
 - Factory Farms
- Raw sewage release
 - Climate change
 - Lack of Water Capture
 - Capacity lags Building
- Other
 - Domestic Sceptic Tanks

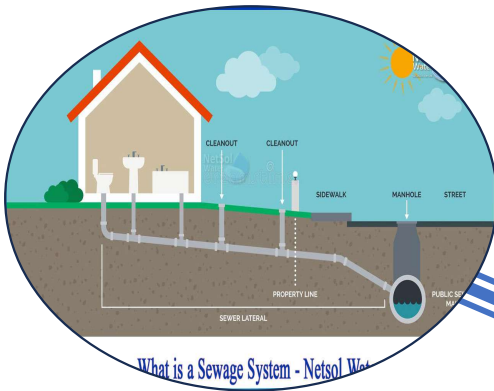


Legal Action – Davidstow Creamery

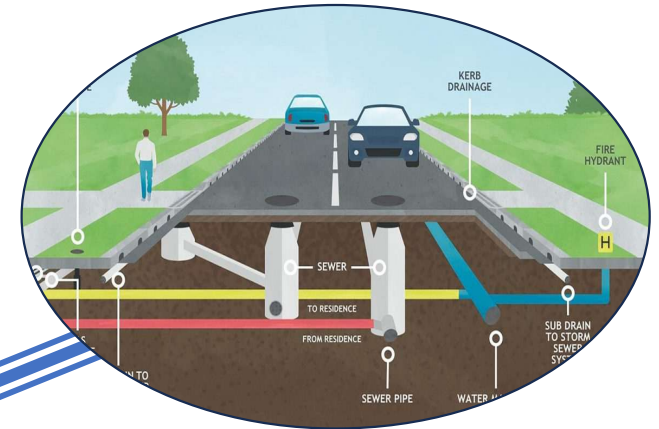
- Whey is major threat to rivers
- Creamery discharging whey effluent for at least six years
- Despite complaints by local groups took years to get them to court
- Fined £1.5 million
- Have since failed to enact all required controls
- Supply all major supermarkets



Waste Water Management



Domestic &
Commercial Properties



Storm Water



River System



Waste-Water
Treatment Plant

Capacity Lags Demand because ...



Water Industry Governance is Weak – it's independent monopolies



Water Industry Fragmented – No Strategic Planning



Housing Development Increases Water Company Income – so why spend money on extra capacity



Water companies heavily in debt – plead poverty



Storm Water management is essentially free so who cares?

STW – Sewage Treatment Plant

SPS – Sewage Pumping Station

Hours of untreated sewage

Site	Grid Reference	Spill Hours 2023	Spill Hours 2022
Selborne STW	SU7458033780	2132.75	416.84
Haslemere STW	SU8779032530	920.00	636.74
Bordon STW	SU8036036180	622.00	415.77
Huckers Lane Selbourne SPS	SU7440033900	413.75	2.17
Churt SPS	SU8529038080	12.20	12.90
Arford SPS	SU8529038080	0.50	0.93
Passfield (Bramley)	SU8529038080	0.00	0.00
Bentley SPS	SU8529038080	1127.25	595.90
Farnham SPS	SU8529038080	324.00	210.14
Waverley SPS	SU8529038080	139.50	118.18
Holybourne SPS	SU8529038080	93.75	0.00
Newman Lane SPS	SU8529038080	15.75	5.30

4090 hours

1700 hours

Chemicals in our waters

Following years of pressure from the WFA, WildFish and others to investigate the decline in invertebrate populations, Portsmouth University deployed ChemCatchers (passive sampling devices sitting on the ground) on the River Avon and River Wylfe ... for 2 deployment periods (spring and autumn) of roughly 4 weeks.

60 unique chemical compounds were detected of which 13 were plant protection products including pesticides, herbicides and fungicides ... including 10 metabolites (the term metabolite refers to a substance that a medicine is broken down (metabolized) by the body). Here's a list of what was detected ...

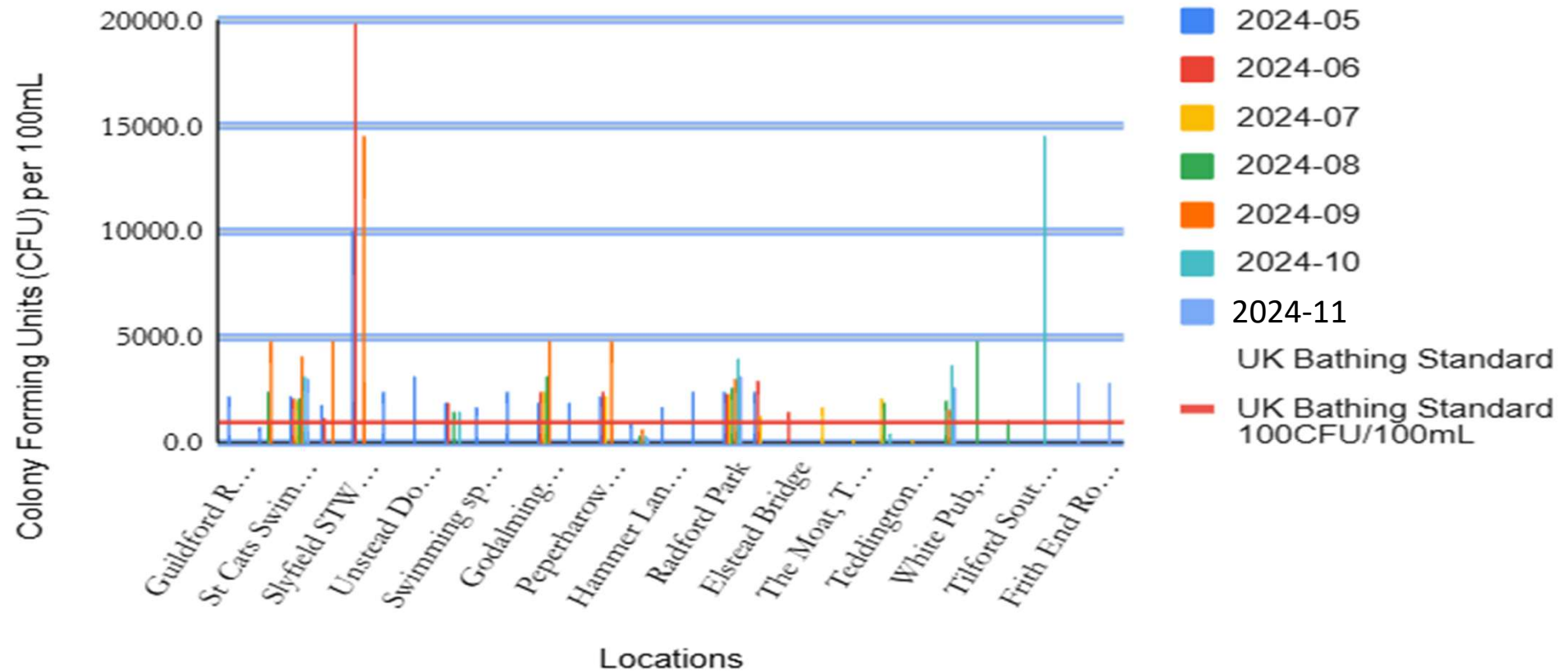
Atenolol - Beta blocker
 Aspirin - Heart and circulation
 Clozapine - Nausea
 Clonidine - Alzheimer's and Parkinson's disease
 Clozapine - Psychotic drug
 Clozapine - Beta blocker
 Clozapine - Herbicide
 Clozapine-desethyl - Metabolite of atrazine
 Cocaine - Metabolite of cocaine
 Clofibrate - Antilipemic agent (lowers cholesterol)
 Clozapine - Beta blocker
 Clozapine - Epilepsy
 Clozapine-10,11-epoxide - Metabolite of carbamazepine (Epilepsy)
 Clozapine - Antihistamine
 Clozapine - Antidepressant
 Clozapine - Blood thinning
 Clozapine - Opioid drug
 Clozapine - Metabolite of nicotine
 Clozapine (Diethyltoluamide) - Insecticide
 Clozapine - Nonsteroidal anti-inflammatory drug
 Clozapine - Antihistamine
 Clozapine - Heart and circulation
 Clozapine -
 Clozapine - Fungicide
 Clozapine - Fungicide
 Clozapine - Retrovirus
 Clozapine - Opioid drug
 Clozapine - Metabolite of nicotine
 Clozapine - Insecticide
 Clozapine - Heart and circulation
 Clozapine - Anaesthetic and psychiatric stimulant
 Clozapine - Epilepsy
 Clozapine - Metabolite of insecticide
 Clozapine - Muscle relaxant

Metolcarb Fragm 109 - Metabolite
 Naproxen - Nonsteroidal anti-inflammatory
 Nicotinamide - Skin diseases
 Norcitalopram - Metabolite of anti-
 Norcocain - Metabolite of pain relief
 Norcodeine - Opioid drug
 Norketamine - Metabolite of anaesthetic
 O-Desmethylnortramadol - Metabolite
 O-Desmethyltramadol - Metabolite of
 Oxcarbazepine - Epilepsy
 Oxycodone - Opioid drug
 Paracetamol - Pain relief
 Phenytoin - Epilepsy
 Propiconazole - Fungicide
 Propranolol - Beta blocker
 Propyzamide (Pronamide) - Herbicide
 Pyrethrin I - Insecticide
 Pyrethrin II - Insecticide
 Quidine - Insecticide
 Sulfamethoxazole - Antibiotic
 Sulfapyridine - Antibiotic
 Tapentadol - Opioid drug
 Telmisartan - Heart and circulation
 Thiabendazole - Fungicide
 Tramadol and/or O-Desmethylvenlafaxine
 Trimethoprim - Antibiotic
 Venlafaxine - Antidepressant

Chemical Pollution Analysis Rivers Avon, Wylfe, and Wey

- 60 unique chemical compounds detected
- 47 were pharmaceutical and personal care products
- 13 were plant protection products (e.g. herbicides and fungicides)
- 10 were metabolites, i.e. the product that remains after a medicine is broken down by the body

E.coli in the Wey : May 2024 to Nov 2024



Some Positives

- Since 2021 Environment Act, the EA has powers to impose unlimited fines without going to court
- Planning regulations now identify when porous surfaces must be used for roads and driveways
- Local Environment groups talking to farmers about strategies to reduce run-off impact e.g. settlement ponds



gettyimages

Credit: Geography Photos

What Can I Do?

- Retain as much rainwater on your property as possible – e.g. water butts, soak aways, French drains
- Reduce reliance on pesticides
- Get active – support efforts of your local river trust:
 - South East Rivers Trust (SERT)
- Pester your MP
- Boycott polluters



Photo: Humphrey Bolton

Thank You

Questions?