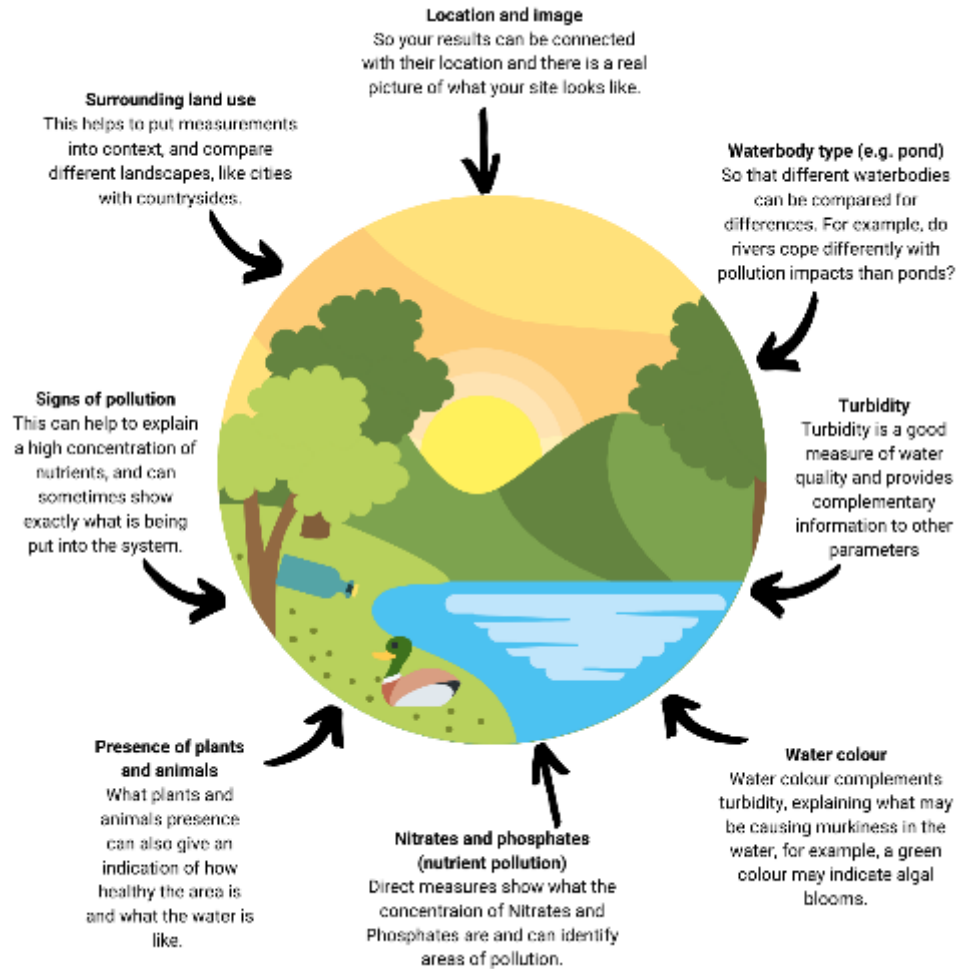


The Clean River Kent Campaign FWW Monitoring Programme

UPDATE

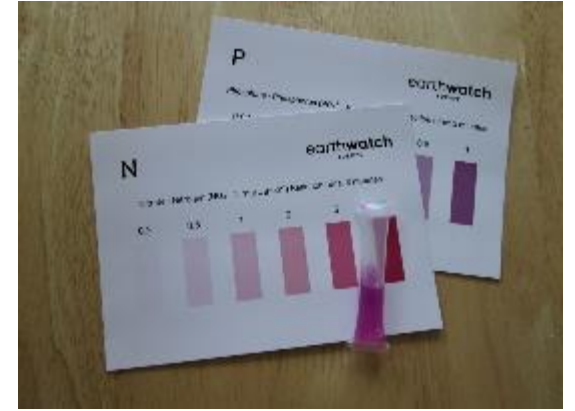
What we are measuring via Freshwater Watch



What's in the FreshWater Watch kits

A full starter kit contains:

- 1 Secchi tube
- Instructions
- 3 packs of 5 nitrate testing tubes
- 3 packs of 5 phosphate testing tubes
- 1 sample cup to use with testing tubes
- Nitrate and phosphate colour charts
- Pair of gloves (compostable)



The Method - Introduction

Collecting a water measurement has five sections:

1. **General Information:** providing context to the sample
2. **Ecological:** visual indicators of waterbody health
3. **Hydrological:** estimates of water level and flow
4. **Chemical:** tests for nitrate and phosphate
5. **Optical:** test for turbidity (cloudiness)



FreshWater Watch Datasheet


earthwatch
EUROPE

FRESHWATER Watch

Name: Date: Time:

Site name: Number of participants:

The exact location can be selected using an online map when uploading your results. Alternatively, record the site coordinates here: **Latitude (optional)** **Longitude (optional)**

 Please take a photo to go with your data.

The Method - Observations

Ecological

Freshwater body type

Pond Stream Lake River Wetland Canal Ditch Other:

What is the main land use within ~50m?

Urban residential Rural residential Industrial/commercial Urban green space Mixed agricultural

Arable agricultural Livestock Forest Grassland/shrub Other:

What is the main bank vegetation? (select all that apply)

Trees/shrubs Grass/small plants Bare soil Concrete/impermeable surface Other:

Is there any of the following on the water surface? (select all that apply)



None



Foam



Floating algae



Oily sheen



Slurry

Is the algae... (select all that apply)



- Land use is from the edge of the water to approx. 100 metres away.
- Bank vegetation is to 50 metres each side, and select all that apply.
- Foam/oily sheen can be natural or unnatural.
- Floating plants differ from floating algae in that they have distinct leaves and likely have a root system (even if small).
- If you can see a discharge pipe within 50 metres of your sampling point, please record it. For running waters this applies upstream of your sampling point, in still waters consider 25 metres in either direction.

The Method - Observations

Which of the following sources of plastic pollution can you see?

- Landfill site Bin Fly tipping Recreational

Are there any pollution sources in the immediate surroundings? (select all that apply)

- Urban/road runoff Agricultural runoff Outfall/pipe currently discharging

- Outfall/pipe not currently discharging Other:

Can you see any of the following water uses right now? (select all that apply)

- Fishing Swimming Boating Irrigation Public water supply Public use of bank

- Animal access Other:

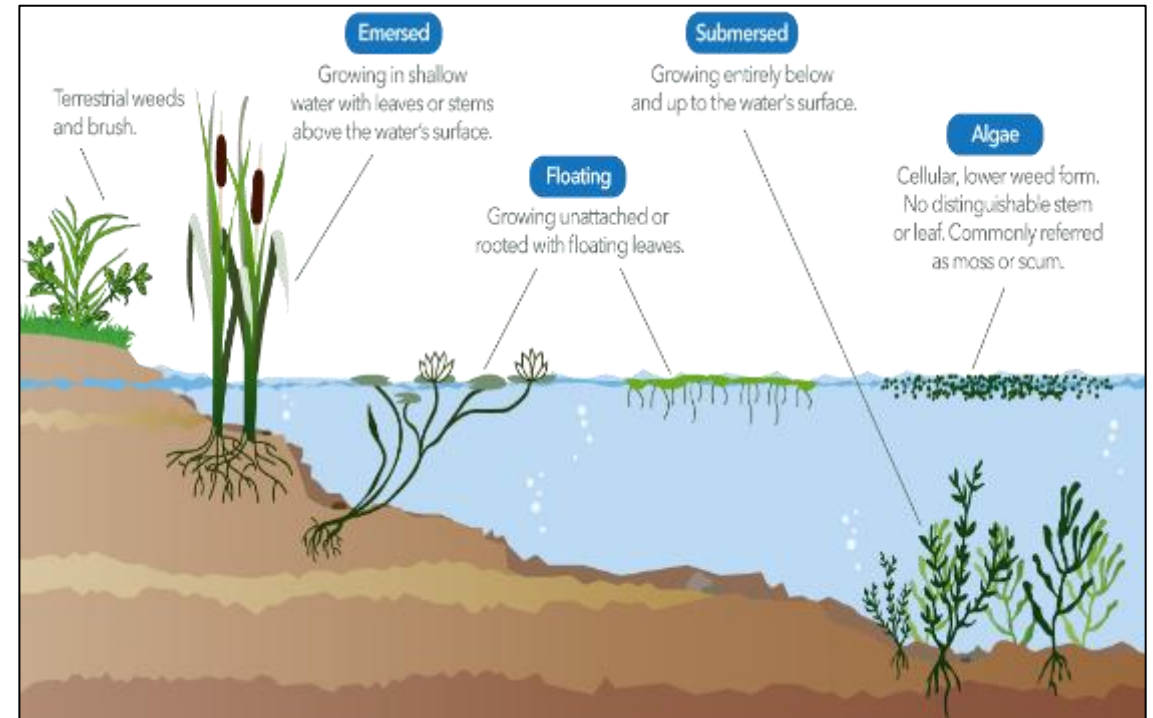
What aquatic life is there evidence of? (select all that apply)

- Plants below the surface Plants emerging from the water Floating plants Fish Frogs/toads

- Aquatic birds Aquatic mammals Dragonflies/damselflies Reptiles None Other:

Has there been any rain during the last 24 hours?

- None Light/showers Heavy/prolonged



The Method – Water quality

Hydrological

Estimate the water flow: Surging Steady Slow Still

Estimate the water level: High Average Low Dried up

Estimate the waterway width (by measuring the widest bank distance at your current location):

< 1m 1-2 3-5 6-10 11-15 16-25 >25

Chemical - Nutrients in parts per million (ppm)

Nitrate (mg/L): < 0.2 0.2-0.5 0.5-1 1-2 2-5 5-10 >10 No water

Phosphate (mg/L): < 0.02 0.02-0.05 0.05-0.1 0.1-0.2 0.2-0.5 0.5-1 >1 No water

Optical

Water quality – Secchi Tube (Turbidity): NTU (result will be between <14 (very clear) and >240 (highly turbid))

Estimate the water colour: Colourless Yellow Brown Green Grey White/milky

Other:

Notes (e.g. please list any aquatic mammals observed)

Water flow:

- Surging = faster than walking speed
- Steady = walking speed
- Slow = slower than walking speed
- Still = not moving

You can use a twig or small stick to measure speed, but be aware of wind speed and direction.

Water level:

Use a consistent factor to measure water level. (e.g. a tree, building, etc.) Get to know the site on repeated visits so you know what is normal.

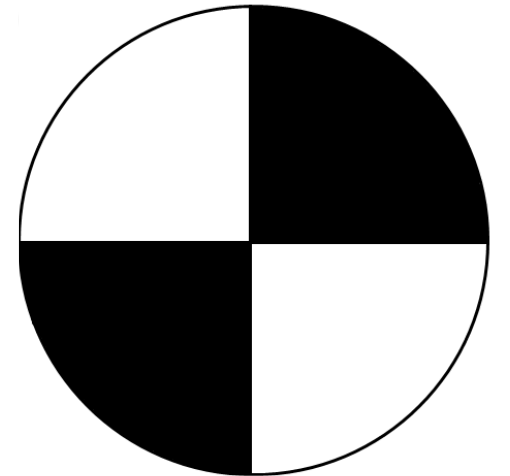
The Method - Secchi

Secchi Tube

Rinse your water collector out with the water you are sampling twice, then collect a sample.

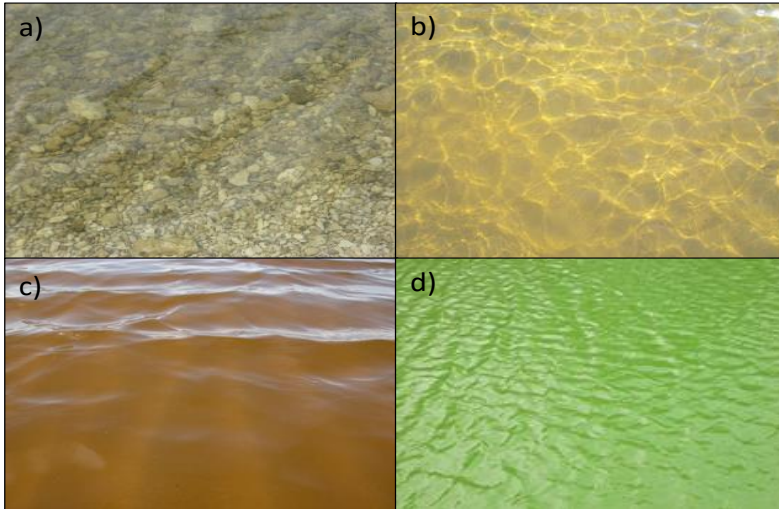
Gradually add water into the Secchi tube, looking directly downwards, until you can no longer discern the separation between the black and white triangles of the Secchi disk in the bottom of the tube.

The value that you recorded should be the highest value of NTU at which the Secchi disk was visible, e.g. if the disk disappears between the marked 100 NTU and 75 NTU, record 100 NTU.



The Method - optical

Water colour



Colourless: water appears clear, one sign of good water quality.

Yellow: may indicate presence of humic matter coming naturally from peat or decaying vegetation, it is typical in areas where there are large quantities of decaying organic matter.

Brown: may result from erosion of topsoil or high concentrations of organic matter from natural or human origin (brownification)

Green: may indicate high algae biomass and be an indicator of eutrophication.

Other: water could be almost any other colour, this could be from natural or anthropogenic causes, but if it seems unusual, you can report pollution events to your country water agency.

Clean River Kent Campaign volunteer citizen scientist results to date



FreshWater Watch [About](#) [Projects](#) [Our data](#) [Get involved](#) [News](#) [Funding](#) [My Groups/Events](#)

My Groups/Events

Welcome! If you belong to an active FreshWater Watch community group and have completed 'STEP 2' of your joining instructions, your group will appear below. If you are taking part in an upcoming WaterBlitz event, please follow the link that your event leader has shared with you.



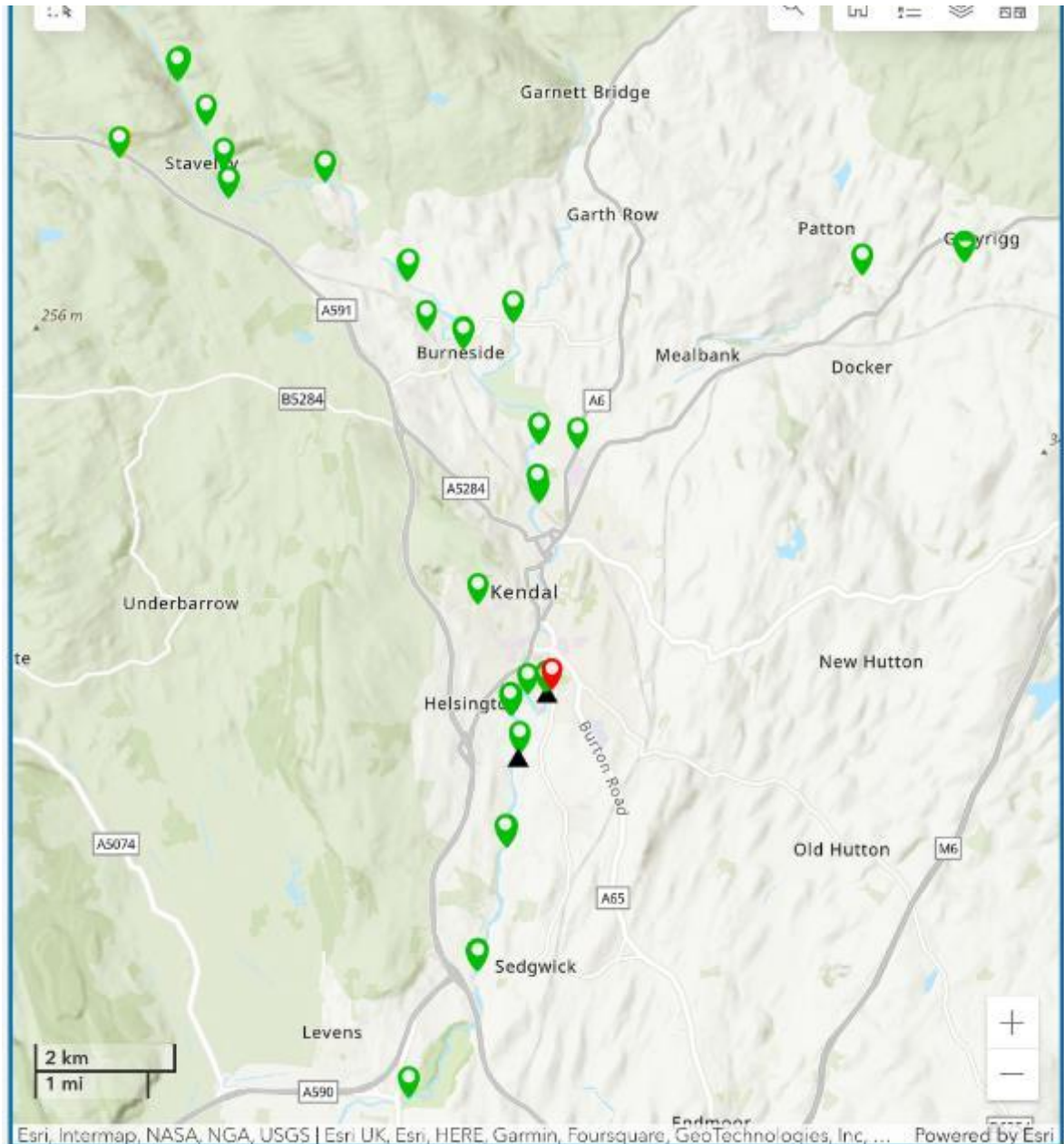
Clean River Kent Campaign (CRKC) - Kendal

Click the button below to access your group page. Here you will be able to download instructions, complete the research test, and upload your data.

[Visit Group](#)

Share this card

**61 surveys
up to 1st
November
2023**



**Freshwater Watch data
collection at 23 locations
along the river Kent and its
tributaries**



FWW testing locations and rationale

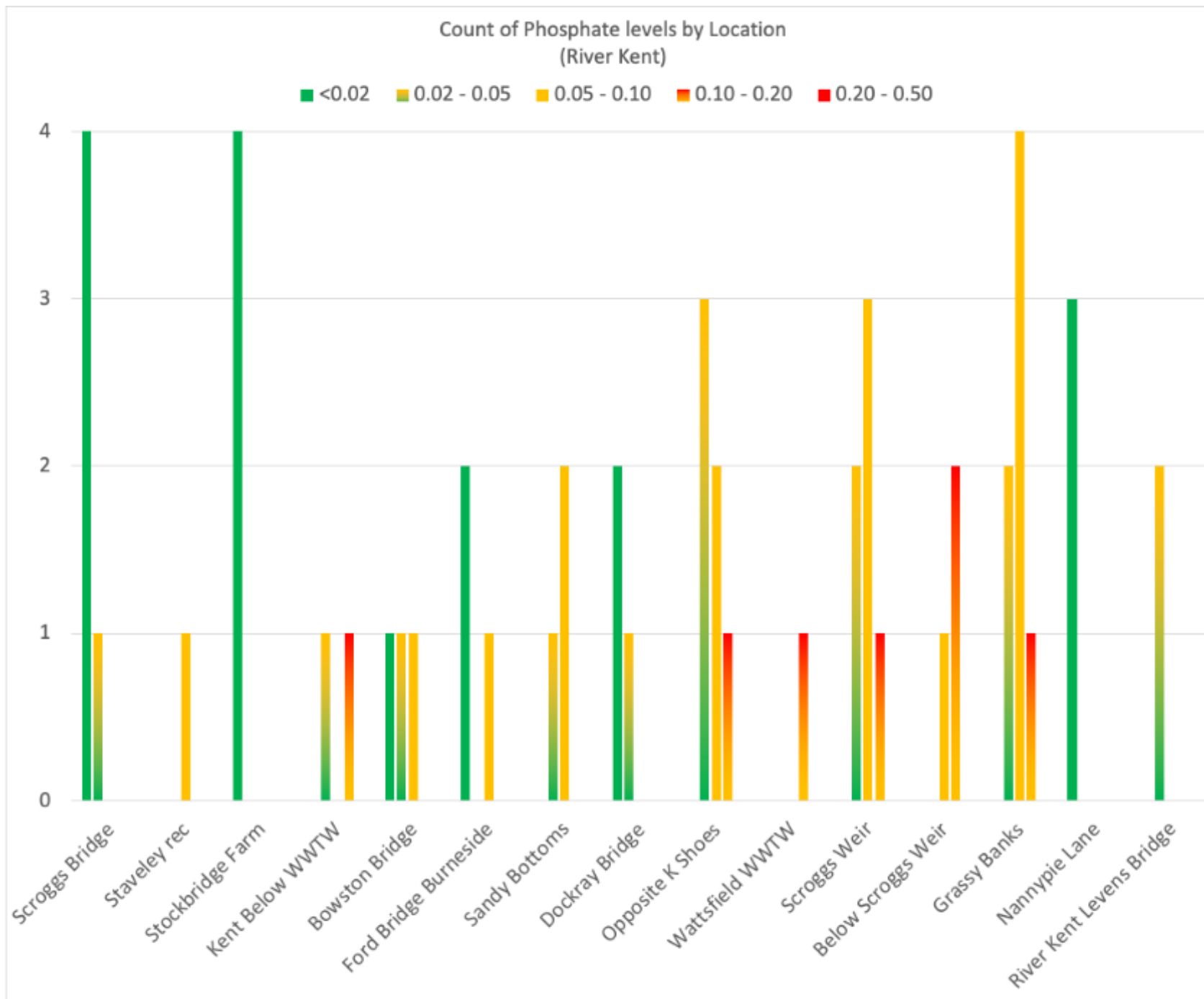
River Kent

1. Scroggs Bridge – above Staveley
2. Staveley Rec – popular swimming spot, previous testing
3. Stockbridge Farm – above Staveley WwTW
4. Dales Way - below Staveley WwTW
5. Bowston Bridge – above Burneside treatment works
6. Ford Bridge, Burneside – below Burneside treatment works
7. Sandy Bottoms – popular swimming spot, upstream of Kendal
8. Dockray Bridge – above Kendal WwTW
9. Opposite K Shoes – above Kendal WwTW
10. Wattsfield WwTW – immediately below Kendal WwTW
11. Scroggs Weir – Downstream Kendal
12. Grassy Banks – previous test site, popular swim spot
13. Nannypie Lane – below Sedgwick pumping station
14. River Kent Levens Bridge - further downstream

Tributaries

1. Blacket Bottom – above Lambrigg WwTW
2. Lambrigg Beck – below WwTW
3. Lower Lambrigg Beck – below WwTW
4. Gowan Deeps – below Ings
5. Sprint Mill – tributary into river Kent
6. Mint Bridge – tributary into river Kent
7. River Mint (Dock) – tributary into river Kent



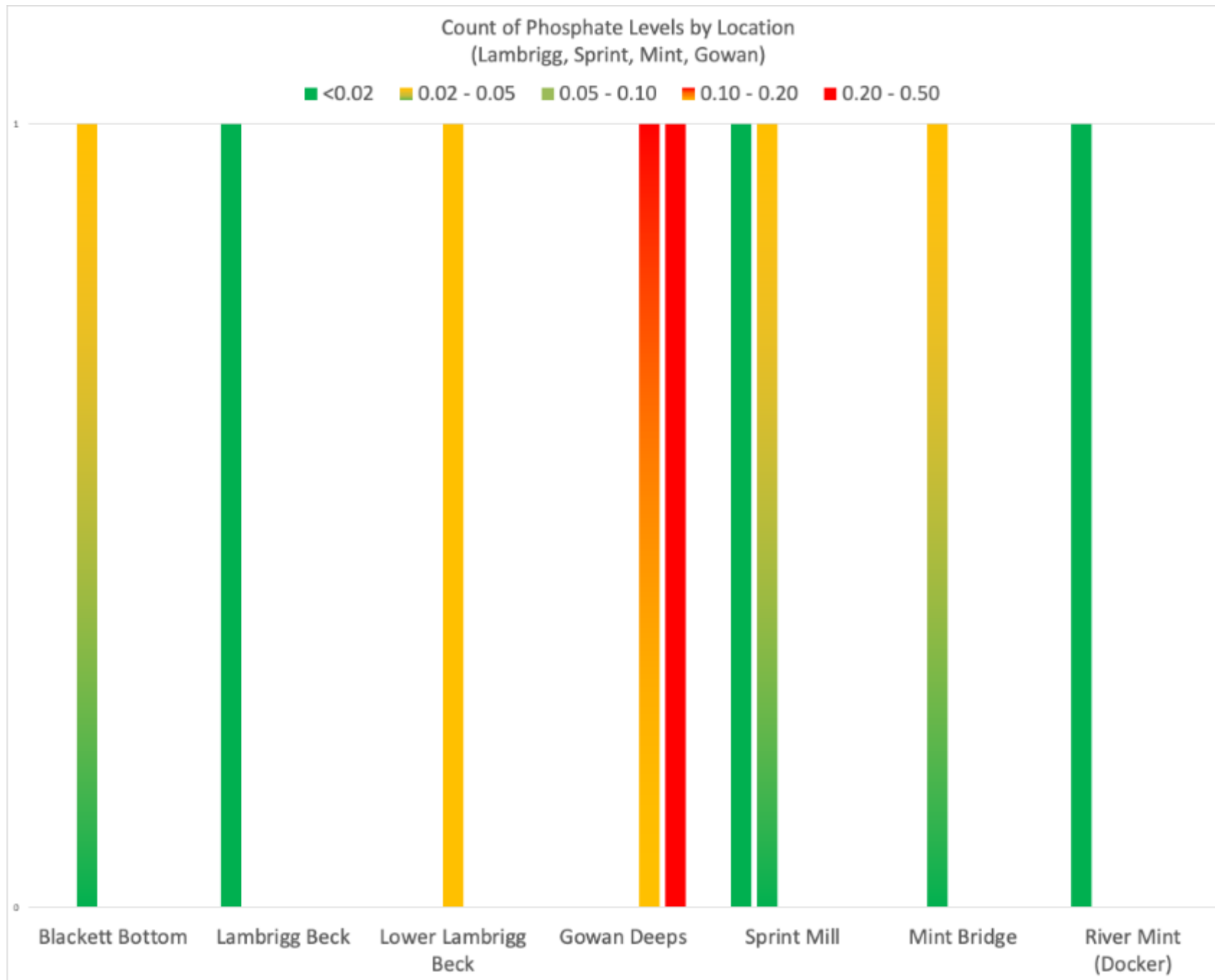


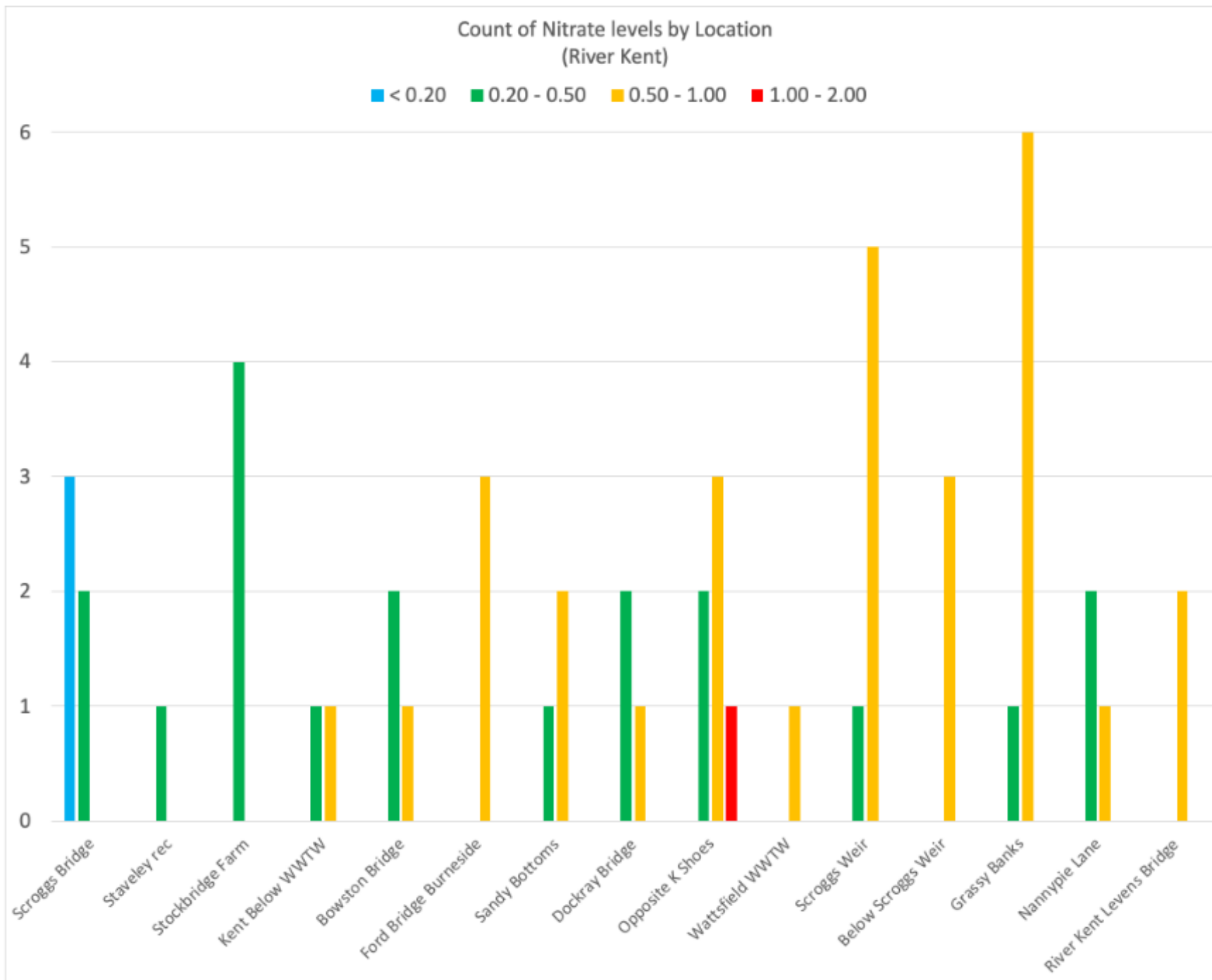
Phosphate levels to date by location along the river Kent

Sources of phosphates: primarily sewage, then agriculture?

Phosphate levels to date by location along river Kent tributaries

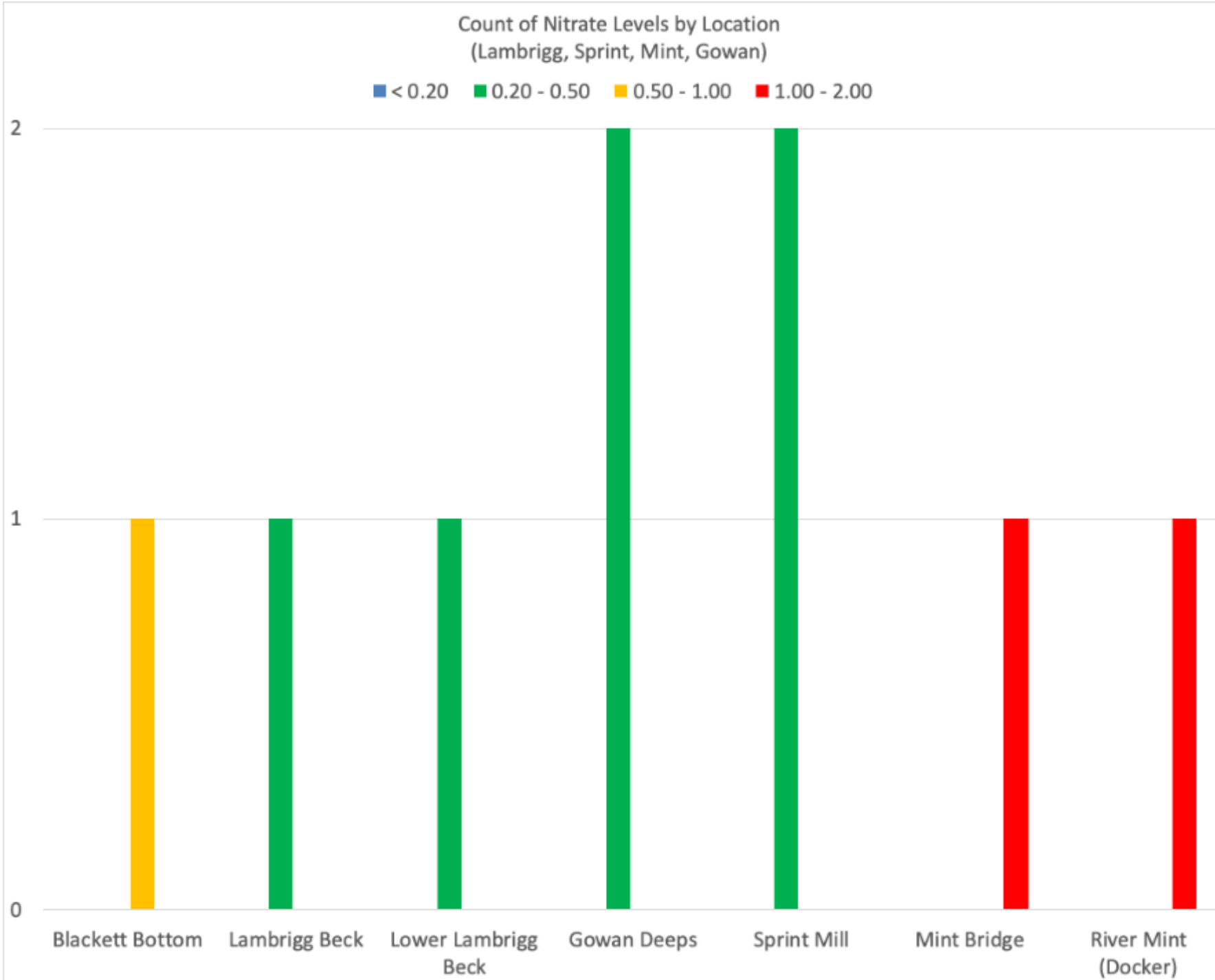
Sources of phosphates: primarily sewage, then agriculture?





Nitrate levels to date by location along river Kent

Sources of nitrates: 50-60% agriculture; 25-30% sewage (mainly WwTWs)



Nitrate levels to date by location on river Kent tributaries

Sources of nitrates: 50-60% agriculture; 25-30% sewage (mainly WwTWs)

Next steps

- Early days so far, only been collecting for 2 months – can't yet draw any conclusions
- Full analysis of 1st quarter of year data in report to be available early in 2024
- Hope to start additional testing in New Year, details to follow.

