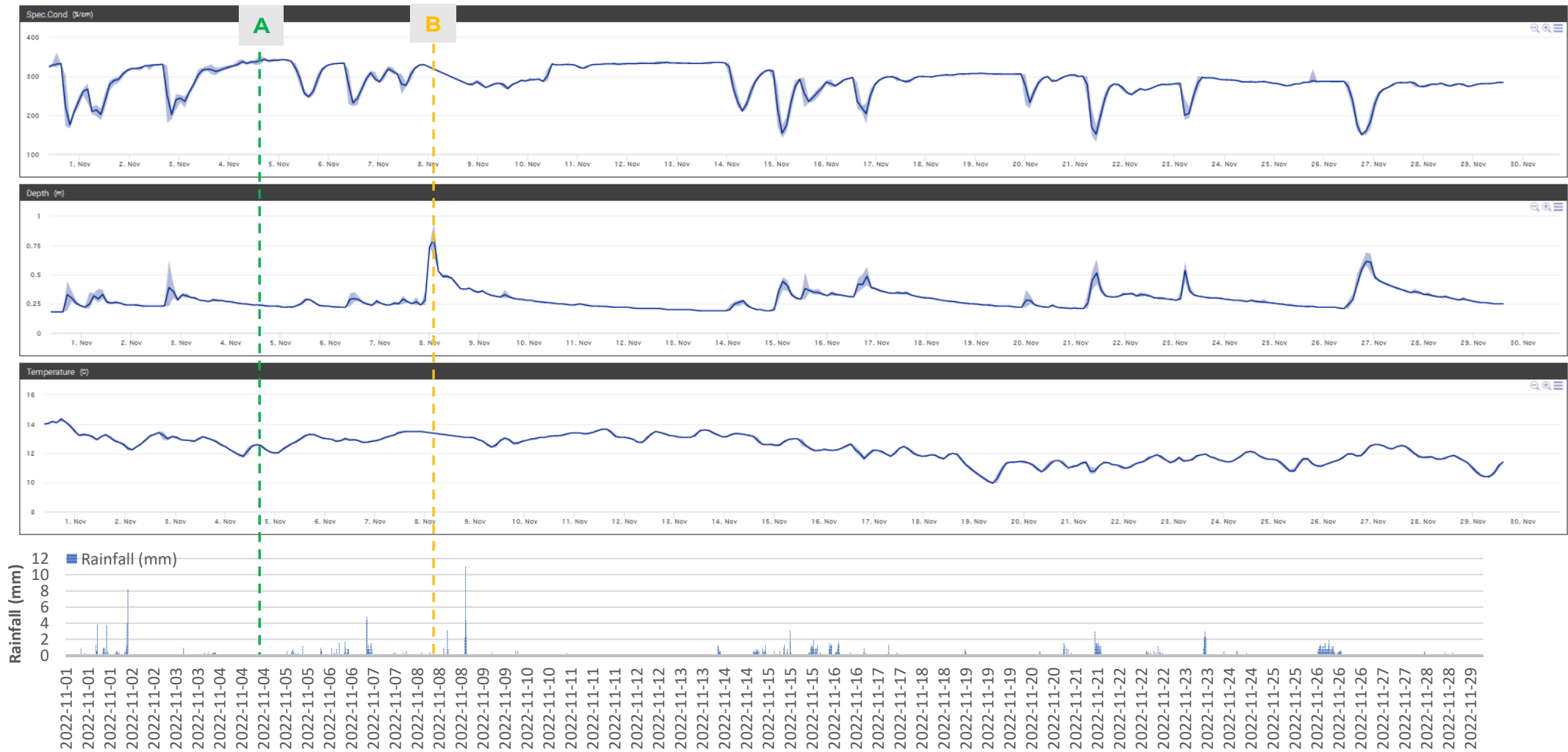




PRK Monitoring



The monitoring team at Westcountry Rivers Trust have been busy collecting data on the condition of the streams in the PRK area. Part of their work has involved installing an AT200 sonde at the bottom of the Tamerton Foliot stream. This sonde collects data on temperature, depth and conductivity and the data is logged in the sonde and sent via telemetry to a website. When the conductivity breaches the 310 $\mu\text{S}/\text{cm}$ mark, we get an alert. Here we run through last months data, highlighting the streams response to rainfall and how that affects the parameters being measured.

What are the parameters being measured?

Temperature: The temperature of the stream will vary seasonally and daily due to the Tamerton Stream being so small. The air temperature will influence the stream directly influencing how the temperature varies. Temperature is an important parameter to measure when assessing water quality, as it directly influences other measurable parameters. It also has a direct effect on the ecology of the stream.



PRK Monitoring

Depth: When assessing water quality, it is important to factor in depth. This enables you to create context for what you are observing in the other measured parameters. It is also useful measurement of how the stream reacts to rainfall and can be linked to potential flooding.

Conductivity: This is a measure of the total dissolved solids within a watercourse. In the Tamerton Foliot catchment there is low natural dissolved solids, so as a general rule an increase in conductivity is likely due to anthropogenic (human-related) input. An increase in conductivity could be due to a number of factors such as sewage entering the river, industrial or chemical discharge or farm run-off.

Rainfall: To match up the measured parameters to the local rainfall we have taken rain data from the Crownhill rainfall gauge and plotted it up to match the sonde data.

Data Commentary

Between 1st November and 29th November, the sonde triggered over 310 $\mu\text{S}/\text{cm}$ 741 times. The highest conductivity was recorded as 353 $\mu\text{S}/\text{cm}$. The daily variations in temperature can be seen as temperature rises during the day and drops at night, with the average temperature decreasing through the month.

Rainfall over the month totalled 286mm, compared to 248mm during October 2021.

A - Green dotted line: On 4th November at 15:30 we see the highest conductivity reading of the month, at 353 $\mu\text{S}/\text{cm}$. The water depth is relatively stable around this time and the latest rainfall had been at midnight at 4th November. Therefore it is unlikely that this rise in conductivity is related to rainfall or any associated run-off / first flush of pollutants.

B - Yellow dotted line: At 02:30 on 8th November we see the highest depth recording of the month, rising from 0.24m to 0.95m. This is due to 43mm of rainfall in the previous 24 hours. This increase in water depth is accompanied by a moderate decrease in conductivity due to the dilution effect of the increased amount of water in the stream.

This month there were no spikes in relation to tidal influence from Spring tides or high tides.

Although it is difficult to pin point exact pollution sources from the data, we are able to start observing how the stream is reacting to differing rainfall and dry spells. Observation is an important tool to go alongside this data so we urge all residents in the PRK area to look out for their streams and make sure to report any visual pollution. If you are interested to get alerts from our sonde via email when it breaches its baseline so you are prompted to go and take a look, please do let us know as it would help us to better understand the data.