Jim Smith

Well I don't know about you, you can certainly tell we've had some washout now, look at all the fairy snow down there.

Mark Davis

Yeah there is certainly a lot of foam down there which is probably due to the detergents that are discharged with waste water. The river is certainly very coloured so the rain has washed off a lot of sediment. The flow is a lot healthier than we've seen over the months during summer.

Jim Smith

If you'd have seen this a few days ago, it was pathetic it was like someone wringing out a wet rag…

Commentary

Jim Smith and Mark Davis are members of the Sussex Ouse Conservation Society or SOCS as its known, a voluntary organisation of local people working for the environmental enhancement of the Sussex River Ouse.

They've met up by the river at Barkham Mills, near Lewes, on a blustery October day, to discuss the state of the river which is swollen with the first substantial rain after the dry summer of 2005.

Jim Smith

…this water that's coming down now, it's not perfect, it's got a lot of run off, but it's doing a hell of a lot of favours… .

Mark Davis

Well that's right, it's good, it might not look particularly pleasant, all this brown water, but it's certainly what we need… .

Commentary

Mark Davis explains the importance of keeping a watchful eye on water quality in the Sussex Ouse, and its tributaries, to which Sea Trout return to breed every year.

Mark Davis

The quality of the water is a major contributory factor to basically what lives there. Although checks are carried out by other agencies, they are perhaps not quite on such a regular basis as our checks and if there is any change to the quality of the water, then within a fairly short period of time we can spot it and maybe alert other bodies to take action before it becomes a pollution incident.

Commentary

SOCS volunteers collect water samples, from a number of sites along the river on a monthly basis. These are then chemically analysed and checked to see whether they

fall within the safe environmental and legal limits for the river, or whether they pose a threat to the sea trout and other water life.

Mark Davis

We're monitoring 3 basic components, which the main contributory factor is sewage discharge or waste water discharge as they like to call it these days. The three components are ammonia, phosphate and dissolved oxygen. All of those have an effect on life in streams and rivers.

Commentary

Mark is responsible for analysing the water quality data and presenting it on the Society's website. While Jim is the SOCS field officer and Honorary Bailiff and has spent most of his working life on the river. They are discussing the latest water quality results for phosphate and ammonia.

Jim Smith

These are obviously the current charts you've just brought in… .

Mark Davis

This is the current graph for October which gives our latest results and what we are looking at the amount of measured phosphate over the period of the year. And we can see that from about April onwards we've seen a steady increase in the amount of phosphate… I don't know Jim what would we attribute that to?

Jim Smith

Just looking at it now there, it does cause an awful lot of concern and I'm just beginning to wonder whether this is just representing as a direct result of this dry weather and the lack of dilution on there. It almost seems as if something is discharging somewhere and certainly I'm not happy with the ammonia levels at all and it's a wonder to me there hasn't been a fish mortality in the height of ammonia there, but I think probably…

Commentary

As SOCS website manager, Mark realises the importance of presenting the water quality data in a clear and accessible manner, so that any problems that might arise can be interpreted easily and remedial action taken rapidly.

Mark Davis

When I took over the management of the website we'd always traditionally presented the information in basic tables with figures and it became immediately apparent to me that this was a boring way or an uninteresting way of presenting the information. It was difficult to follow in some of the cells of the table there were two figures one which was in brackets which for instance represented an average. It was very difficult to follow so I came up with the idea of a more interesting way by using graphs. Which instantly you can look at and either follow a trend or see a specific value.

Commentary

Jim agrees that the switch to graphical representation of water quality data has made it much easier to interpret.

Jim Smith

Well I think probably if you look at it in the graph form, I think It's probably a lot easier for people to pick up in terms of reading it as opposed to printing it out in columns or monthly reports. If people can see a year chart in other words from January to December and that particular chart is dealing with a particular area of the river, say here like in the Ouse or in the Uck, people can then look at it month by month as opposed to looking and having to look it up and say 'oh it's written up in so and so that in July the water quality was bad.'

Commentary

The data are presented on the website in two different visual formats, line graphs and bar-charts. The line graphs show how the level of the chemicals, phosphate for instance, varies over time at one particular location. Why did Mark choose a line graph to present this kind of information?

Mark Davis

Basically because we are looking at something over a fixed period of time say a year and each month we take a sample so we can actually see the rise and fall of each of the components we measure. It is easy to follow we can spot isolated incidents or we can spot trends. We can also point other people to look at our website and instead of trying to interpret a table they can see the information fairly quickly and easily themselves without any sort of effort to interpret it.

Commentary

With his extensive field knowledge, Jim finds it pretty straight forward to look at the line graph for phosphate, at the Clappers bridge sampling site over the year, and work out what's actually happening in the river there, knowing that over the summer there had been near drought conditions.

Jim Smith

When you are looking at the phosphate levels, you can see the peaks on there and you can see the troughs where it drops out, you can see starting over on the left of the graph as we are looking at it where it is comparatively low and then it starts to climb. It starts to correspond here with the predominant time when we've got particularly low flow in the river system and virtually no flow there at all, so that it does represent the three months of the year when it was at its driest peak so therefore you are going to get that much higher readings. In my opinion, that's what the problem is.

Commentary

Bar-charts on the other hand are used to show the yearly average levels of monitored components at all the different sampling sites.

Mark Davis

We use bar-charts because we are trying to present a comparative view of different locations that we actually sample from and also the fact that the information we are trying to present is based on an average which is laid down within an EU directive but the basic gist is the fact to present comparative data for different locations and each of the bar-charts that we produce in our monthly report are for the three different components that we measure but compare them over so many sites.

Commentary

From the bar chart Jim can see that the yearly averages for phosphate at two of the monitoring sites are over the acceptable levels and thus pinpoint an area that might need investigating further either by SOCS or other environmental agencies.

Jim Smith

I think predominantly there, there is a discharge that has come in and usually when you start to get phosphate levels up like that it usually means its one of two things – it could possibly be a farm discharge somewhere or it could be from a works. I think to myself 'where are all the places up there that are likely to cause a problem?' Having a graph like this, this is where it's useful to be able to look at that and if you want to present that in any form of evidence you can say to yourself, 'something's going on up there and somebody needs to go and take some sampling.'

Commentary

Whereas a peak on the line graph might be a one off incident at a particular location, a high average level over the year at that location, shown on the bar chart would definitely be cause for concern.

Mark Davis

For the line graph, we are presenting the variation of the three different components over a period of time for one location. For the bar graphs we are presenting comparative information for each individual chemical component over a number of sites. So each bar on the graph represents a different location, but each bar is for the same measured component.

Commentary

There seems no doubt that the move to graphical presentation of water quality data, about the Sussex Ouse, has helped SOCS to communicate effectively, both with the interested public and the various agencies concerned with environmental protection.

Jim Smith

Well I think it's very useful, because it does give people an awful good chance of being able to look up on the website and see exactly what their particular area of stream or area of river is carrying, it's carrying nitrates phosphates ammonia, things like that, and it gives them some idea of the environment in which they are actually living.

Mark Davis

I think it will make people look twice. Somebody could just look at a table and instantly go away. But graphs if we present them month on month, then if people are interested in that they can come back next month and see how things have changed. Or actually put graphs side by side and actually see directly, compare them directly and if we need to make a point or publicise or even campaign about something we can tell the bodies we are campaigning against or the bodies that are helping us to actually look at our website and there it is in colour.