

Response to Reviewer 2

I am not convinced that the results represent high flow conditions as the authors also doubt on (p. 3279, l. 21,).

We have never thought that our results are valid for high flow situations. The difference between high and low flow is something that we discuss in the Discussion.

The number and quality of references seem appropriate except for a missing reference to the international standard method for measurement of alkalinity. End-point titration to pH 5.6 (p. 3266) seems high.

This is correct, the ISO standard is titration down to pH 5.4. We have used the Swedish standard which is titration down to pH 5.6. The practical difference would be of minor importance. The sentence is now changed to: Alkalinity was measured according to Swedish standard by end-point titration with HCl (0.02 M) to pH 5.6 (international standard is pH 5.4 (EN ISO 9963-2)).

The SI unit for conductivity is Siemens per metre (Sm⁻¹) and the unit presented on p 3274 should be corrected.

As suggested we have now changed the unit to SI.

The open circles and grey dots are difficult to locate in Figure 1.

The grey dots are removed and replaced with X. The figure legend is changed to: Sites marked with X are samples which were also analyzed for FLD, %HS and C:N, see Methods for more details.

In Table 3 the groups 1), 2) and 3) defined in the text could be referred to as 1), 2) and 3) in the table and the index 3 on “polydispersity” lack explanation.

The groups are now added to the table. The index 3 was a mistake on our part, the index is now deleted.

Specific comments

Why are the samples filtered through 0,22 and 1,2 µm filters? Generally 0,45 µm filters are used. The difference in pore size may influence the results and then the possibilities to compare results, comments?

The difference in filter pore size reflects to some degree traditional differences at the two laboratories. We do not believe that this significantly affects our results.

Technical corrections

p. 3263, l. 16 ...and biotic process

Is now changed to: ...and biotic processes...

p. 3265, l. 17 What little arable land there is

Is now changed to: The area of arable land is small (1.6%) and lies downstream...

p. 3266, l. 10 (Ivarsson, 2000) is not in the reference list

This is a personal communication, that term is now added to the text.

p. 3266, l. 17 ...performed with one month

Is now changed to: ...performed within one month.

p. 3276, l. 11 ...20% of are ...

Is now changed to: Mire surface coverage could also explain over 20% of A420, SVA, HS%, SAR and FLD.

p. 3277, l. 7 ...delete “as the fish swims”

The phrase is deleted.

p. 3278, l. 22 ... along O ... (outlet of the catchment?)

Is now changed to: There were significant downstream increases in pH along O (using all sites) and the branch O1, while A420 decreased in O and TOC, Fe, C:N, A254 and A420 decreased downstream along O1.

p. 3278, l. 24 ... many NOM character ...

Is now changed to: ... many NOM characters ...

p. 3279, l. 16 (Pettersson, 2002) is not in the reference list

This is a personal communication, that term is now added to the text.

p. 3284, l. 20 ... less than <10% ...

Is now changed to: ... less than 10% ...

p. 3284, l. 26 ... does exist derives ...

Is now changed to: ...does exist derives

p. 3290, l. 15 adjust

The indentation is removed.