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Interactive comment on “Increasing iron concentrations in surface waters – a factor behind brownification?” by E. S. Kritzberg and S. M. Ekström

Anonymous Referee #1

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This interesting paper addresses an issue that has high relevance to the readership of Biogeosciences, and which usefully draws attention to the fact that the trend for increasing water color (observed widely around the world), may include a contribution from rising iron concentrations. Although some attention has been drawn to this issue by Neal et al (2008) in the past, the current paper contains a particularly substantial dataset from 30 rivers dating back to the early 1970s, and novel new insight and analysis that takes the subject further forward.

This is an issue which has been almost completely overlooked in recent studies, and therefore this paper represents a timely contribution to the debate on the causes of

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rising water color trends.

The title and abstract are clear and accurately describe the contents of the paper.

The scientific methods and assumptions are clearly outlined and appropriately based. The description of the methods would be sufficient for subsequent researchers.

The paper does propose some novel concepts: It is interesting to note that the authors suggest we can attribute the rising color trend to redox mediated events, particularly since the current issue of Nature Geoscience (vol 4, p895) contains an interesting paper describing a mechanism by which drought-mediated redox changes can trigger a cascade of events leading to enhanced decomposition even under a return to anaerobic conditions.

Overall this is a high quality paper with a good standard of writing and language that is fluent and precise. With its useful insights into the browning of aquatic ecosystems, this paper would make a very useful contribution to the literature.

Interactive comment on Biogeosciences Discuss., 8, 12285, 2011.

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