

## ***Interactive comment on “Local and regional impact of anthropogenic drainage on fen contiguity” by A. H. van Loon et al.***

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### General comments

This discussion paper is a valuable contribution to solving problems fen regeneration in densely populated areas, such as The Netherlands. I find the mix of quantitative and qualitative hydrological analyses very convincing. It is also clear that the present work builds on much experience in the past, not only in The Netherlands, but also in the Biebrza area in Eastern Poland. The central theme is on local draining elements may sometimes frustrate regional restoration measures and they are sometimes not easy to detect in the field. In their case the closing down of groundwater abstraction facilities for the public water supply had much less effect on restoring the groundwater flow to

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the fens then had been anticipated some twenty years ago. That is rather bad news for the regional authorities that once took that decision. The authors suggest that regional measures that enhance groundwater flow to the fens be assigned a lower priority than local measures that support the transport of available upwelling groundwater up to the fen surface. Although this may seem a logical conclusion, I do not support such reasoning in general. It may be a strategically sound decision to first stop the regional threats (if there is political support) if local influences cannot be changed (for instance due to local owners that do not want to cooperate) within a short time span, but on a longer time span they can be purchased with relatively little money. What would the authors suggest if local measures would have priority and later it turned out that regional influences, which usually are very costly to remove, frustrate the fen regeneration? So, I think the conclusion should be that you identify both local and regional influences as good as possible and then discuss with different parties what would be the best solution to the problem during the immediate future and also on the long run.

### Detailed comments

1) Page 4383, line 25. I doubt if Boyer & Wheeler (1989) is a good reference here. I would suggest to insert Lamers his work here. 2) Page 4388, line 18. reference is made to a high load of tritium in alien surfacewater. May be some explanation is needed here. Table 1 shows that tritium content of alien surface water is 45 TU. In figure 2 shows a number of 7499 units. What happened, someone dropped an atomic bomb again in the atmosphere? And why is the concentration in alien surface water then 45 and not > 45 TU? 3) In figure 3 the notions a,b and c should be indicated in the figure. Now you can only infer what is meant on the tiny text on the y-axis.

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