Biological filtration of treated wastewater by Daphnia: An alternative for technical filtration, or an addition?

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Constructed wetlands convert treated wastewater into usable surface water with abundance of “natural life”

The “Grickleback” process:
- a combined system to reuse treated wastewater for nature enhancement
- Daphnia keep the Daphnia pond clear and remove faecal coli bacteria effectively
- no fish in the Daphnia ponds: optimum for growth of Daphnia
- the constructed wetland transfers the waste water in “fish water”
- it is about Growing Sticklebacks or other fish in a food chain approach
- finally a “natural” pond. Suitable feeding area for birds, spawning area for fish

Three Mesocosms: Horstermeer, Grou and Empuriabrava

STP Horstermeer, The Netherlands
Rather high loaded activated sludge process
Ongoing research project Technical filtration
Feed also filtered waste water
Food web studies, harvesting of Daphnia

STP Grou, The Netherlands
Very low loaded activated sludge (oxidation ditch)
Full-scale Daphnia ponds
“Understanding the full scale process”
Disinfection

STP Empuriabrava, Costa Brava, Spain
Very low loaded activated sludge (oxidation ditch)
Full-scale Daphnia ponds
“Understanding the full scale process”
Food web studies, harvesting of Daphnia

This research project is part of PhD study of Ruud Kampf: experiments 2007 - 2008