Groundwater impact on environmental flow needs of streams in sandy catchments in the Netherlands (Hendriks et al 2014) [1]

During recent years, water managers and water users in the Netherlands experienced water shortages in numerous streams. Besides low rainfall amounts and high temperatures, anthropogenic alterations to the groundwater system are also responsible for the reduced baseflow in streams. These alterations may reduce resilience and increase a risk to streams as more droughts are expected in the Netherlands due to climate change. We propose a methodology to assess the impact of groundwater-related alterations and climate change on baseflow and environmental flow needs (EFN). Application of this methodology for two sandy catchments showed that, under average meteorological conditions, baseflow in the main streams still meets the EFN requirements. During dry years, baseflow is probably insufficient in the upper parts of the catchments. Anthropogenic alterations show a significant impact: drainage caused 25–40% baseflow reduction, groundwater abstractions caused 5–28% and climate change will potentially cause an additional reduction of 33–70% by 2050.

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Link to DOI:

http://dx.doi.org/10.1080/02626667.2014.892601 [2]

Links
[1] https://reformrivers.eu/groundwater-impact-environmental-flow-needs-streams-sandy-catchments-netherlands-hendriks-et-al-2014
[2] http://dx.doi.org/10.1080/02626667.2014.892601

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