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Shale gas: Surface water also at risk

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Researchers are focusing on the effects of shale-gas development on groundwater quality (see *Nature* **498**, 415–416; 2013). Surface-water contamination is also a risk.

Rivers and streams near shale-gas extraction sites are threatened. Reduced streamflow causes sediment to accumulate, and released wastewater contains chemical additives, organic matter, metals, radioactive materials, nutrients and dissolved solids (S. Entrekin *et al*. *Front. Ecol. Environ.* **9**, 503–511; 2011). Each gas well needs between 7.5 million and 26 million litres of water a day. Resulting water shortages can affect aquatic habitat and agricultural production, and waste treatment can raise the concentration of pollutants such as chloride or total suspended solids in nearby surface waters (S. M. Olmstead *et al*. *Proc. Natl Acad. Sci. USA* **110**, 4962–4967; 2013).

More data must be collected on the risks of shale-gas extraction to surface-water quality, to support contaminant monitoring and removal.

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