

## Reviewing best practice in the delivery of good drinking water quality using a prevention-led approach

### BACKGROUND

The aim of this project was to collate evidence related to prevention-led approaches within catchments, that was of relevance to Scotland and the benefits that they could bring to safeguarding drinking water supplies. This project sought views, nationally and from other EU (and international) countries, on how or what they have learnt from implementing a prevention-led approach. A Steering Group, comprising colleagues from Scottish Government, Scottish Water, DWQR and SEPA guided our focus on two key pressures on Scottish drinking water supplies: a) organics (e.g. Dissolved Organic Carbon) and b) Taste and odour issues. The objectives of the project were to:

1. Produce a long list of potential case studies which address either of the two key pressures;
2. Select a shortlist of case studies, to take forwards for detailed analysis and steering group review;
3. Host a workshop focussed on organics, to explore new evidence from selected short listed cases relevant to Scottish drinking water supplies;
4. Highlight key evidence that are applicable to the Scottish context from selected cases studies.

### RESEARCH UNDERTAKEN

A long listing exercise of potential cases which fitted the project criteria was conducted, providing 18 cases. A short-listing process took place to select four cases, which were presented and discussed during the workshop. A detailed case study template, with 15 questions, was produced for each of the workshop case studies: covering what had been done, and what had been

learnt. The workshop was focused on best practice approaches to manage DOC and colour issues; two of the selected cases also had approaches to address taste and odour issues. The detailed information given to delegates ahead of the workshop allowed them to focus fully on and discuss the knowledge generated from these cases, lessons learnt, outlook and challenges.

### KEY FINDINGS AND RECOMMENDATIONS

- The four shortlisted workshop case studies generated a large amount of empirical evidence. The two English case studies (SCAMP and UST) suggest that measures such as peatland restoration are beginning to reduce pressures due to DOC loads but their effectiveness is uncertain. As a result, longer term datasets are needed to fully assess the cost-benefits.
- Catchment hydrological processes' are complicated, and it may take decades to improve drinking water supply pressures through restoration activities such as ditch blocking and vegetation restoration. After restoration, some short-term increases in DOC levels may occur resulting in negative consequences. Nevertheless, the case study water utilities believe, long-term, that decreases will occur. Both South West Water and United Utilities are committed to a prevention led approach in the long term and see the potential benefits of a prevention-led approach from the early monitoring evidence.
- However, the Scandinavian case study DOMQUA is more sceptical about potential benefits as most of the observed rise in DOC concentrations over the past decades can be attributed to climatic factors.
- When other ecosystem services are costed measures become more cost effective (as seen in the SCAMP case study).
- Partnership working is key to the delivery of a prevention-led approach. As this can help with gaining buy-in for land and water management measures with landowners and farmers and leveraging extra funds.
- Fundamentally, funding is required to enable these changes in land and water management measures and to monitor their effectiveness in a scientifically robust way.
- The issue of ensuring that land managers do what they are paid to do was also raised.
- We found a limited number of prevention-led cases in Europe. The two most relevant cases, to the Scottish context, were from England (SCaMP and UST) and have the most relevant and extensive datasets and transferable knowledge.
- There is a continued need to better share knowledge gained from prevention-led approaches to avoid the duplication of effort. This could be done through a knowledge and data exchange network.

### RESEARCH TEAM

Mark Wilkinson, Kit Macleod and Miriam Glendell, The James Hutton Institute, Craigiebuckler, Aberdeen AB15 8QH, Full report available at: [www.crew.ac.uk/publication/prevention-led-approach](http://www.crew.ac.uk/publication/prevention-led-approach)