

## Case Study

# Brighton ChaMP for Water - Protecting our precious groundwater in the South Downs

### Background

The famous white chalk of the South Downs hills acts like a giant sponge, soaking up and storing water for 1.2 million people in the south east - this is known as an aquifer. The Brighton ChaMP (Chalk Management Partnership) project aims to protect this precious resource.

The chalk aquifer of the South Downs gives us the water we drink and wash in, and feeds winterbourne streams and local rivers. But, like many aquifers and rivers across the world, it is polluted with nitrates – from fertilisers, manure heaps and road run-off. If nitrate levels rise above 50mg per litre then water no longer meets the Drinking Water Standard and can't be supplied to our homes.

Drinking water must be 'wholesome' and this is defined in law by standards for a wide range of substances, organisms and properties of water. The standards are set to be protective of public health and the definition of 'wholesome' reflects the importance of ensuring that water quality is acceptable to consumers.

(<http://dwi.defra.gov.uk/consumers/adv-ice-leaflets/standards.pdf>)

The Brighton ChaMP partnership is made up of the South Downs National Park Authority, the Environment Agency, Southern Water, Natural England, University of Brighton, Brighton and Hove City Council and the Living Coast; all striving together to protect the aquifer.



*BBC South East interviewing farmer David Taylor at our first cover crop event*

### Rural intervention

Winter is a particularly vulnerable time as bare fields and higher rainfall allow excess nitrates in the soil to leach through into the aquifer. We can detect these nitrate spikes at the boreholes which supply our fresh water.

This autumn the project will be trialling a new method for helping to protect our drinking water from pollution, working with two farmers on the Brighton chalk block to see whether cover crops can reduce nitrate leaching through soils and into the aquifer.

It's a simple idea, to plant cover crops on otherwise bare winter fields, which will take up excess nitrates and use them to grow. These plants will hopefully also provide cover for birds, small mammals and invertebrates, reduce erosion and improve the health of the soil. The project is working with a local crop sampling company and a volunteer from the University of Brighton to monitor the success of this approach. Other organisations have seen a reduction in nitrate leaching of up to 59%. In some European member states cover crops are now compulsory in areas where drinking water is particularly vulnerable.

There have been some indications that cover crops can increase slug numbers which would be bad news for water too – more slugs may mean that farmers need to use more pesticides – but there are other reports which suggest that cover crops help to increase numbers of natural slug predators. The jury is out. It is hoped that the project trial will help to provide this much needed evidence; we don't want to see a situation where one type of pollution is replaced by another so we will also be monitoring slug and snail numbers in the trial plots.

Visit [brightonchamp.org.uk](http://brightonchamp.org.uk) for more news about the project.

‘Thanks for a fantastic and inspiring tour of sustainable drainage systems. The sites showed us the potential of using existing green verges, creating wetlands and adapting existing roads to protect groundwater from urban pollution and help protect our town from flooding.’

**Paula Goncalves, Principal Planning Officer, Brighton & Hove City Council**

## The outcome

ChaMP aims to protect and improve the quality of groundwater in the Brighton Chalk, to ensure it remains a sustainable resource for public water supply.

To do this ChaMP will:

- 1. Provide practical advice and improvements to land management in the urban and rural area.** In the rural setting this includes; 1 to 1 advice from a ChaMP Catchment Sensitive Farming Officer; specialist advice visits; land manager events; and rural interventions such as cover crops, manure management and precision farming trials. In the urban setting the project will deliver; advice to land managers on groundwater protection and pollution prevention interventions; urban stakeholder events; and practical measures such as Sustainable Drainage Systems (SuDS).
- 2. Raise public and land-manager awareness of groundwater protection.** 33 people attended our first cover crop event and 27 attended a recent groundwater protection and SuDS workshop; a positive sign that there is appetite to engage with the project.
- 3. Undertake research to increase knowledge of the issues and to monitor success.** ChaMP is working with several organisations to undertake a variety of research to help inform the project. One report already completed reviewed existing research papers to give an insight into the most effective interventions for reducing nitrate loss to groundwater in the rural area. The British Geological Society is undertaking a review of the current levels of understanding of karst features, such as swallow holes and fractures in the chalk, in the Brighton chalk project area. This is important as karst features are vulnerable pathways for pollution to enter the groundwater. The project will also collate information on how similar problems are tackled globally and share best practice and lessons learnt with others concerned with groundwater protection in the UK and overseas.

### The South Downs National Park Partnership Management Plan (PMP)

**2014–19** sets out a shared vision for how we all would like the National Park to be in the future. It includes 11 long-term outcomes, and provides a framework for communities, landowners, charities, businesses and public bodies to work together to make this vision and these outcomes a reality.

#### This project successfully achieves the following PMP outcomes:

- 1: The landscape character of the National Park, its special qualities and local distinctiveness have been conserved and enhanced by effectively managing the land and the negative impacts of development and cumulative change.
- 2: There is increased capacity within the landscape for its natural resources, habitats and species to adapt to the impacts of climate change and other pressures.
- 8: More responsibility and action is taken by visitors, residents and businesses to conserve and enhance the special qualities and use resources more wisely.

[southdowns.gov.uk/wp-content/uploads/2015/01/SDNP-Partnership-Management-Plan-2014-19.pdf](https://www.southdowns.gov.uk/wp-content/uploads/2015/01/SDNP-Partnership-Management-Plan-2014-19.pdf)

## The future

This phase of ChaMP will continue until March 2019. The project team will continue to;

- ✓ put further urban and rural interventions in place
- ✓ develop schemes and approaches to inform land management
- ✓ continue to deliver a programme of urban and rural site visits and interventions
- ✓ measure and evaluate progress.

The project has a list of research opportunities available to any suitable organisation or student, and are also happy to discuss student placements.

For more information please contact the Project Manager:

[amee.felus@southdowns.gov.uk](mailto:amee.felus@southdowns.gov.uk)

We also want to know from farmers ‘What else do you need?’ to help with groundwater protection.

For more information please contact Catchment Sensitive Farming Officer

[shai.gilad@naturalengland.org.uk](mailto:shai.gilad@naturalengland.org.uk)



<https://www.southdowns.gov.uk/wp-content/uploads/2017/05/Intro-to-Brighton-ChaMP.pdf>

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