

**Brighton & Lewes Downs Biosphere**  
LIVING IN A WORLD-CLASS ENVIRONMENT

**HERE**

**South Downs**  
National Park Authority

# Actions to improve groundwater quality in the Brighton Chalk aquifer

Chris Manning – South Downs National Park Authority  
Rich Howorth – Brighton & Lewes Downs Biosphere Project



**Brighton Chalk Block –**  
now part of a UNESCO World Biosphere site!

**Brighton & Lewes Downs Biosphere**  
LIVING IN A WORLD-CLASS ENVIRONMENT

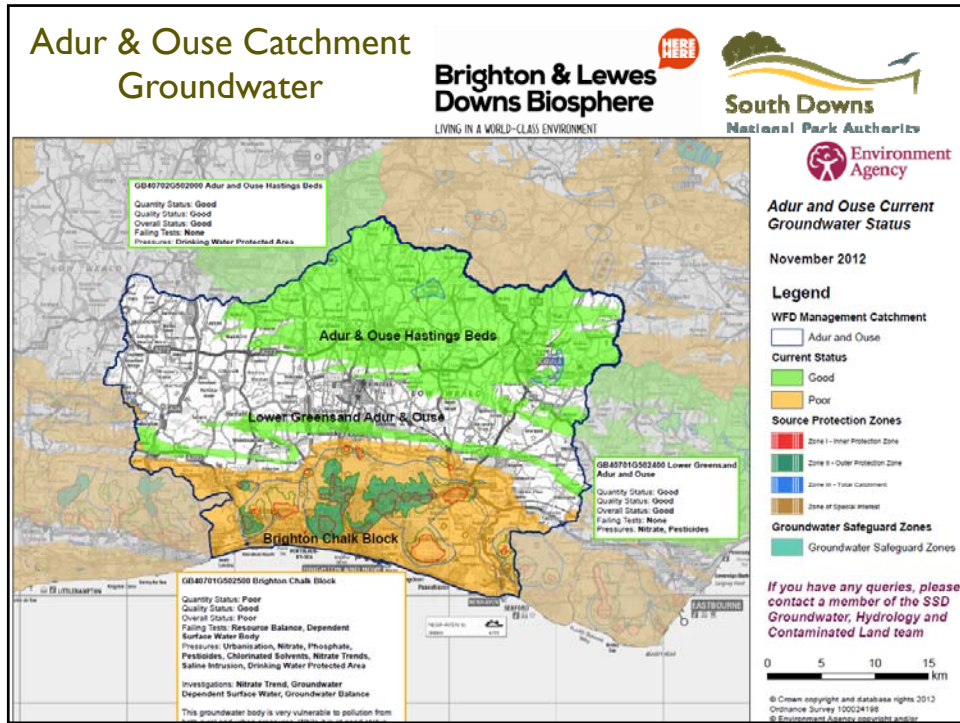


**Brighton & Lewes Downs Biosphere**


**Zones**

- Site of Special Scientific Interest (Core Area)
- South Downs National Park (Buffer Zone - LEWIS)
- Urban Areas (Specialist Area - LEWIS)
- Marine Conservation Zone (Buffer Zone - SEA)
- English Chalk heath (Special Area - SEA)


2015 data, and Marine Conservation Zone data reproduced with permission of Natural England © Natural England copyright 2014. Contains Ordnance Survey data © Crown copyright and database rights 2014.



## BCB Groundwater - Introduction



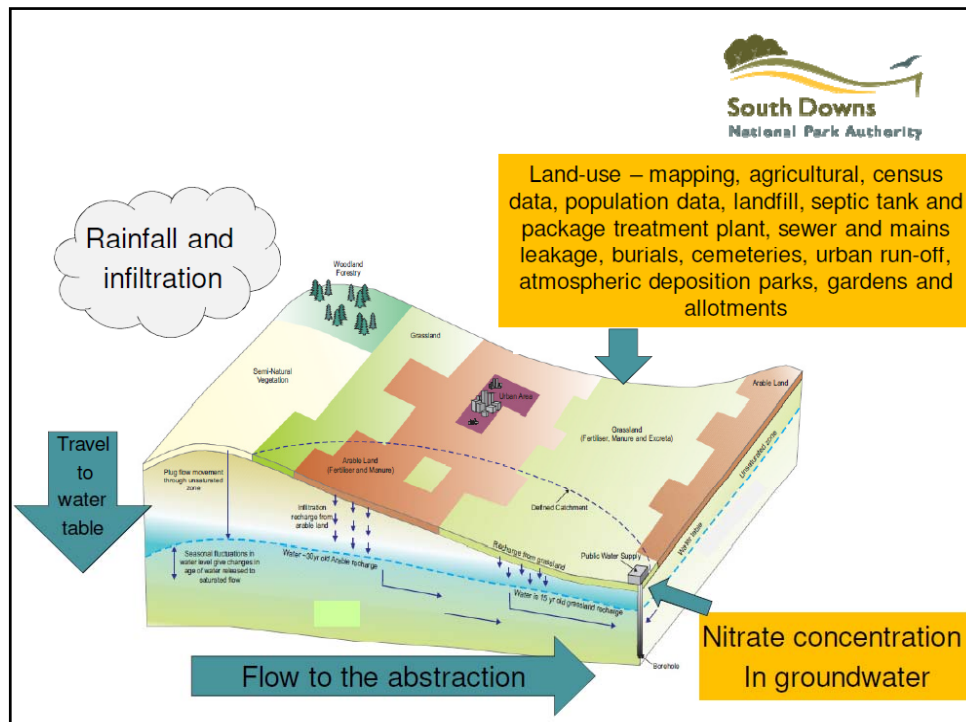
**Brighton & Lewes Downs Biosphere**  
LIVING IN A WORLD-CLASS ENVIRONMENT



**South Downs**  
National Park Authority

---

- Brighton Chalk is failing EU Water Framework Directive Standards due to increasing nitrate trends in groundwater.
- Rising nitrates can impact abstraction for public water supply.
- Some raw water sources are failing Drinking Water Inspectorate standards for nitrate.

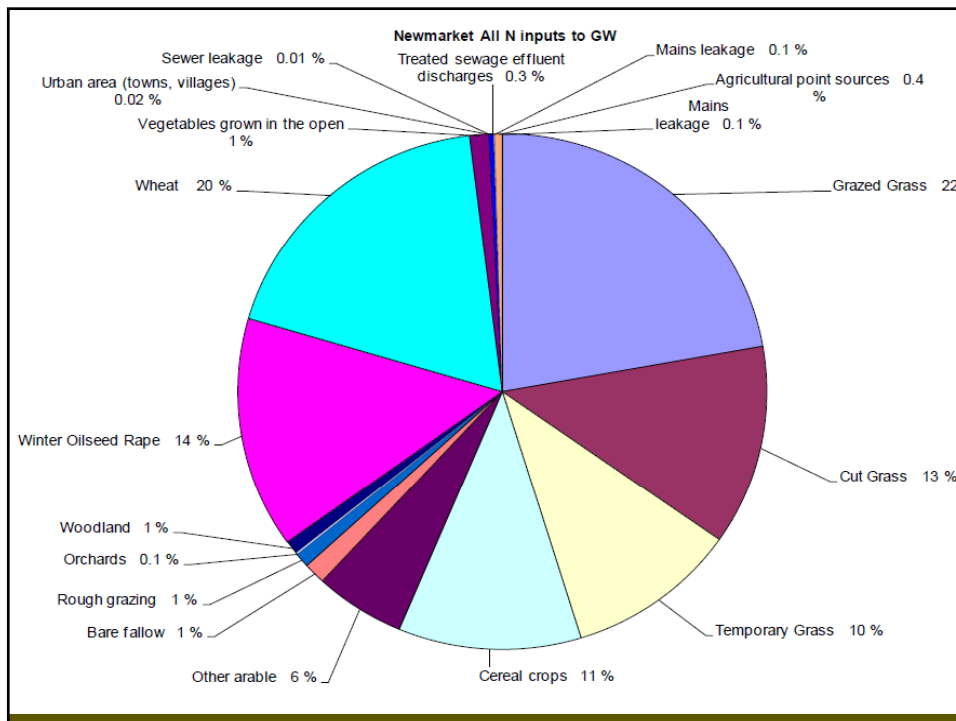
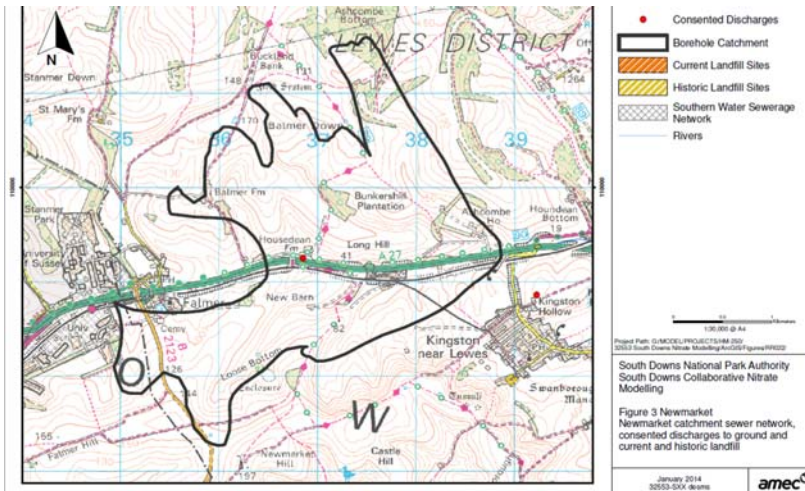


## Nitrate modelling

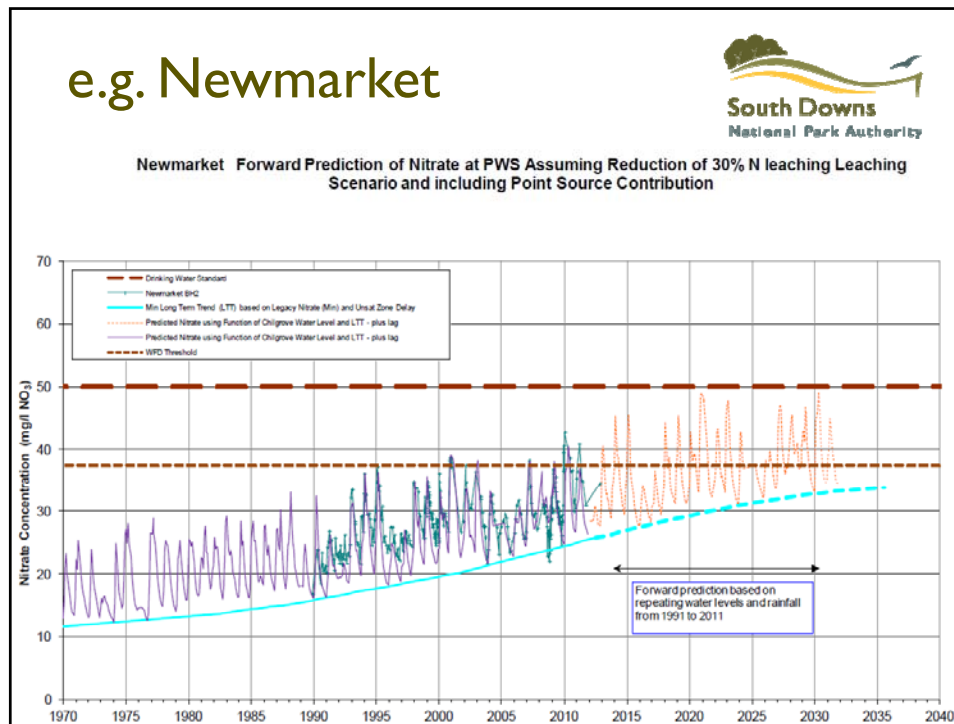


- What tools have we used?
- Source apportionment tool to identify what the main sources of nitrate are.
- Nitrate trend modelling to identify future concentrations and potential reductions required.

e.g. Newmarket







## Brighton & Lewes Downs Biosphere Action Plan priorities

**Brighton & Lewes  
Downs Biosphere**  
LIVING IN A WORLD-CLASS ENVIRONMENT

1. Environmental Awareness  
– residents & visitors
2. Tourism & Recreation economic development  
– visitors & residents
3. Green Infrastructure town-downs  
– networks, gateways, wildflower banks
4. Research & Monitoring – applied, local focus
5. **Groundwater** – quality / quantity / awareness

## Brighton CHAMP Project Overview



### Brighton Chalk Integrated Catchment Management Partnership:

- Proposal for 5-year project (2014-19)
- £800K project value incl SWS-  
SDNPA-EA financial inputs
- To identify and implement measures to  
reduce nitrate concentration

**Brighton & Lewes  
Downs Biosphere**  
LIVING IN A WORLD-CLASS ENVIRONMENT

in partnership with  
**Environment  
Agency**

**Southern  
Water**

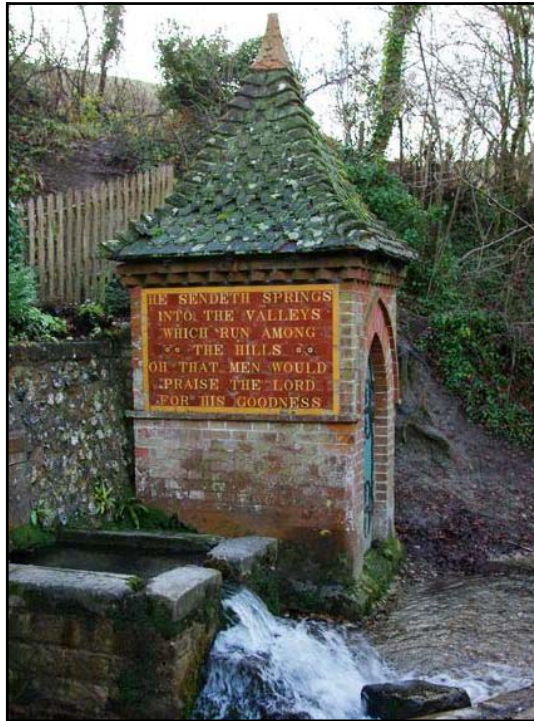
**University of Brighton**



## Brighton CHAMP Project Objectives



- 1) Practical advice & improvements to land management –  
Rural (farming) + Urban (drainage)
- 2) Awareness-raising of Public & Land Managers  
(“local & sustainable water”?)
- 3) Monitoring success: analysis; modelling; targeting; +  
behaviour change



**Brighton & Lewes Downs Biosphere**  
LIVING IN A WORLD-CLASS ENVIRONMENT

HERE  
HERE

Thank you

[chris.manning@southdowns.gov.uk](mailto:chris.manning@southdowns.gov.uk)

[rich.howorth@brighton-hove.gov.uk](mailto:rich.howorth@brighton-hove.gov.uk)

[www.adurandousecatchment.org.uk](http://www.adurandousecatchment.org.uk)

[www.biospherehere.org.uk](http://www.biospherehere.org.uk)