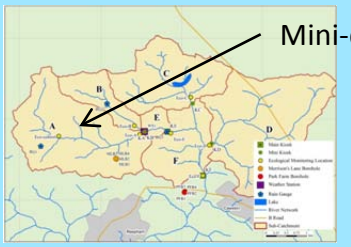
Working together for a healthy river

Cost-Effectiveness Analysis (CEA) using *FARMSCOPER*

Wensum Alliance

Research objectives

- Application of cost effectiveness analysis (CEA) to evaluate mitigation measures as part of the Wensum DTC Project.



Map of Blackwater sub-catchment showing monitoring locations

Key messages

- CEA is becoming more widely used to identify programmes of measures under the EU *Water Framework Directive* at different spatial scales
- Although *FARMSCOPER* has limitations in terms of farm representation it is a useful software tool for providing guidance on the selection of mitigation measures for further consideration

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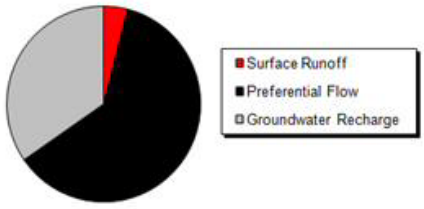
Description of research/methods

*FARMSCOPER** has been developed as a software tool to help evaluate different combinations of mitigation measures, such as those described in the Defra inventories.

FARMSCOPER outputs estimates of pollutant losses based on fertiliser applications derived from farm records, shown here for mini-catchment A (see map above).

The cost-efficiency (C/E ratio) is calculated as £ / % reduction

*http://www.adas.co.uk/Home/Projects/FARMSCOPER/tabid/345/Default.aspx



FARMSCOPER soil and climatic inputs for mini-catchment A

Pollutant	Total loss (kg)	Area (ha)	Total loss (kg/ha)
Nitrate	15,843	594	26.69
Phosphorus	187	594	0.32
Sediment	131,275	594	221.15
Ammonia	6764	594	11.39
Nitrous oxide	4209	594	7.09

Table of measures added in order of C/E ratio

Mitigation method	Cumulative Cost (£)	Cumulative nitrate reduction (%)	Cumulative phosphorus reduction (%)	Cumulative sediment reduction (%)
Use of reduced cultivation systems	-19,634	8.1	3.7	5.8
Use of improved N-efficient plants	-29,450	11.8	3.7	5.8
Use of a fertiliser recommendation system	-34,359	15.5	3.7	5.8
Do not apply fertiliser in high risk areas	-31,905	18.1	3.7	5.8

Exchanging knowledge

Sharing expertise

Wensum Alliance

www.wensumalliance.org.uk

defra Department for Environment Food and Rural Affairs
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Living With Environmental Change