EFFECTIVE MITIGATION OF POLLUTION IN AGRICULTURAL CATCHMENTS

Hampshire Avon
Demonstration Test Catchment

Matilda Bidulph, University of Northampton, is working on a PhD focussed on methods for monitoring the measures used to reduce pollution of rivers in agricultural landscapes. The PhD will take a practical approach to test affordable, replicable and sustainable methods that can be used across the country by landowners and local authorities. Many projects focus on predictive modelling and outcomes, whereas this will give concrete results, helping to decide where money should be spent.

A series of maps showing the study area (on the right) in relation to where it is located in the UK

The study area is based on the Rivers Sem and Ebble, tributaries of the River Avon (area shown in map above).

One example of the measures to be implemented is a severely degraded farm track on a farm in the Sem catchment. Currently the ditch that runs at the bottom of the track suffers from a large build up of sediment and associated pollutants and pathogens from animal waste that get washed off the track during periods of heavy rainfall. As part of the Avon DTC measures project the track will be resurfaced, reducing the sediment build up and therefore the available pollutants to be washed off into the ditch. The PhD will set up an experiment to monitor the effectiveness of the track resurfacing. Water samples from the ditch will be taken before, during and after the resurfacing to monitor any noticeable changes in water quality and sediment volumes.

Photograph of a degraded farm track

Another example of the measures to be monitored is a wetland area and pond that is present along the channel of the River Ebble in Ebbesbourne Wake. The effectiveness of the wetland and pond in reducing the volume of sediment and pollutants being carried downstream will be monitored.

The efficacy of riparian vegetation on channel banks at stabilising riverbanks and reducing runoff will also be looked at as part of this PhD. Implementing stream bank fencing or improving existing fencing is vital in allowing riparian vegetation to grow.

New fencing along a channel to reduce bank erosion and allow vegetation growth

A sediment trap.
The water enters a funnel, slowing it down and depositing the sediment

Sediment traps will be installed at various points along the stream to monitor the effectiveness of different types of riparian vegetation at trapping sediment. Sediment collected in the traps can be tested for chemicals as well as volume of sediment over time. Sediment source samples will be taken from riverbanks, road verges, fields and farm yards which can be compared to the sediment collected in the river. This gives an idea of the contributing sources of sediment to the river system and helps in targeting of measures.

The Hampshire Avon DTC is being led by Professor Adrian Collins from ADAS. The first phase of the project runs until 31st March 2014. For further details please contact:

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If you would like to join the Hampshire Avon DTC and be part of this project, please get in touch. Your local knowledge, experience, expertise and advice will be invaluable in helping to develop the right catchment and farm management solutions for reducing pollution in the Hampshire Avon catchment.