



Hampshire Avon
Demonstration Test Catchment



River Tamar
Demonstration Test Catchment
Associate Partner

Assessing impacts on ecological functioning

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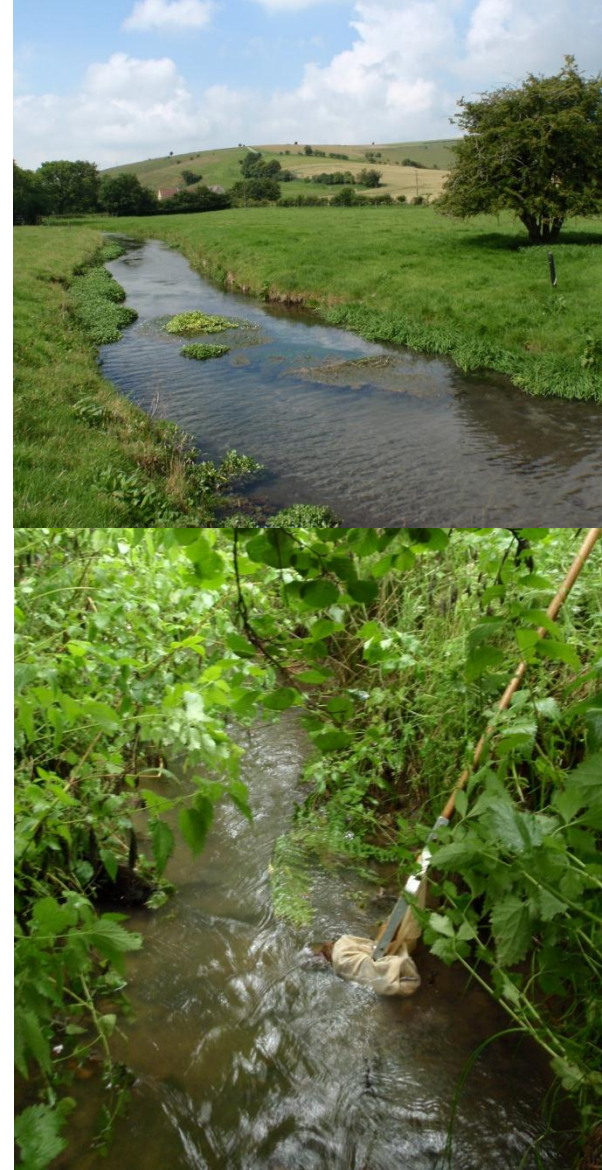


Environment
Agency

Demonstration Test Catchments

Is it possible to reduce cost-effectively the impact of agricultural diffuse water pollution on ecological function while maintaining sustainable food production through the implementation of multiple on-farm mitigation measures?

Detect shifts in baseline trend of the most ecologically-significant pollutants and their effects on ecosystem function.



Biological sampling

Diatoms

Macrophytes

Invertebrates

Fish

DARES

LEAFPACS

RICT (RIVPACS)

electric fishing
and HABSCORE

Geomorphology

Deposited Sediment

River Habitat Survey

Stilling Well



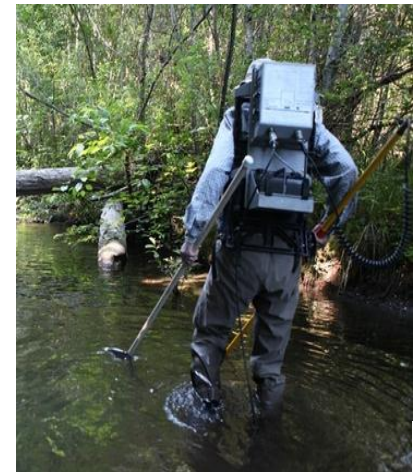
Linking
trends in Ecologically
Relevant Pollutants



To



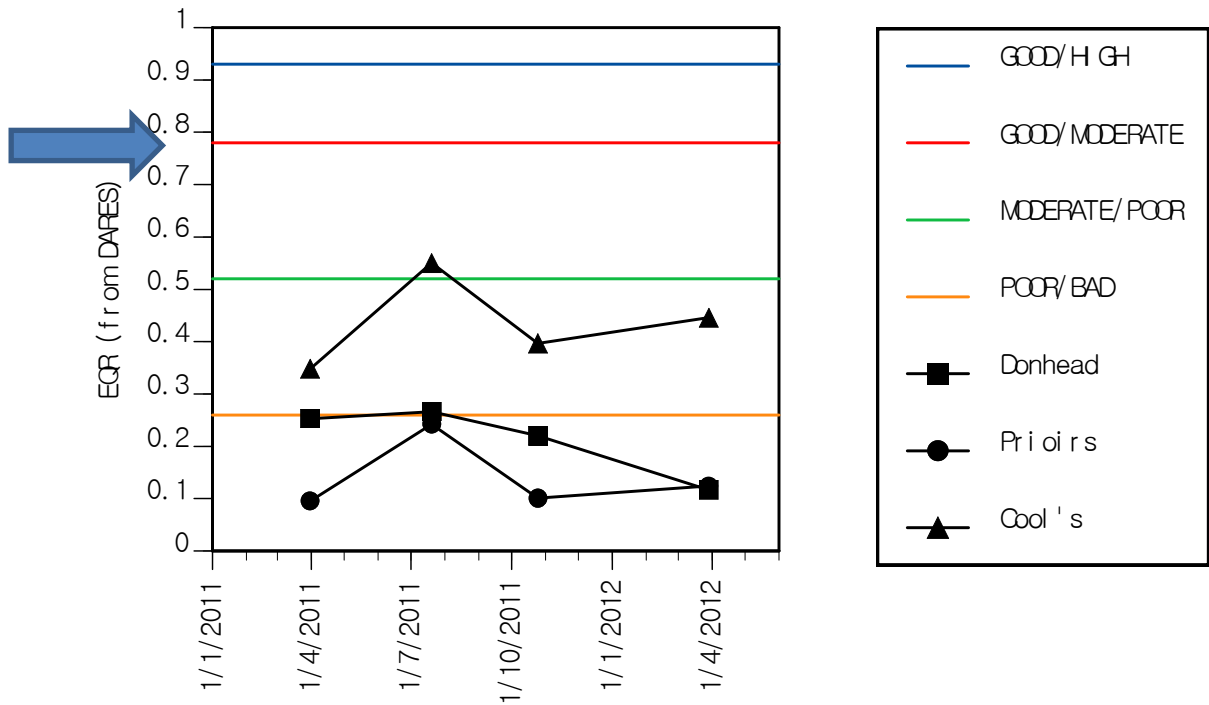
Biological Responses



Effectiveness of Mitigation

Ecological Quality Ratio Based on Diatoms

Priors Farm (Treatment) Cool's Farm (Control) Donhead (Control) before mitigation



Pollutant Specific Indices

Can be used to Diagnose Issues and to Track Trends in Pollutants

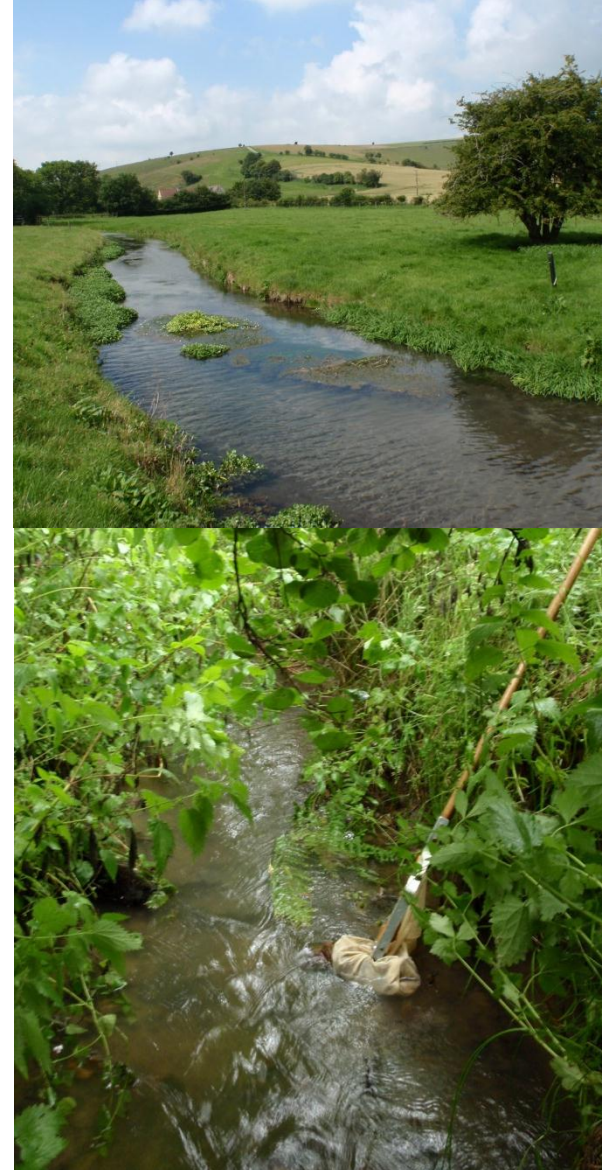
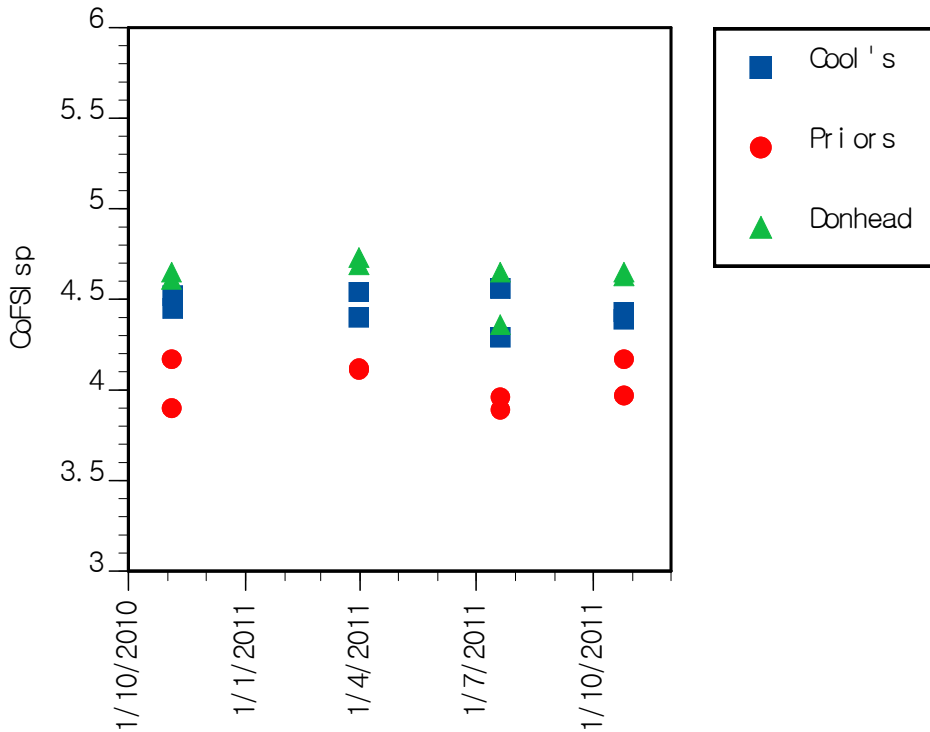
ASPT	Invertebrates	Organic Pollution
WHPT	Invertebrates	Organic Pollution
CoFSI	Invertebrates	Fine Sediment
PSI	Invertebrates	Fine Sediment
% Motile taxa	Diatoms	Fine Sediment
RMNI	Macrophytes	Nutrients
TDI	Diatoms	Nutrients
RMHI	Macrophytes	Flow
LIFE	Invertebrates	Flow
SPEAR	Invertebrates	Pesticides



Pollutant Specific Indices

Priors Farm (Treatment) Cool's Farm (Control) Donhead (Control) before mitigation

Index of Invertebrate Sensitivity to Fine Sediment



Ecosystem Process Measurements

Early Detection ?



Algal Accumulation
Herbivory
Detritivory

How effective are on-farm mitigation measures at delivering the requirements of the WFD?

Response of BQE to reductions in pollutants

Extent

Timescales

