



# A clear solution for farmers

ENGLAND CATCHMENT SENSITIVE FARMING DELIVERY INITIATIVE

## FARMING IN NORTH DEVON'S BIOSPHERE RESERVE

NEWSLETTER 1      DECEMBER 2009

Welcome to the first in this series of newsletters. If you have received a copy of this newsletter, your farm is located within the **North Devon Biosphere Reserve**.

Two newsletters will be sent out over the next few months. Their aim is to introduce you to the project and some of the grants and information available to farmers in the area. We will also highlight some of the issues about farming in the Biosphere Reserve.

### Why has this project been set up and who is involved?

The aim of the project is to bring together farmers and land managers within the biosphere to highlight the link between farming and the ecology of the biosphere. The project is run by North Devon Coast and Countryside Services, delivered by Creedy Associates, Farming and Wildlife Advisory Group (FWAG) and West Country Rivers Trust and funded by the English Catchment Sensitive Farming Delivery Initiative.

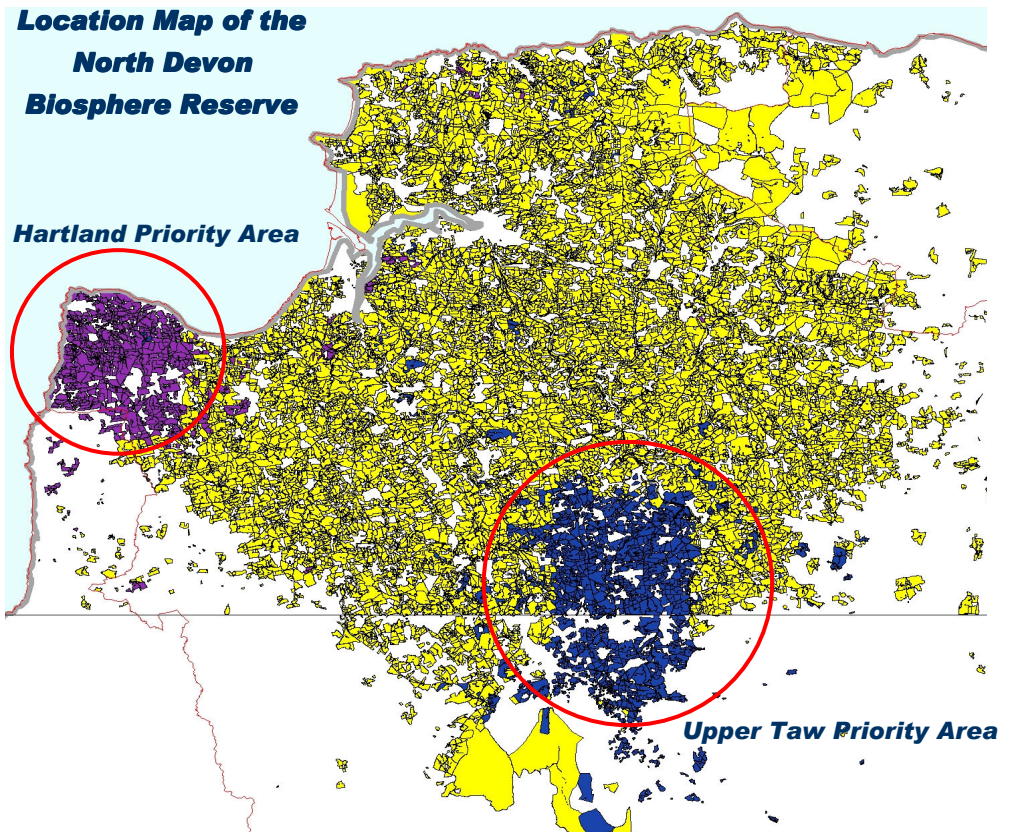
This newsletter will introduce you to the project and make you aware of some of the FREE incentives on offer in your area such as:

- One to one farm visits
- Farm Workshops
- Soil analysis
- Farm resource management grant

### What is the North Devon Biosphere Reserve?

Biosphere Reserves are places with world-class environments that are designated by the United Nations and where conservation and sustainable development go hand in hand. The area in which you farm has been identified because of its blend of special landscapes and wildlife areas, rich cultural heritage and communities that want to sustain it into the future. It is the first of only two new style Biosphere Reserves in the UK.

#### Location Map of the North Devon Biosphere Reserve



### What is the link between Farming and the Biosphere?

The answer lies in the links between rainfall, farmland and rivers. The Biosphere Reserve is based on water flowing from its sources, high on Dartmoor and Exmoor (mainly via the rivers Taw and Torridge) to the North Devon coast. What happens on the farmland in the area onto which rain falls can have a huge impact on water quality in the rivers, on the fish, plants, insects and other bugs that live in them and also on the estuaries, and coastal Areas of Outstanding Natural Beauty (AONB) and areas out to sea. As rain water flows across or drains through productive farmland, it can pick up residues of plant nutrients, especially nitrates and phosphates. These can upset the ecology of rivers and cause damage to plants and animals. It is also possible for organisms that can cause disease in humans (pathogens) to be excreted by livestock and be carried in rainfall runoff to rivers and, eventually, to bathing waters at the coast. Fine soil particles can also be wash from land to form sediments in rivers that destroy fish spawning grounds.



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## What are the issues in the local area?

The big topic that this project is trying to highlight is a problem called "diffuse pollution". Most people are aware of "point source pollution" of a stream or river from a burst or overflowing slurry tank or other such events that rarely occur these days. Here we are trying to tackle diffuse pollution that from individual farms may be small and insignificant. However, the cumulative effect from all the farms in the river catchment can have a very big impact.

## What can be done about diffuse pollution?

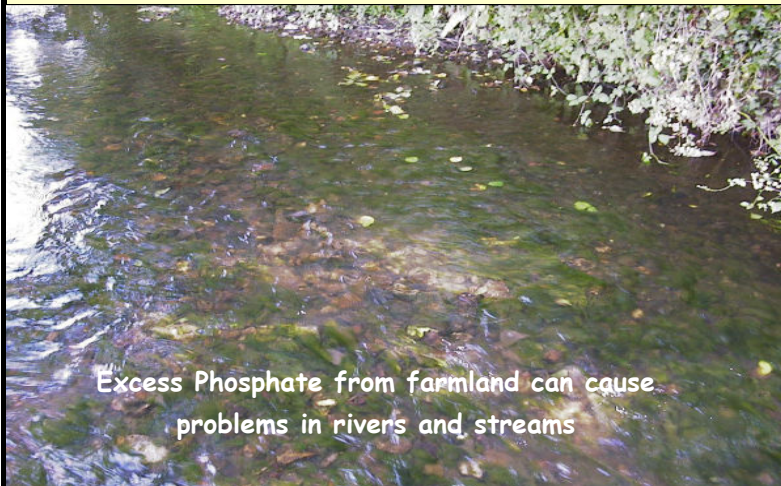
Nationally, diffuse pollution from farming is being tackled by promoting Catchment Sensitive Farming. Within your local area this is being done by a partnership between the North Devon Coast and Countryside Service, Natural England and the Environment Agency. Farmers are encouraged to make changes in management that will reduce diffuse pollution from their land. **The changes needed are usual small and can result in financial benefits to your business.**

## What has this Project got to Offer Farmers?

There are a range of incentives through the project to encourage you to make small changes on your farm. These include:

- Free one to one advice
- Free attendance at specially organised events.
- Free soil sample analysis
- Agricultural resource management grant

*At present the full range of incentives is only available to farmers within two designated priority areas, the Hartland priority area and the Upper Taw priority area.*



## Why these Areas have been Highlighted:

Each area has a specific diffuse pollution problem.

### *Hartland Priority Area:*

Diffuse pollution from the Hartland area is thought to be contributing to contamination of bathing waters around the coast.

### *Upper Taw Priority Area:*

High levels of phosphates and sediments in the rivers and streams means that the area will not pass the Water Framework Directive targets in 2015.

## How is the Project going to Help?

Anyone farming in these priority areas is welcome to sign up for a **free one to one** visit from a local consultant for advise about your farm.

All farmers within the priority areas will be invited to a farmer orientated workshop early in the New Year presented by Creedy Associates focusing on practical management to reduce diffuse pollution.



Creedy Associates 2009

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### Now for some Practical Advice from Creedy Associates - Beating Rising Fertiliser Prices...

With ammonium nitrate fertiliser currently at round about £190/t and phosphate and potash prices on the up, it makes sense to look at ways of using manures more effectively. Much of the nitrogen, phosphate and potash in your animals' diet is not utilised by them for milk or meat production but excreted, so ending up in the slurry store or dung heap. Since you have already paid for these nutrients, in feed or fertiliser purchases, why not re-use them to save on further bag fertiliser costs? As well as making economic sense, this fits well with Catchment Sensitive Farming and reducing diffuse pollution from your land. Whatever the crop, carefully matching the nitrogen, phosphate and potash applied in bag fertiliser AND manures to the fertiliser recommendations for the crop not only saves money on fertiliser but also reduces the risk of nutrients leaking out to streams or rivers. You will probably need to end up spreading at lower application rates over a larger area of your farm. This may be more time consuming but there are significant financial gains to be made. We will show you how best to do this on your farm during the workshops planned for next year. In the meantime, here is an example for you to think about.

### Using dairy cow slurry for first cut grass silage

If we assume that typical dairy cow slurry (6% dry matter) is spread at a rate of 44m<sup>3</sup>/ha (4000 gallons per acre) in spring (or February onwards) for 1st cut grass silage.

The fertiliser recommendation for the silage cut is:

- 120kg/ha of nitrogen
- 40kg/ha of phosphorous
- 80kg/ha of phosphate

By providing these nutrients from purchased fertiliser alone this could cost approximately:

**£280/ha or £115/ac**

However, by allowing for the nutrients contained within the slurry which provides the following available nutrients:

- 56kg/ha of nitrogen
- 30kg/ha of phosphorus
- 160kg/ha of potash

This reduces the cost of purchased fertiliser needs to approximately:

**£121/ha or £50/ac**

**and will leave some surplus potash in the ground for the next cut.**



### Beware causing pollution

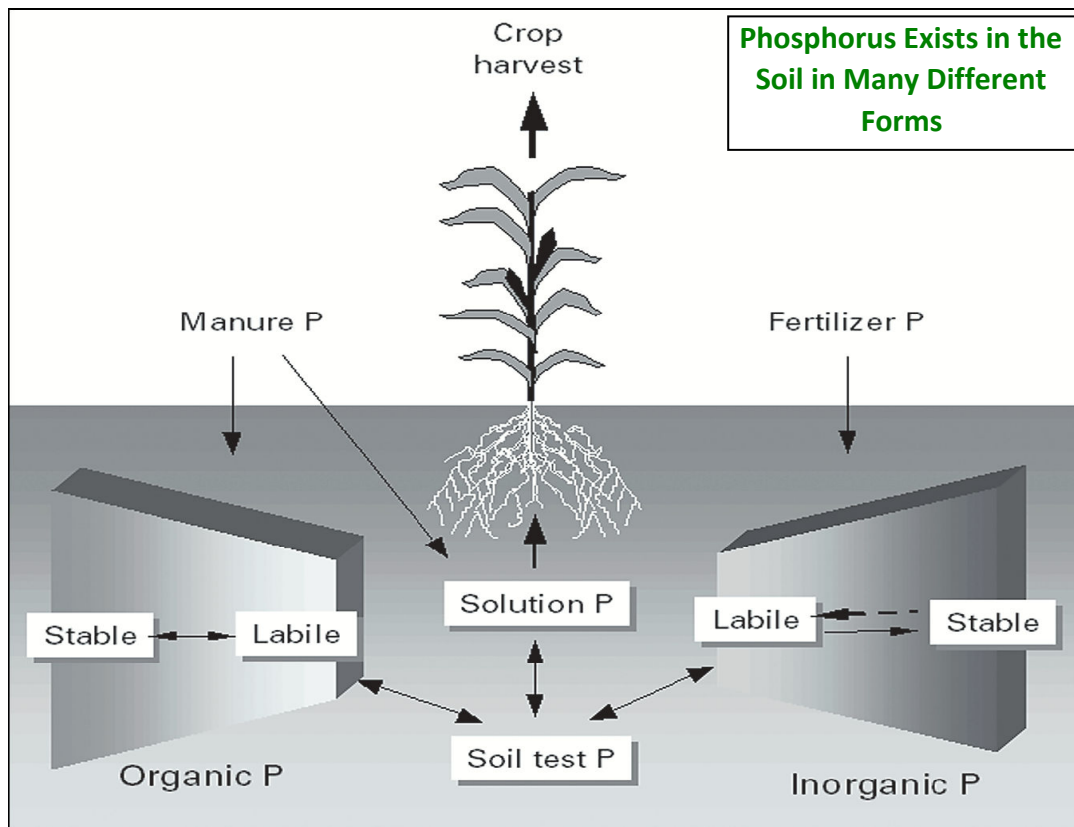
Remember to take soil and weather conditions into account. At this time of year, there is always the risk that slurry will run-off land to watercourses –resulting in pollution. Remember not to spread on frozen or waterlogged soil, especially on sloping land, nor on compacted soil that will be unable to absorb the extra liquid. Avoid spreading when heavy rain is forecast. Double check with your Farm Manure Management Plan before spreading. If you farm within an NVZ, you will also have to take closed periods and maximum N application rates into account.



### Why is Phosphorus (P) of concern to Catchment Sensitive Farming and the North Devon Biosphere?

Phosphorus is essential to achieving high crop yields and usually applied to land as phosphate fertiliser ( $P_2O_5$ ) or in manures. The chemistry of Phosphorus in soils is very complex. It exists in both inorganic and organic forms, each form being a mix of many different compounds that:

- are water soluble and can readily be taken up by crops i.e. plant available. Soil analysis usually measures the amount of soluble or plant available P present.
- are "labile" or can be broken down in the soil to plant available forms.
- are stable and not plant available.



The solubility, and hence plant availability, of Phosphorous is very dependant upon soil pH and soil type. Phosphorous is most soluble in soils at pH 6 – 7, but it can become fixed to soil particles making it unavailable to plants. In contrast, on sandy soils with low organic matter, it can leach out in the same way as nitrates especially where the soil P index is above 3. Phosphorus, in one form or another, therefore can get into streams or rivers most commonly through wash-off of soil or, under some circumstances, through leaching. Here, it can encourage the growth of algae that can smother out aquatic plants or die off and cause stagnation in the water, removal of oxygen and the death of fish and other aquatic wildlife. Fields near to livestock buildings often have high levels of P due to repeated applications of manures to the most convenient fields. It is important to avoid excessively high manure applications and to match bag fertiliser and manure applications with the crop requirements to prevent build up of P.