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CAMEL SAC

Nature Based Solutions for Phosphate Reduction

Why Nutrient Neutrality?



An increasing area of concern is the effect of phosphate pollution on water quality and wildlife. This is especially so in designated areas such as the River Camel. This river and its associated habitats are of outstanding importance for wildlife. High nutrient levels (phosphates and nitrogen) cause excessive growth of algae in water courses, using up oxygen and blocking light that other river life needs to survive.

The major sources of phosphates to freshwater ecosystems are sewage treatment works and agricultural runoff. With major phosphate reductions by 2027 planned by the water industry, the contribution of agriculture is increasingly significant. The Environment Agency predicts that reductions of agricultural phosphate losses in the order of 50% are needed, alongside further point source reductions, in order to achieve good ecological status in our rivers.

The greatest likelihood of phosphate loss from agricultural systems occurs when soils are prone to erosion, when soil phosphate levels have accumulated in excess, and/or when fertiliser or manure application is closely followed by rain. Phosphorus is lost from agricultural soils in both dissolved (DP) and particulate (PP) forms via leaching and surface runoff and erosion.

Due to an enforcement by Natural England requiring nutrient neutrality to avoid further deterioration of the river in this catchment, the Planning Authority has been unable to approve any new development. This will only be allowed where they can prove that the development will not increase phosphate pollution, either by managing wastewater on site, or through mitigation measures to reduce phosphate application or runoff elsewhere in the catchment.

To actually improve the condition of the river and maintain it as a wonderful wildlife and recreational resource, we need to aim for a negative nutrient status. Legacy phosphates in the land and rivers from historic sewage and agricultural inputs will take many years to correct. This will need many small actions across multiple landholdings to reduce and capture sediment and phosphates before they enter watercourses.

This document sets out a selection of such actions that Cornwall Council is considering. We are researching the level of interest and capacity of land managers to undertake the different options in the short and long term to help develop a system of phosphate mitigation which will enable development to take place without further harming the river habitat.

Phosphate Credits



Cornwall Council has been working with the regulators and developers to create a **Phosphate Credit scheme**. This will pay land managers to take actions to reduce phosphate levels in the catchment. This will be paid for by developers to allow new homes to be built. Westcountry Rivers Trust wants to see measures targeted where they can provide maximum benefits to the health of the river catchment, with minimum disruption to farming and food production.

We need your feedback to understand which options are realistic and to establish a fair price and form of agreement to undertake them.

The following guide includes two approaches:

Short term options that will bridge the gap while longer term measures, including upgrading sewage treatment works, are established. These can in many cases be integrated into normal productive agricultural management. Contracts will be straightforward and flexible to suit your farm business.

Long term options that require more permanent changes to land use. Contracts will consider land values and inflation, including a degree of flexibility in case circumstances change.

All participating farms will receive support with developing a whole farm Nutrient Management Plan.



Ideal starting conditions are arable or dairy in high risk locations.



Riparian woodland, meadows and wetland restored.

Agricultural Benefits

- Save on fertiliser costs
- Support with developing nutrient management plan
- Low maintenance land use on less productive land
- Retain topsoil where it is needed
- Create shelter and shade for livestock
- Encourage beneficial insects
- Alternative crops coppice, reeds, willow withies
- Improve soil structure and health
- Improve health and welfare of livestock by limiting access to waterbodies
- Additional grant funding to support farm business





Whole Farm Nutrient Budget



- Participating farms will get support with developing a nutrient management plan and farm advice from qualified farm advisors.
- Designs for land use management and longer term interventions will be bespoke to the farm context and business model.



Additional Public Benefits

- Linking up ecological corridors for biodiversity
- Improve in-river habitat
- Flood resilience for downstream communities
- Drought resilience for farmland and rivers
- Water quality
- Carbon sequestration
- Improved angling opportunities
- Potential to provide diverse amenity and educational opportunities
- These benefits may generate additional income through ecosystem services funding





Existing Phosphate schemes



The Camel catchment is not the only area where the issue of nutrient neutrality is being addressed. Here are some examples for reference:

In Somerset the River Tone and the River Axe catchments have faced the same challenge.

The Somerset West & Taunton district Council have begun to set up a Phosphate credit scheme using Section 106 agreements with developers to pay for mitigation. The current rate to be paid by developers in this catchment for 1kg phosphate removal is £55,000. The cost per home will be around £5,500. The interim strategy of phosphate mitigation they have developed is a combination of fallowing agricultural land and retrofitting water saving devices in existing council housing. Natural England has provided 'in principle' support for this approach. The long term strategy includes developing wetland projects downstream of wastewater treatment works and for new houses to have higher water efficiency standards. The Council expects to buy land for long term mitigation outright.

Wessex water is running a phosphate credit pilot scheme here via the private Entrade platform, where a variety of on-farm actions may receive payments. <u>https://www.somersetcatchmentmarket.uk/</u> these include woodlands, wetlands and arable reversion, with a typical agreement period of 80 years for the long term options and as little as 10 months for shorter term options.

Wiltshire Council has started a phosphate mitigation scheme on the Hampshire Avon catchment, focusing on onsite mitigation of development through sustainable drainage schemes (SuDS) and water efficiency measures.

Dorset Council has also been working on the issue due to the overlap of the above catchments with its boundaries plus Chesil and the Fleet. They consider that most mitigation will come from upgrading sewage works and bespoke mitigation on development sites.

Wessex water is also running a phosphate reduction scheme via FWAG on the River Stour which includes payment for actions such as planting cover crops (£100/Ha/Yr), watercourse fencing and riparian buffer strips (£500/Ha/yr), or arable reversion to grass. (£500/Ha/yr) https://www.wessexwater.co.uk/environment/catchment-management/river-stour-phosphorus

Short Term Options 2-10 years

Changes in management that can immediately relieve the pressure on the catchment.



Short term options can be applied in high-risk fields or those adjacent to watercourses in the Camel catchment. Target fields will have high P indices.





Funding rates shown are based on Countryside Stewardship but with a simplified application process. This means you will not be able to claim for options already in Stewardship Agreements.







Rates paid for infrastructure and capital items needed to implement the different options will also be based on Countryside Stewardship rates, see examples below:

Item	Rate	Unit
Post and wire fencing	£6.34	Per m
Permanent electric fencing	£5.66	Per m
Field gate	£489.90	Per gate
Swales	£7.52	Per Sq m
Cross drains	£750.26	Per drain
Small leaky dams (<5m width)	£461.39	Per dam
Tree planting	£1.72	Per tree
Tree shelter	£2.43	Per shelter

Long Term Options 20-80 years

Effectively permanent changes to land use, although not necessarily excluding productive management Options can be applied in high-risk fields or those adjacent to watercourses in the Camel catchment. Payment will be site specific, based on estimated nutrient removal rates.



Farm Woodland



New mixed woodland planting which can be managed as a productive resource.

Establishment and maintenance costs can be covered through Forest for Cornwall or EWCO schemes

Riparian woodland



Fence off minimum 10m width riverside corridor and plant or allow natural regeneration of woody species. Manage by coppicing to encourage ground cover.

Forest for Cornwall or EWCO schemes

Wetland buffer



Fence off suitable riverside corridor to exclude livestock. Remove or block drainage infrastructure. No inputs of fertiliser.

Phosphate credits

Treatment Wetland



Site specific Integrated Constructed Wetland designed and maintained to treat consented and monitored phosphate discharges.

Phosphate credits

Farm Ponds



May include swales, sediment traps and wetland areas in treatment train. Support with design provided.

Phosphate credits

How It Works

Bespoke contracts will be agreed with Cornwall Council as an intermediary with developers and Natural England. Anyone with control of land (tenant or owner) may take part. Maintenance of the scheme will be the ongoing responsibility of the landholder.





Contracts - Conservation Covenants



Conservation covenants are new form of private agreement, designed to provide a bespoke mechanism to control how landholders use their land for conservation purposes and public good.

They take the form of an agreement between landholder and 'Responsible Body': A Local Authority; Conservation charity; or Private sector organisation with charitable aims.

For phosphate reduction measures the agreement could include a long-term annual payment, similar to a lease, that will keep pace with inflation.

Pros

- Flexibility to cover a wide range of obligations over a range of timescales
- Can be with landowner or tenant
- Automatically binds future owners, tenants and lenders
- Step in rights where the Responsible Body can enforce or take maintenance actions
- Minimise Stamp Duty Land Tax and potentially beneficial for landowner Capital Gains Tax

Cons

- Novel and therefore unfamiliar to landowners and their advisors
- If changes cannot be agreed, the decision goes to the Upper Tribunal which can discharge or modify agreements for various reasons – currently untested and changes more likely over long time scales
- Government guidance on becoming a Responsible Body and registering conservation covenants still awaited, now promised early 2023

Contracts and Payments - Other options

PLERSTRUS

Alternatives to conservation covenants will also be considered where appropriate. But each system has drawbacks as well as benefits.



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Do you think you may have suitable land in the Camel catchment? Please get in touch:

Westcountry Rivers Trust 01579 372140 Zoë Smith /Giles Rickard zoe@wrt / giles@wrt