



**Payment for
Ecosystem
Services
project.**

Payment for Ecosystem Services project – River Tillingbourne.

We're using catchment management approaches to work with farmers, land managers and the wider pesticide industry to prevent metaldehyde reaching watercourses. One of these approaches is called Payment for Ecosystem Services (PES).

Metaldehyde, the active ingredient in many slug pellets, is commonly used in agriculture to protect crops against slug damage, particularly winter cereal crops and oilseed rape. Slug pellets are applied in autumn when the soil is wet and rainfall is highly likely.

The challenge.

When it rains, metaldehyde can be washed off the land and enter rivers at concentrations higher than the Drinking Water Standard (DWS) of 0.1µg/l. Unfortunately, even advanced water treatment processes can't easily remove metaldehyde, so other approaches are needed to maintain compliance with drinking water standards.

The Tillingbourne is a tributary of the River Wey, and both rivers are used to provide drinking water. Metaldehyde concentrations in these rivers can exceed the DWS during the high risk season, between September and December. For this reason, this catchment was chosen to pilot our first PES project in autumn 2015.

- Metaldehyde concentrations frequently exceed the Drinking Water Standard (DWS) of 0.1µg/l in some rivers.
- Metaldehyde can't be easily removed during the water treatment process
- Farmers have been rewarded for keeping metaldehyde concentrations below DWS for two consecutive years.



Payment for Ecosystem Services.

PES schemes involve payments to the managers of land or other natural resources in exchange for providing specified ecosystem services over and above what would otherwise be provided even if payments weren't made.

Ecosystem services are the benefits we derive from the natural environment. For example, these include the provision of food and water (provisioning services), regulation of climate and flood risk (regulating services), opportunities for recreation and education (cultural services), and underlying functions such as nutrient cycles and crop pollination (supporting services).

Maintaining and enhancing ecosystem services (and restoring them if they've been lost or degraded) is increasingly recognised as essential for sustainable economic growth, prosperous communities and promoting everyone's wellbeing.

The project.

Our PES project recognises the contribution of farmers in keeping metaldehyde concentrations below the DWS, producing 'clean' water, and rewards them for this.

Three key farmers in the catchment were identified as metaldehyde users. These farmers volunteered to get involved in the project in both autumn 2015 and 2016.

The PES approach is designed to be flexible and outcome focused, giving farmers the opportunity to select from a variety of land management practices to keep metaldehyde out of rivers, including:

- Using ferric phosphate slug pellets as an alternative to metaldehyde
- Using cultural control methods to create a less favourable environment for slugs
- Using integrated pest management to control slug populations

To determine the success of the project, metaldehyde concentrations were monitored at the downstream end of the catchment. Farmers received payment if metaldehyde concentrations remained below the DWS throughout the high risk season.

What we've seen.

Before the project, a metaldehyde peak of 0.15µg/l was recorded in the River Tillingbourne in mid-October 2014. At this time a higher concentration of 0.23µg/l was recorded in the River Wey, followed by a peak five times higher than the DWS in early November.

Since the project began, it's been successful in keeping metaldehyde concentrations in the River Tillingbourne below the DWS. During the high risk season, 'clean' water from the River Tillingbourne is blended with water from the River Wey which is typically higher in metaldehyde. The farmers have received payment for providing this clean water, and are eager to continue working with us in the future.

What next?

The Tillingbourne PES project involved a small number of farmers who were willing to work voluntarily with Thames Water to improve local water quality. This approach requires a high level of engagement and involvement by farmers currently using metaldehyde. Building on this success, we've now begun the challenge of scaling up our approach across larger catchments with more farmers.

