

# Catchment Matters

## Farming Edition

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### The newsletter from the Parrett Catchment Project

#### Welcome

Welcome to the *Catchment Matters: Farming edition* from the Parrett Catchment Project (PCP) - the bulletin for farmers, landowners and everyone who wants to hear about the work underway in the Parrett catchment to reduce flood risk and bring water levels under control.

*Catchment Matters* is a quick, breezy read to find out about the Parrett Catchment Project, what we have been up to, current lobby issues and how to get involved. Dialogue matters; please do give us feedback and suggestions for future editions. Contact Nickie Harris on 01823 355281 if you would like to be included on the stakeholder mailing list.

#### Foreword from the PCP Chairman, Anthony Gibson



Anthony Gibson, Chairman of the PCP Management Group

Events in Boscastle during August served as a very timely reminder of the ever-increasing threat posed by climate change, so it is pleasing to be able to report real progress with reducing the flood risk to the Parrett catchment since the last issue of the PCP Farmers Newsletter, *Catchment Matters*.

The construction work is now underway on the first three flood retention schemes, at Bower Hinton, Creedy Bridge and Voker’s Bridge, and these will be operational by the year’s end.

There has also been significant progress with the Parrett Sluice, with an initial economic impact appraisal giving the project a resounding seal of approval, and the Sluice Partnership meeting regularly to discuss the all-important detail.

Uncontrolled, prolonged deep flooding is the biggest single threat to the people, the agriculture and the wildlife of the Somerset Levels. Thanks to the PCP, that threat is now being faced, even if we are still a very long way from being able to say that it has been overcome.

#### Technology Transfer events

Dillington Farms near Ilminster recently played host to a FWAG/Bredy Agriculture Soils Workshop and Machinery Demonstration. Visitors were able to see at first hand compaction within the soil profile and to discuss with machinery suppliers the cultivation equipment available for removal. Below are a few photos from the day

Future work planned by the PCP Soil Management Group will include measurement of run-off following treatments to a clay soil post maize. In addition to providing scientifically robust data that relates to current practice within the Parrett Catchment the trial site will also demonstrate Cross Compliance soil management measures.



FWAG Soils Specialist Graham Colborne explains to a group of visitors how to identify compaction and advises on corrective measures.



Dillington Estates Farm Manager Chris Wilson has a one to one chat with Graham on how to deal with compaction after the maize crop.



Some of the machinery on display was beyond most peoples pockets! However the event provided an ideal opportunity to assess the effectiveness of ‘one pass stubble finishers’.



Based upon the Lysimeter technology developed by IGER, the plots are hydrologically separated and accurately measure the run-off that occurs on a range of treatments during the winter months.



David Cliffe



Jo Oborn

For a **free** visit to discuss soil management planning contact Jo Oborn or David Cliffe, FWAG's specialist advisors:  
☎ 01823 355427

## Focus on Soils – What are the issues?

Much has been written in the farming press recently with regard to soil management practices as a component of cross compliance.

### What is GAEC (Good Agricultural & Environmental Condition) ?

GAEC covers a wide range of activities relating to land management many of which are already being implemented by the vast majority of farmers. GAEC will encourage farmers to assess the risks associated with their production regimes and implement measures designed to reduce the likelihood of soil erosion occurring.

### What management measures are likely to feature under GAEC ?

- ◇ Maintaining organic matter levels;
- ◇ Reducing the risk of soil erosion;
- ◇ Managing soil compaction to minimize run-off.

### What is the likely timescale for implementation ?

**2005:** Awareness raising and introduction of GAEC guidance notes - cross compliance with standards:

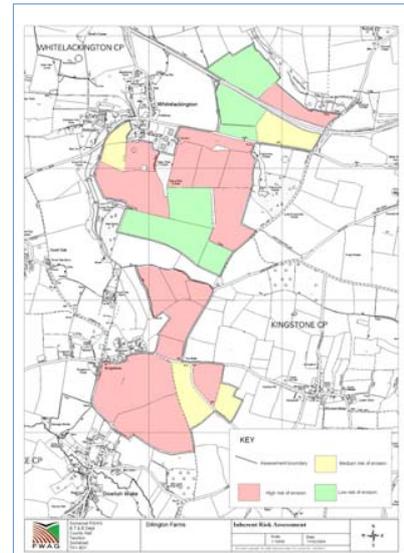
- ◇ Over winter stubble management
- ◇ Straw burning
- ◇ Cultivating water logged soils

**2006:** Farmers will be required to produce a simple Soil Management Plan that covers:

- ◇ Site specific soil risks
- ◇ Management options designed to reduce risk
- ◇ Farm specific issues and remedial actions

**2007:** Implement management options and remedial actions.

As reported in the previous *Catchment Matters: Farming ed.*, FWAG have responded to the initial consultation on GAEC by developing a **Soil Management Plan** that is designed to help farmers in the Parrett Catchment meet the anticipated compliance conditions.



Example Soil management plan

The FWAG Soil Management Plan has three main components:

- 1) **Field Risk Assessment** – designed to highlight the Inherent Risk Status of individual fields across the farm
- 2) **Cropping Risk Analysis** – provides guidance on how to manage farming activities to avoid untimely operations that create compaction and contribute to increased run-off.
- 3) **Action Plan** – a farm specific list of recommendations designed to improve soil structure and assist farmers in meeting mandatory requirements.

## Compaction impacts catchment-wide

Ongoing survey work undertaken in the catchment has identified high levels of compaction across a wide range of soils and farming operations.

A large proportion of the compaction found can be attributed to the following:

- ◆ Untimely cultivations
- ◆ Incorrect machinery settings
- ◆ Poor tyre choice for operating machinery, especially trailers

- ◆ Extended grazing regimes

Compaction impedes the natural drainage in the land and exacerbates levels of run-off following rainfall events.

This winter the **Parrett Soil Management Group** led by FWAG will be focussing its efforts on raising awareness of compaction caused by cultivations and incorrect machinery settings.

## Identifying compaction and good subsoiling

Compaction can be found throughout the soil profile:

### Surface layer (0.5 cm depth)

Capping of the surface layer is commonplace on light sandy soils with poor aggregate strength. Typical symptoms are the creation of rills and gullies following periods of heavy rain.



### Cultivated zone (5-20 cm depth)

Often the presence of a compacted, impenetrable layer will contribute to increased surface erosion.



### Below the cultivated zone (20+ cm)

'Platy' or horizontal layers below the cultivated zone provides evidence of a plough pan that will impede drainage.



### Key action points for subsoiling

1. Monitor fields throughout the growing season and make note of the problem areas where crop performance is below par or water is slow to drain.
2. Excavate a pit (50 x 50 cm) and dig down below the plough depth (23-30 cm)
3. Check the soil profile for the presence of horizontal 'platy' layers and make a note of depth. Lateral rooting is normally a good indicator of a compacted layer.
4. Look at the colour of the profile. Blue-grey zones are often an indicator of localised water logging due to the presence of impenetrable compacted layers.
5. Check for signs of worm activity. A good selection of vertical and horizontal worm holes is evidence of a healthy soil.

### What next?

- ◆ Look at the wetness of the soil and assess whether it is safe to cultivate below the compacted layer.
- ◆ Review the available cultivation equipment and assess its capabilities, (Sometimes timely ploughing can be the most effective method of removing compaction in the cultivated layer).
- ◆ Check your cultivation equipment: -
  - ◇ Will you be able to penetrate below the compacted layer ?
  - ◇ Are the tines in good condition ?
  - ◇ Is the gap between the tines right for the operating depth ?
  - ◇ Can the tractor pull the cultivator without causing wheel slip ?
  - ◇ Does the tractor have the right wheel width and tyre operating pressure ?



### Guide to subsoiler settings

Leg settings:	
Conventional	1.5 x working depth
Winged	2.0 x working depth
Winged + leading tines	2.25 x working depth
V shaped	2.50 x working depth

In most cases compaction can be removed by timely and correct choice of cultivator.



Before hitching up the subsoiler have a wander across the field with a spade. You could end up saving time and money

If in doubt speak to your local machinery supplier for guidance—they are there to help you!

### !! Remember !!

Untimely cultivations of wet soils increases compaction through smearing. It may be better to delay deep cultivations until the Spring or after the following crop.

## Flood retention demonstrations on farmland

With the lengthy and almost imperceptible phase of negotiations, licences, agreements, tendering and contracts completed on three of the 'Farming Water' demonstrations we are pleased to be able to report that the exciting phase of ground works has now commenced.

In this article we are reporting from two of the farms where work is underway.

If you would like to find out more about these farm demonstration projects, for example, what PCP hopes to achieve through them or the project management or engineering aspects do contact us.

Dan Alsop the project engineer is also happy to lead site visits and conduct presentations for groups. All the parish councils affected by these schemes have been offered this service.

### Bower Hinton Scheme

The c. £37,000 scheme at Bower Hinton Farm, Martock, commenced on 7th September 2004. The following 7 days (including 3 days of torrential downpours) saw the contractor (JTT of Exeter), complete scrub clearance and topsoil stripping, dig 60% of the pond, lay the outlet pipe and begin construction of the embankments (see photos 1 & 2).

The pond will be excavated lower than shown in the photos so that it lies well below the normal water table. This will ensure permanent water where reed beds will provide valuable wetland habitat. The 0.4 ha. multi-purpose flood attenuation pond is not linked directly to a stream but will be fed by surface water runoff from a catchment area of approx. 7 ha. The runoff will be diverted into the pond inlet via the silt trap (photo 2). The pond outlet feeds water into the River Parrett. This outlet (photo 1) will stay open most of the year but upon receiving a flood warning from the Environment Agency the farmer will close the outlet, which will remain closed until the flood peak in the River Parrett has passed.

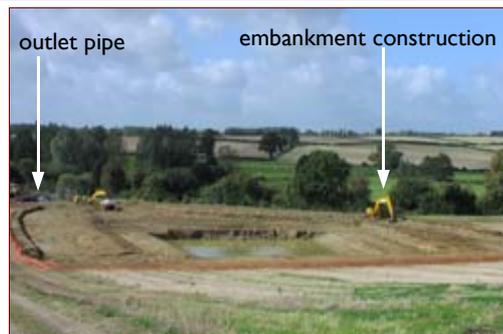


Photo 1. Bower Hinton Farm - view of work, main pond constructed, laying pipes and building banks (14 Sept 2004)



Photo 2. Bower Hinton Farm - main pond holding recent rain; silt trap in foreground (14th Sept 2004)

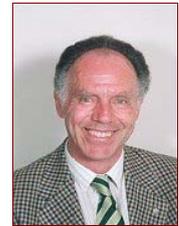
### Creedy Bridge Scheme

Upstream from Bower Hinton at Creedy Bridge the contractor (SWC of Bristol) has nearly completed scrub clearance and topsoil 'scalping' of a 2KM long strip along the River Parrett in preparation for construction of low level (2ft. high) embankments.

These banks do not intend to keep flood water out but will be low enough to enable overtopping by floodwater which will then be trapped within a retention area. Approx. 15,000 cu metres of flood water will be able to be held within these banks. This water will be released via a hand operated weir once the flood peak has passed.



Photo 3. Creedy Bridge - Digger scraping the turf and topsoil in preparation for building the low retention banks along the Parrett. Ham Hill in far distance (14 Sept 2004) .



*"Farming at Bower Hinton all my life I have often thought how the depth of flood on the moors would be lessened if floodwater could be held back here by a dam and released in a controlled way over a few days."*  
Oct 2002

*I am delighted that this idea has now come to fruition. To see the ground work at Bower Hinton underway, and progressing as quickly as it is, I am sure we will be up and running this winter."*  
Sept 2004

Patrick Palmer (Farmer & SSDC District Councillor)

