

The Taw, Torridge and North Devon Streams Strategic Partnership

Winter 2014 /15 Newsletter

This is the first newsletter in 2015 from the Taw, Torridge and North Devon Streams Strategic Partnership. This edition will highlight the current issues within the catchment with a focus on organic manure applications, grassland compaction and CAP Reform, including information on the [NEW GRANT SCHEME](#).

Diffuse Water Pollution from Agriculture (DWPA)

As outlined in the spring 2014 newsletter, DWPA is a major concern within the catchments and a threat to water quality and aquatic wildlife. DWPA is comprised of a range of pollutants including Nitrogen, Phosphate, Sediment and Pesticides, and is very hard to manage.

2015 Visits and Reports:

To address DWPA within the catchment, the Partnership are providing **FREE** Infrastructure Audits or Soil Husbandry Reports (within the target area, see map on page 4) and Pesticide Advice visits (Barnstaple Yeo catchment only) throughout January 2015. If you are interested, please call **Tom Hynes** on **01271 388534** for more information.

At this time of year, winter manure applications pose a major water pollution risk and can contribute to DWPA. To minimise the risk of pollution from slurry and manure spreading, action the following steps:

Step 1: Identifying spreading risk

- A. Prepare a farm risk map and farm manure management plan,
- B. Assess risk at the time of spreading by carrying out field inspections to identify the immediate risk of runoff.

Step 2: Timing of applications

- A. **Closed periods (NVZ)**

<i>Closed periods:</i>	Grassland	Tillage (arable) land
Sandy or shallow soils	1 Sept – 31 Dec	1 Aug to 31 Dec
All other soils	15 Oct – 31 Jan	1 Oct – 31 Jan

NB: NEW RULE

There is a new limit on the amount of slurry and poultry manure that can be spread immediately after the closed periods. No more than 30m³/ha (2,700 gals/ac) of slurry or 8t/ha (3.2 t/ac) of poultry manure can be spread in a single application between the end of the closed period (31 Dec or 31 Jan) and the end of February.

- B. **Codes of Good Agricultural Practice (CoGAP)**


- Do not apply more than 50m³/ha (4,500 gals/ac),
- Do not apply more than 250 kg N/ha/year. This is equivalent to 42t/ha (16t/ac) of cattle FYM and 83m³/ha (7,400 gal/ac) of cattle slurry,
- Do not apply manure if heavy rain is forecasted within a 48 hour period; and
- Use low trajectory slurry spreading equipment, ideally use band spreader or injector technologies.

- C. **N Availability**

Manure nutrients are better utilised in the spring, therefore spring slurry applications pose a lesser risk to water pollution and are optimal for grass growth. The table indicates how the N availability % of cattle slurry, on medium soils is greater in the spring compared to winter applications.

Season	Au- tumn	Winter	Spring	Sum- mer
Soil	Medi- um	Medi- um	All	All
Slurry	25%	25%	35%	25%
<i>Based on standard values from RB209 , DM 6%</i>				

Step 3: Application methods:

Application technique	Advantages	Disadvantages
Band spreaders & injectors	<ul style="list-style-type: none"> • Reduced odour and ammonia emissions . • Reduced risk of surface runoff. • Reduced herbage contamination increases the time window for grassland application. • Allows a reduction in the non-spread zones around water courses (6m instead of 10m). 	<ul style="list-style-type: none"> • Scope for slurry injection limited by soil type and cropping. • Technology for even slurry distribution across spreading width increases cost compared to surface broadcast spreading.
Umbilical systems	<ul style="list-style-type: none"> • Increased work rate. • Reduces the risk of soil compaction compared to tanker operations. 	<ul style="list-style-type: none"> • Care needed to ensure matching of pumping with field application rate; also to avoid over-application on headlands. • Potential risk of burst pipes through pressure build up in the system, therefore a risk of point source pollution.
Broadcast spreaders (splash plate)	<ul style="list-style-type: none"> • The equipment is: <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> Simple Low maintenance Low cost. </div>  </div> 	<ul style="list-style-type: none"> • Reduced time available between spreading and cutting/ grazing due to sward contamination. • May not be suitable for spring top dressing of arable crops. • It is difficult to manage application rates as these are variable with slurry consistency.
Solid spreaders – rear discharge	<ul style="list-style-type: none"> • Capable of spreading a wide range of manure types. • Symmetrical spread pattern allows easy matching of bout widths. • May be suitable for spring top dressing of growing crops. 	<ul style="list-style-type: none"> • Limited range of application rates achievable with some machines. • May not be capable of low rates required for high N poultry litter.
Dual spreaders	<ul style="list-style-type: none"> • Capable of spreading slurry and wide range of solid manures. • Can achieve low application rates. 	<ul style="list-style-type: none"> • Side-discharge. • Asymmetrical spread pattern. • Causes difficulty with matching bout widths.

As well as the details above, the application technique can have an impact on the N availability of cattle slurry that is applied in the spring. Incorporating manure on bare soils can also increase the N availability.

Application method	Spring N availability (%)
Broadcast spreader	35%
Band spreader & incorporated slurries	40%
Shallow injector	45%

Grassland Compaction Alleviation Methods

What is the problem?

A healthy soil allows optimum plant growth and productivity. Compaction can limit grass growth and occur at a range of depths throughout the soil profile; from surface compaction to over 300mm deep. Compacted soils also increase the risk of surface runoff because drainage and water infiltration is impacted.

Compaction is more likely to occur in wet conditions. Soil compaction on livestock farms is caused by livestock, slurry and manure spreading and silage making. In arable situations, compaction commonly occurs during cultivations, harvest, spraying and other spreading operations in the tramlines.

What are the benefits of alleviating compaction?

- Increased oxygen to the roots and soil which increases grass growth,
- Improved drainage which increases water movement throughout the soil profile and reduces the risk of surface runoff and water pollution,
- Warmer soils which increase the use of fertiliser and encourages early grass growth in the spring; and
- More palatable grass because organic manures applied can access the roots quicker.



What are the solutions?

1. Identify soil compaction

First and foremost, you must assess the current soil structure. ADAS, SRUC, EBLEX, Dairy Co and AHDB have recently published the “[Healthy Grassland Soils – Four quick steps to assess soil structure](#)” guide to help identify compaction in grassland. This tool takes you through a four point plan to assess and score the level of compaction and structure quality. This document and further information can be found at: www.healthygrasslandsoils.com

It is important to identify the depth of the compacted layer in order to prescribe appropriate alleviation measures. Incorrect mechanical loosening practices can have negative impacts on the soil structure. It is also important to assess the moisture content and the “friability” of the soil to ensure that soil damage is prevented.

2. Select the appropriate alleviation option

[Top Soil Loosening: Tooth Rolls and Spiked Aerators](#)

Working depth: 15 – 20cm (6 – 8”)

Aerating the soil can help to alleviate topsoil compaction, such as poaching from livestock, and encourage water/air exchange through the topsoil or a matted sward. The soil conditions must be appropriate to mechanically loosen the topsoil.

Ideal working conditions: Dry surface conditions

[Sward Lifters](#)

Working depth: 20 – 45cm (8 – 18”)

Sward lifters should be used to alleviate deeper levels of compaction. To avoid sward and surface damage ideally use a machine with a front disc, leg and press roller. It is also important to work in the appropriate soil conditions. If the soil is too dry then loosening is likely to lead to the formation of large clods, sward tearing and excessive surface heave. If the soil is too wet, this can lead to increased soil damage through smearing and wheel slip; working in these conditions should be avoided.

Ideal working conditions: Autumn. In the case of a wet autumn, roll remediable works over to the following autumn, avoid working in the spring.

[Sub Soiling](#)

Working depth: 20 – 45cm (8 – 18”)

It is very important to get the working depth of the subsoiler and the spacing of the legs correct. As a rule of thumb these should be:

Depth: 2 inches below the base of the compacted layer

Width: 1.5 times the working depth

If the distance between the legs is too wide, this will result in sections of the compacted layer being unaffected and increase the risk of slumping where the soil structure is weakened. If the subsoiler is at an incorrect working depth then it will be ineffective at loosening the compacted layer.



Healthy Grassland Soils – Four quick steps to assess soil structure

Step one: Surface assessment
Look at sward quality to identify potentially damaged areas which require further assessment.

Good <ul style="list-style-type: none">• Sward intact• No poaching• Few whallops	Moderate <ul style="list-style-type: none">• Surface poached• Whallops in places• More sward spaces	Poor <ul style="list-style-type: none">• Surface compacted• Soil exposed• Flooding• Poor sward quality
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Step two: Soil extraction

- Dig out one spoote-sized block of soil (depth approx. 30cm). Cut down on these sides and then lower the block out leaving one side undisturbed
- Lay soil block on a plastic sheet or tray

Tips: When starting out it is useful to dig in an area where you know there may be a problem (eg a gullied) and get familiar with signs of soil structure damage.
Remember: Sample when the sward is moist – if the soil is too dry or too wet it is difficult to distinguish signs of poor soil structure.

Step three: Soil assessment
Carefully open the soil block like a book to break it up.

- If the structure is uniform – assess the block as a whole
- If there are two or more horizontal layers of differing structure identify the layer with the poorest structure
- Carry out the rest of the assessment on this limiting layer

Step four: Soil scoring
Break up the soil with your hands into smaller structural units (shown as aggregates).

- Assign a score by matching what you see to the description and photos provided
- A score of 1 or 2 is Good, a score of 3 is Moderate, and 4 or 5 is Poor and requires management action
- Record depth of limiting layer to assess management options

Mechanical Loosening: Dos and Don'ts:

DO:

- Dig soil pits
 - Assess the levels of compaction within the soil and employ an appropriate mechanical loosening method
 - Set the working depth 1–2” below the compacted layer
 - Carry out loosening in the autumn when the soils are at an appropriate moisture and where grass growth is declining
 - Ensure soil conditions are correct before mechanical loosening
- ### DO NOT:
- Carry out mechanical loosening in the spring and summer when the grass is growing rapidly. This can lead to disturbance and root death
 - Recently loosened soil is very sensitive to re-compaction, do not graze immediately after loosening and forage the field the following season to reduce ground pressure.
 - Do not spread slurry on recently loosened fields.

CAP Reform Proposals 2014—2020: Countryside Stewardship

Natural England are introducing a new scheme to replace Environmental Stewardship, the English Woodland Grant Scheme and the capital grants from Catchment Sensitive Farming (CSF); this will be Countryside Stewardship.

Details of the new scheme:

- The new scheme will be open to all eligible farmers, land managers, land owners and tenants.
- The new scheme will help:
 - **Wildlife & nature**, by restoring habitats, providing food and nesting habitat for farmland wildlife;
 - **Pollinators**, by providing pollen and nectar sources and nesting places where they are most needed;
 - **Forestry**, by encouraging sustainable woodland management and funding tree planting, and
 - **Water quality**, by encouraging changes to farming practices and providing capital funding for infrastructure.
- The first **application window will be July—September 2015**. In subsequent years the application window will be June— September.
- There will be a single start date of 1st January for all new agreements. The first start date is January 2016.
- The new scheme will be more competitive compared to ELS/OELS/UELS. The 3 main elements are:
 - **Higher tier** – the most environmental important sites, for example SSSIs
 - **Mid-tier** – targeted to widespread environmental management, broadly similar to ELS
 - **Hedgerow and boundary capital grants** (up to £5,000 for a range of environmental management options).
- Existing ELS/UELS/OELS will run the intended length of the agreement unless farmers have opted to exit their agreements due to double funding issues.

GRANT INFORMATION FOR 2015

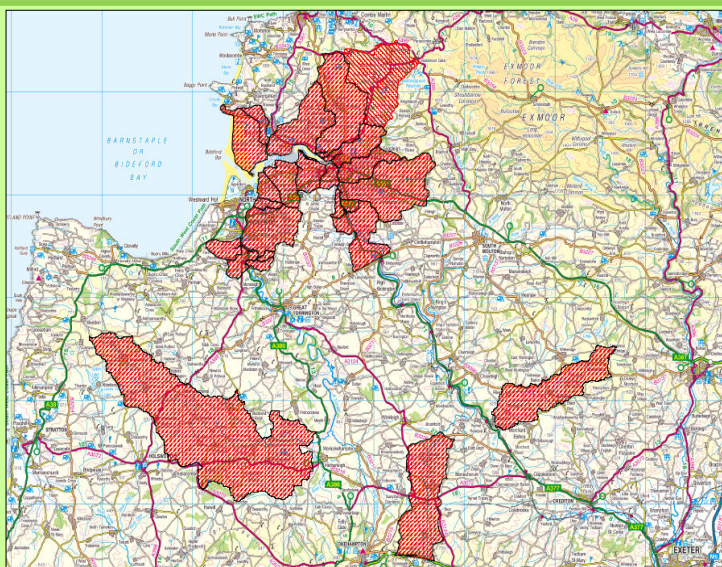
Water Quality Grants

Grant funding will be available for up to **£10,000 per holding** to improve farm infrastructure and reduce the risk of water pollution. This is similar to the existing CSF Capital Grant Scheme, although the details of the grant options are still to be released.

The application window will be from the 2nd March – 30th April 2015. The grant will only be available for farmers within a CSF target area (see map opposite).

Woodland creation grants in 2015

Applications will need to be for at least 3 ha of new woodland planting. The application window is expected to open in February 2015 for a limited time.



Contact **Gigha Klinkenborg** on **01271 388647** to check if you are in the target area and for information on the new Countryside Stewardship and Capital Grant Scheme. She will be put the relevant advisor in contact with you.

Two New Target Areas within the Taw Torridge Catchment: The Estuary, Barnstaple Yeo

A new target area around the Taw Torridge Estuary has been added this year. Faecal Indicator Organisms in the rivers are currently impacting on the shellfish within the estuary. A second new target area is the Barnstaple Yeo. Drinking water is sometimes taken from this catchment and raw water monitoring data shows that there are numerous pesticides detected and that their levels are rising, in particular Metazachlor, Terbutylazine, Clopyralid and MCPAA. The main focus in this catchment is to reduce the quantity of pesticides entering the catchment, which is currently breaching the Water Framework Directive water quality standards.