

# Upstream Thinking

## Newsletter for the River Dart

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### Welcome to the Upstream Thinking newsletter

We're really pleased to be underway with the next round of the **Upstream Thinking Project (UST)** in the **Dart catchment**. This round runs until 2025. As with every other aspect of life, Covid has meant that it's been a tricky start, but we've found that a lot can still be achieved through emails, and meetings in fields and sheds. As before, the rationale for this project is to improve water quality in the Dart catchment. We will work with farmers in different ways to achieve this and you can find out what is available on page 2 of this newsletter.

**Countryside Stewardship:** If your current agreement expires next year and would like to know more about options available to you or would like help in applying for a new agreement now is a good time to start thinking about it and to get in touch with Jo for expert advice.

#### Farm Advisors:

**Jo Garlick Devon Wildlife Trust:**

01409 413140

jgarlick@devonwildlifetrust.org

**Annabel Martin: Westcountry Rivers Trust**

07805773932

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# What's On Offer: This Autumn

**Soil Aerator** – this is available for loan free of charge in the Dart catchment. It is brilliant at improving drainage and soil structure on grazing and/or silage ground. Please get in touch with Jo if you would like to use it:  
jgarlick@devonwildlifetrust.org / 01409 413140



**Confidential farm advice and farm plans** — free visit from a farm advisor to offer advice on management of nutrients, soil, pesticides, yard infrastructure, watercourse management, and habitats.

**Countryside Stewardship applications** – free advice and full support with applications to the Countryside Stewardship Scheme, Mid and Higher Tiers. Devon Wildlife Trust have a high success rate with applications. Please contact Jo for further advice and support.

**Hedges and Boundaries grants:** Grants of up to £10 000 are available for hedge laying and stone wall restoration from the RPA. If you are interested Devon Wildlife Trust can offer advice on applying and give support with the application. Please contact Jo as above.



**Woodland Trust and Forestry England grants:** - Grants are available both from the Woodland Trust for 'Morewoods' and 'Morehedges' and from the Forestry Commission bigger Agri-forestry schemes. For more information and support with these applications please contact Jo as above.

**Capital grants for habitat management, pesticides, soil, and manure management** – based on the farm plan you may be eligible for grants of up to 50% for infrastructure works such as bio-beds for pesticide management, watercourse fencing, improved slurry and manure storage, roofing feed yards, silt traps, habitat management and constructed wetlands. Grants are available both from Devon Wildlife Trust and Westcountry Rivers Trust. Please contact Jo or Annabel.

**Free soil sampling**—Making the most of your soil can reduce the amount of artificial fertiliser that you need and reduce costs and improved the quality of your grass and silage. We can test for pH, phosphate, potash, and magnesium and to help you maintain high quality grass or arable land. Westcountry Rivers Trust offer this free service. If interested, please contact Annabel.



**Meadow creation and restoration**- We have lost 97% of our nations hay meadows which is having a huge impact on the numbers of pollinators and water quality. This year in the Dart we have helped to create 14ha of wildflower meadows. If you are interested in restoring or creating a wildflower meadow, however big or small, please get in touch with Jo.

# Marsh Fritillaries: We need your help

Article by Jo Garlick



The beautiful marsh fritillary was once widespread in Britain but since the 1970s has declined by 79% and become threatened.

The Marsh fritillary has the most colourful upperside of all our fritillaries, being a highly variable chequered pattern of orange, brown and yellow markings. The bright colours fade after a few days and leave the butterfly with a pale appearance. On Dartmoor, this butterfly is associated with wet grassland, as its modern name suggests, although in other parts of southern England it is found in dry calcareous grassland habitats

Marsh fritillary populations are highly volatile, with populations prone to 'boom and bust' from year to year, and the species requires extensive habitats or habitat networks for its long-term survival.

The landscape of the Dart catchment is dominated by grassland and moorland which provides plenty of suitable habitat for the marsh fritillary. However, because of historic tin mining, the draining of mires and wetlands, and recent agricultural practices, much of the suitable habitat has been lost. In addition, devil's bit scabious, the main larval food plant, is essential for the marsh fritillary caterpillars, but commonly lost by overgrazing and selective grazing by sheep.



Through the Upstream Thinking project, **Devon Wildlife Trust** will be working in partnership with the **Butterfly Conservation, Dartmoor Hill Farm project** and **landowners** over the next five years to help the recovery of the Marsh fritillary.

**We'd love to hear from you if:**

**You think you may have any Marsh fritillaries on your land and are interested in protecting them.**

or

**You want to help to improve your land for the Marsh fritillary.**

**(capital grants and area revenue payments may be available)**

or

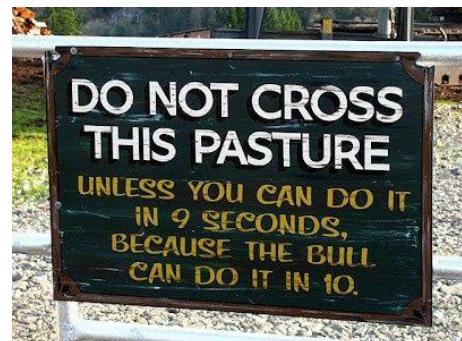
**You would like training on how to identify and survey the butterflies.**

**Please contact Jo on [jgarlick@devonwildlifetrust.org](mailto:jgarlick@devonwildlifetrust.org)**

# Countryside Stewardship: Latest news

Article by Jo Garlick

In amongst the turmoil of the last 6 months the government are still in process of passing the new agricultural bill which will change the way subsidies are given and how the land is managed. With the pending decreases in BPS payments farm business income will take a hit and if you are not currently in any CS scheme it is advisable that you apply to help offset these reductions. **Devon Wildlife Trust can offer a bespoke service to help complete CS applications, including Mid tier and Higher tier.** Below is the latest important information regarding the current Countryside Stewardship scheme and the new Environmental Land Management scheme.



## Countryside Stewardship

It has been announced by the RPA that the following will now apply to existing Countryside Stewardship schemes:

- The **RPA** are now responsible for Countryside Stewardship and Environmental Stewardship
- Mid and Higher tier applications will be open until **2024**
- **Expiring HLS agreements, Mid tier, and Higher tier** will be given the option to **extend** on a yearly basis
- Any agreements that have not expired before 2025 will be given the option to enter into the **new ELMs** (Environmental Land Management Scheme) **without penalty**

## Environmental Land Management Scheme



Over the last 50 years we have seen a rapid decline in our environment. Our country is already experiencing the effects of climate change. One in six properties are at risk of flooding and in the last five years the met office has recorded the five highest temperatures on record. Insect and bird populations are under threat and in decline, ladybirds alone have declined by 44% and birds such as the once common tree sparrow have declined by 95%. Worryingly soil fertility is predicted to be depleted within 40 years and all this is just the tip of the iceberg. The new Environmental Land Management scheme aims to support the recovery of wildlife, improve air and water quality, reduce flooding and drought, and mitigate climate change.

Through ELMs landowners will be at the forefront of reversing environmental declines and reshaping the future of farming in the 21<sup>st</sup> century. Much like the existing countryside stewardship there will be different entry levels depending on how you farm what you are doing for the environment. The different entry levels are broken down into three tiers and detailed below:

### Tier One

- Aims to encourage environmentally sustainable farming and forestry for example using cover crops, planting wildflower margins, and having nutrient and soil management plans

### Tier Two

- Aims to deliver locally targeted environmental outcomes i.e. the right things in the right places. This will include tree and hedge planting, creation of new habitats and management of species. This tier will also cover improvements to rights of way and education infrastructure

### Tier Three

- Aims to inspire landowners to make innovative landscape land use change such as creating new forest and woodlands, restoring peatlands and wetlands

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## Timeline for changes

	2020	2021	2022	2023	2024	2025	2026
ELM		ELM Scheme Design					
		ELM Tests and Trials					
			ELM National Pilot				
Transition			Direct Payment (BPS) phased out 2021-27				
		Country Stewardship Scheme					
<b>BPS reductions</b>				<b>ELMs rollout</b>			

## ELMs Payments

This is one of the big unknown questions at the moment. However, Defra has stated that the savings made through reducing BPS will be reinvested in the following:

- The department's Environmental Land Management (ELM) national pilot scheme
- Improving tree health
- Increasing the number of farmers entering Countryside Stewardship
- Making grants available "so that foresters, growers and farmers can invest in their businesses allowing them to do more, with less, add value to their products and contribute to tackling the climate crisis"

We will need to wait and see what is actually proposed, particularly in light of the current economic crisis. However, we would advise that any landowner should start to prepare for the decreases in BPS payments and if considering ELMs should start to look at their land and how it can be better managed for the environment. Please do get in touch with Jo at [jgarlick@devonwildlifetrust.org](mailto:jgarlick@devonwildlifetrust.org) for advice and support with this process.



# Herbal Leys: Benefits for Farms

Article by Jo Garlick

It is hard to not have heard about the worrying declines in the UK biodiversity from pollinators to birds, and the increasing need to improve grassland biodiversity. There are many concerns from lots of landowners about how productivity might be affected by sowing a diverse sward or herbal ley. Whilst the country is in economic crisis it is more important than ever for farmers to be maximizing yields for silage and hay production and herbal leys might just be the answer.

This article aims to look at the benefits and importance of herbal leys for today's farms.

## What is a Herbal Ley?

A herbal ley /species rich grassland contains a diverse range of grasses, herbs and clovers. It produces well-balanced forage and not just large volumes of grass. Many of the species used are deep-rooting and have the ability to unlock resources from deep in the soil profile. The herbal mixture does not demand high fertiliser inputs. Species rich grassland typically have over fifteen species of grasses and flowers.



## Benefits of Herbal Leys:

- **Biomass productivity** increases with plant species richness, both above and below ground.
- Multi-species grassland swards allow for **reductions** in the input of **fertiliser** and the intensity of management necessary to maintain current intensive grassland production, increasing farm business efficiency.
- Diverse grassland communities are typically **resistant** to invasion from **non-seeded species**. This stability may limit the need or frequency of ploughing and reseeding of leys.
- Yields from multi-species grasslands with low or no fertiliser input, are **comparable to yields** from low diversity, high fertiliser input systems.
- Multi-species grasslands require **less intensive management**, which promotes greater soil health and function by limiting disturbance to soil in the form of tillage.
- Grassland plant communities with high diversity also have higher rates of **nitrogen utilisation**, which means lower nutrient losses through leaching, and thus **reduced** potential for **pollution**.
- By increasing species richness in grassland it is also possible to **increase carbon** (C) sequestration and storage.
- Species-rich meadows are considered to be **aesthetically pleasing** and can increase the perceived value of a landscape from a cultural or recreation perspective.
- Legumes and herbs have potential to **improve mineral** and **protein** content in grass swards for cattle.
- **Animals** fed on pasture are **less stressed**, live longer and are more fertile than those farmed intensively.
- Produces **higher quality** meat and milk.
- Food from animals that are grass-fed are **healthier** for **humans** to eat than meat produced from grain-fed cattle and sheep.
- There is great potential to produce more food from Britain's grassland, **reducing** the need to **import feeds** from abroad.

*Information for this article was taken from Pasture for Life - article by Ian Wilkinson of Cotswold Seeds and Farming Connect - article by Dr William Stiles: IBERS, Aberystwyth University.*

# Water Quality Monitoring: How to get involved

Article by Jo Garlick and Annabel Martin

With improved monitoring and testing of water quality the Environment agency have recently released the status of all our rivers. Shockingly all rivers across England have chemically failed including those in the Dart catchment. Four tributaries in the catchment have also been downgraded to only moderate for ecological status. Worryingly this will be having a widespread impact not only on the water quality and biodiversity of the tributaries but also the species that feed on the invertebrates such as birds and bats.



Through Westcountry Citizen Science Investigation (CSI) project, we would like more people in the Dart catchment who live near a stream or river to sign up to help monitor the water quality. No experience is necessary, and the data you will provide will help us understand what is happening to our own rivers and streams.

It is hoped that in the next year those who are part-taking in CSI may be interested in further involvement by monitoring for invertebrates too, such as Mayflies, through kick sampling. Mayflies are an excellent indicator of the health of the water as they are very sensitive to any levels of pollution. Again, no experience is necessary, and training will be provided.



*Mayfly larvae*



*Kick Sampling Technique*

To sign up for **CSI** please follow the links to <https://wrt.org.uk/project/become-a-citizen-scientist/> to find out more and email Lydia at [cси@wrt.org.uk](mailto:cси@wrt.org.uk) to sign up.

Or alternatively contact Jo Garlick at [jgarlick@devonwildlifetrust.org](mailto:jgarlick@devonwildlifetrust.org) / 01409 413140



# Soil: Keeping it safe this winter

Article by Annabel Martin

Keeping soil in the field over winter can be a real challenge. Recent winters – last year a fine example – have tested farming practices. Persistent rain and minimal dry spells leave soil in a state of perpetual saturation and fields become very easily damaged by wheels and hooves. Preventing soil erosion and muddy water runoff is important for so many reasons. Most obviously, it is the only growing medium we have, and needs nurturing. There is the risk of fines or BPS deductions when soil is seen to have eroded over an area of 1 hectare, even when it stays in the field. Soil getting onto roads is a safety hazard, and once on the road it all too quickly ends up in the river. Fine silt in the river cements spawning gravels together meaning that fish cannot lay eggs, or if they already have, those eggs will be deprived of oxygen and will die. These are our top tips for reducing the risk of losing soil this winter:

1. **Maize** — at the time of writing (end of Oct), most of the maize in the Dart catchment has thankfully been harvested and has been in the clamp for a good 3 weeks. Whilst previous advice has always been to follow maize with a 'cover crop' of winter cereal or grass, this is only advisable if the cultivations and drilling can be achieved in good conditions and early enough to cover the ground before winter truly sets in. It is also vital to take out any sub-surface pans with a ripper, although this can only be achieved with the soil in optimum condition (same as for ploughing). Acknowledging that people don't want cereals too far on because of disease problems, there needs to be a balance found so that the soil is adequately covered. If it is too late to establish a seed bed, leaving the field rough ploughed is a good alternative and helps rainwater to percolate. If it is possible to achieve a rough cultivation and broadcast a fast-growing green manure then better still – the soil biology will benefit from the growing roots over-winter, organic matter can build, and then there will be available nitrogen for the following crop in the spring.
2. **Late grass re-seeds** are very vulnerable to soil wash so may be best left until the spring.
3. **Cereal stubbles** usually survive the winter very well but if the field has compaction at plough depth, sub-soiling may be advantageous in a dry spell. Best to **check with a spade** or ask for a visit from UST to assess soil structure.
4. Fields that are **at risk**, such as grass re-seeds, maize stubbles, winter-harvested vegetables, or winter cereals can lose a lot of soil as **surface wash** (as opposed to erosion that shows up as gullies in the field). Soil wash shows itself as muddy water running out of the gateway. Using **straw bales across a gateway** or on a track, can trap a significant amount of sediment and prevent it from getting onto the road. Soils in the Dart catchment are naturally free-draining so it is worth checking land to see if there are any compacted layers preventing water from percolating.
5. **Take a closer look**—having a look at fields with a spade will help with decision-making. Regularly silaged fields are worth checking as they carry so much traffic, as well as fields in the arable rotation.
6. **Have a look after and during heavy rain**—not a popular pastime but having a look at gateways, field edges, and watercourses during and after heavy rainfall events is the quickest way to see if you are losing any soil from your fields. It also shows you the pathways that transport soil onto roads and then usually into watercourses. Tracks often funnel soil wash onto roads – it might be possible that a solution can be worked out using a UST capital grant.



1: moderate compaction from grazing

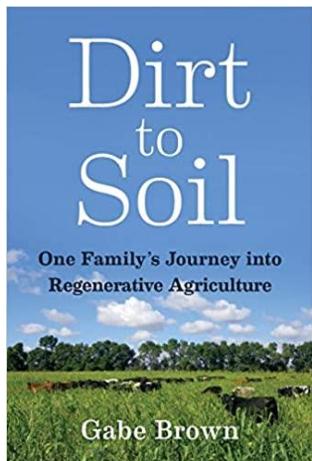
2: tracks often funnel soil erosion, even in woodland. Grants for cross-drains and silt traps are available from the UST project.

**To discuss soil issues on your farm, contact Annabel on  
07805 773932 or email annabel@wrt.org.uk**

# Recommended Reads

## Dirt to Soil: Gabe Brown

**Regenerative agriculture seems to be a buzz word around at the moment but what is it, and does it really have a positive impact on the farm business and the environment? The book below is a brilliant story with plenty of technical detail about one family's journey into regenerative agriculture.**



Gabe Brown didn't set out to change the world when he first started working alongside his father-in-law on the family farm in North Dakota. But as a series of weather-related crop disasters put Brown and his wife, Shelly, in desperate financial straits, they started making bold changes to their farm. Brown—in an effort to simply survive—began experimenting with new practices he'd learned about from reading and talking with innovative researchers and ranchers. As he and his family struggled to keep the farm viable, they found themselves on an amazing journey into a new type of farming: regenerative agriculture

'**Regenerative agriculture**' is a conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services, supporting biosequestration, increasing resilience to climate change, and strengthening the health and vitality of farm soil. Practices include recycling as much farm waste as possible and adding composted material from sources outside the farm'

## MOORMEADOWS: Strength to strength

Article by Donna Cox



Good news for Dartmoor community group Moor Meadows. They have been awarded a grant from The Devon Environment Foundation, which will be used to expand the group into other regions of Devon, creating local regional 'More Meadows' networks.

Nearly 1000 acres of meadows on Dartmoor alone have been added by landowners to the Meadows Map:

<https://moormeadows.org.uk/map/>. Can you add yours?

Moor Meadows is for all those that love these beautiful and important habitats and who want to restore or create a meadow on any scale. Joining is free: <https://moormeadows.org.uk/join/>



# Natural Flood Management: Headwaters

Article by Mark Whiteside

The Dartmoor Headwaters Natural Flood Management Project, a partnership between the Dartmoor National Park and the Environment Agency, has been working alongside the Upstream Thinking Project in the catchments of the Dean Burn River and the River Mardle since 2018. These catchments were chosen for their mixed landscape of enclosed agricultural land, woodland, peatland, and common land, and crucially have a community downstream that have been affected by flooding in recent years.



The work begins from above the source of the rivers, working on peatland restoration and tin mining gullies, all the way down to its confluence with the main river. This holistic, catchment level approach means we can investigate the causes of flooding and then trial ways to slow, store or filter water.

In the Dean Burn catchment we have built leaky dams to slow the flow of water, causing it to initially build up behind the dam and then to slowly filter through the series of stone, willow, scrub and debris, helping to lower the downstream peak during heavy storms.

High up on the moor, water is collecting in large tin mining gullies which is then rushing, unencumbered, towards the heads of the rivers and then downstream. Over the winter we hope to alleviate this by building willow and timber leaky dams across Buckfastleigh and Holne Common in many of these large tin mining gullies.

## ***Examples of leaky dams***



In the next few months, we are piloting river restoration work on the River Mardle using leaky dams and brash to act as a silt and debris trap. As the silt builds up it will allow the water to escape during heavy rainfall from the eroded gulley into a field system. Raising the riverbed to previous levels will allow for the slowing and storing of water, and the resulting water table rise will have ecological benefits.

Focussing on the causes of flooding, one key factor are the soils, their natural hydrological properties, and their condition. We have commissioned soil specialists to conduct soil surveys across the entire catchments to better understand what we are dealing with and any practical remediation needed. The River Dart offers us a great chance to learn more about natural flood management and provides an incredible insight in how this could influence Dartmoor as a whole, as well as other similar systems in the UK. We plan to carry this knowledge into the future, continuing to collect data and working with all parties concerned so we can drive future projects and help find ways to protect residents.