



Wales Land Management Forum (WLMF)

Minutes

Title of meeting: Wales Land Management Forum (WLMF)

Location: Microsoft Teams Meeting

Date of Meeting: 6th June 2022

Present:

Zoe Henderson, NRW (Chair)

Ruth Jenkins, NRW

Marc Williams, NRW

Sarah Hetherington, NRW

Dennis Matheson, TFA

Rachel Lewis-Davies, NFU Cymru

Anthony Geddes, Confor

John Browne, NRW

Bernard Griffiths, FUW

Tim Kirk, Confor

Michelle Van-Velzen, NRW

Huwel Manley, NRW

Elizabeth Swinney, Wales YFC

Additional Attendees Present:

Rachel Jarvis, NRW

Dr Christina Marley, IBERS, Aberystwyth University

John Scullion, IBERS, Aberystwyth University

Dr. Phil Staddon, University of Gloucestershire

Hal Drysdale

Dr Peter Jones, NRW

Dr Rhoswen Leonard, NRW

Hanna Huws, NRW

Dai Jones, H W Forestry Ltd

Jane Ricketts, Cynidr Consulting

Thomas Vetter, NRW

Richard Thomas, Natural England

Geraint Powell

Secretariat(s):

Bronwen Martin, NRW

Apologies:

Martyn Evans, NRW

Fraser McAuley, CLA

Item 1 Introductions, Apologies and Declaration of Interest

1. The Chair welcomed all to the meeting and noted apologies.
2. Zoe mentioned that this meeting has a 'soils' theme which will include a range of presentations and discussions by members and guests.
3. No declarations of interest were raised in respect of Agenda items to be considered.
4. The group were reminded that the meeting was being recorded for the purpose of capturing the minutes and the digital file will be deleted once the meeting minutes have been compiled.

Item 2 Minutes from the last meeting, actions & matters arising

5. Once the meeting minutes have been reviewed and formally agreed they will be translated and published on the NRW website. The Group reviewed the minutes from the meeting held on 7th March 2022. There were a few clarifications pointed out which will be included in the published minutes. The minutes were approved as a true record.
6. There were no outstanding actions to discuss.

7. Rachel Lewis-Davies, NFU Cymru reminded the group that a meeting has been requested to discuss the reintroduction of beavers and asked whether there has been any progress in fixing a date for that.

AP June 01: Bronwen Martin, NRW to follow up the request for a meeting to discuss the reintroduction of beavers.

8. Anthony Geddes, Confor mentioned that he did not receive the contact details for NRW colleagues who are leading on the NRW website update. Marc said he would follow this up.
9. Dennis Matheson, TFA mentioned that Welsh Government are going to set up a working group on Tenancies. TFA spoke to the Minister a few weeks ago but this is not going to happen until the Autumn after the publication of the draft Agriculture (Wales) Bill.

Item 3 Confor Soils Presentation

10. Dai Jones, H W Forestry Ltd joined the meeting to discuss soil conservation from a forest operations perspective. Dai introduced himself and said as Agents, our ultimate responsibility is to absolutely protect the Client's property and fundamentally their soil (primary property).

AP June 02: Bronwen Martin, NRW to circulate a copy of the Confor soils presentation and contact details.

11. Dai started by discussing new planting and soils. Through the Glastir Woodland Creation process, the first thing is to draw up a Woodland Management Plan which will dictate what is done on the site. Primarily clients are wanting native planting for biodiversity which does not involve ground preparation work. If you carry out a lot of ground preparation works, it will impact the woodland carbon calculations for the Client.
12. Dai described the ground preparation process for sites where it is carried out but noted that they do not carry out continuous ploughing and try to turn over the minimum amount of soil needed for a mound.
13. Each specific site has an individual planting scheme and is designed and targeted for the features present (e.g., native broadleaf planting targeted in areas of wetter soils, steeper slopes, and direct planting into the sward). There are many ways that soil conservation can be considered when setting out these schemes.
14. Dai said some forest operations have the potential to cause soil loss/damage such as harvesting. The timing of operations is very important so that sites are managed correctly and carefully. Dai described some case studies including examples of planning operations to minimise the amount of tracking, planning brash routes, and carrying out site monitoring. An important aspect of soil conservation is allowing for proper reinstatement afterwards.
15. Another key point of good planning is considering and investing in the right facilities. This includes appropriate routes for haulage in/out and tracking whilst minimising soil

disturbance. Dai discussed the 'brash raking' process and how to minimise disturbance and protect the soil.

16. Dennis asked for clarification that planning permission is not needed for woodland. Dai said currently woodland does not need planning permission for change of use as it has its own regulatory processes (e.g., Environmental Impact Assessment, UKFS etc.).
17. Ruth Jenkins, NRW asked about knowledge and training within the industry and what more could be done to support this. Dai said bridging the formal training and qualifications is needed. There is an opportunity to increase working across the peer groups through things like training, mentorships, or internships. Ruth recommended including training on reporting problems so that people can learn from those incidents. Ruth suggested that there may be an opportunity to join up with those managing the Welsh Government Woodland Estate through knowledge transfer. Anthony Geddes, Confor said there are two opportunities: firstly, through continuous training/learning and secondly through improving guidance.
18. Bernard Griffiths, FUW said that farmers are being encouraged to plant part of their farm with woodland so are essentially becoming part-time foresters. Bernard asked whether it is more of a challenge for farmers bearing in mind that they are already running a business with time constraints and other regulations to consider. Dai said firstly, if a farmer is interested in tree planting, then there is a sector available to help assist them because they will provide the right advice and a very competitive price to do things well for them. Secondly, Dai said he would like to see the farming sector help with the post establishment tending and after care phase as well as the maintenance of the woodland, for example pruning, protection from squirrels, maintenance of young trees and preintervention thinning. Dai said ultimately, he would like to see more farmers interested in their trees and woodlands. A big challenge is getting existing farm woodland into management, but farmers have many existing transferrable skills to manage their existing woodlands. Anthony agreed and mentioned that Confor will be running some short sessions on Wednesday 20th July at the Royal Welsh Agricultural Show to help farmers understand these opportunities.

Bernard asked if a farmer accepted that model, what would that do to the profitability of their enterprise. Dai said long-term, the profitability out of woodland depends on successful establishment and good aftercare. There is some income potential on the types of farm woodland that are starting to establish. The forestry sector can help release some of the potential value from that by working collaboratively with farmers.

19. Regarding soils and forestry operations, Rachel Lewis-Davies, NFU Cymru said as a membership organisation they are aware of some of the instances where things have gone wrong, so it is really good that people are addressing these issues and talking about training and skills opportunities.

Rachel recalled reading some recent research from Ireland which showed that brash left by clear felled forestry is a source of phosphates. Rachel asked what work NRW are doing to look at this issue, particularly in the context of recent Special Areas of Conservation (SAC) Report and failing rivers.

AP June 03: NRW to provide information on the latest position on phosphorus and forest management.

Item 4 The National Peatlands Action Programme

20. Dr Peter Jones, NRW joined the meeting to give an overview of [The National Peatland Action Programme](#).

AP June 04: Bronwen Martin, NRW to circulate a copy of the National Peatlands Action Programme presentation and contact details.

21. Peter began by providing some definitions and showed some images of a peat core sample and a road cutting through a blanket bog. Peat is composed primarily of the partially decomposed remains of plants, and it accumulates wherever waterlogging is sufficiently prolonged to inhibit the activity of decomposing organisms. This property of peat soils means they are intrinsically carbon rich, they are the most carbon rich soils of the earth's land surface and in the case of Welsh peatland store, on average around about 780 tons of carbon per hectare.

22. Peat typically accumulates at the rate of around 1 millimetre per year from the top down, and this only happens when water table levels remain close to the surface for much of the year. Peat accumulation only really happens where the surface vegetation of the peatland is composed primarily of peat forming species native to peatlands. A wide range of impacts can affect peatland hydrology and consequently the carbon capture and retention function.

23. Peter said in terms of soil classification, we followed the soil survey of England and Wales definition for peat soils as those 'containing either more than 40 centimetres organic material within the upper 80 centimetres of the profile or more than 30 centimetres where the material rests directly on bedrock'. Based on this definition, the very latest peat map of Wales, which was produced this year by Cranfield University under contract to Welsh Government ([Production of the Peatlands of Wales Map \(GOV.WALES\)](#)), estimates the total extent of our peatland resource to be around about 82,200 hectares, which works out as just under 4% of the land area of Wales. This mapping is now available via NRW Peat Portal produced as part of the Peat Programme ([NRW - The National Peatland Action Programme](#)). This provides a whole range of resources produced as part of the Cranfield contract, as well as bringing in a lot of other NRW mapping work relevant to peatlands. One of the useful elements of this portal is the peatlands of Wales carbon stock map, which shows us that despite covering only around about 4% of the Welsh land surface, our peat soils actually store around 38% of the soil carbon.

24. Peter discussed the current state of Welsh Peatlands and showed a diagram which illustrated peatland soils associated with various types of land cover across Wales. Peter then described the Green House Gas (GHG) unit emissions linked to each of these land cover types. In total, our baseline emissions currently are estimated at around about 510 kilotons of CO₂ equivalent per year, and it has been estimated that in order to realise the full contribution peatlands could make two net zero, we are going to have to reduce this by around about a third. It would not be possible to do that simply by focusing restoration on our semi natural habitat resource and it would not have been possible to do this based on current effort, which is where the National Peatland Action Programme (NPAP) and comes in.

25. The NPAP was launched in 2020, initially as a five year programme to restore Welsh peatlands and it is the main delivery mechanism of Welsh Government ministerial commitment to restore Welsh peatlands in order to help address both the nature emergency and climate change emergency ([NRW - National Peatland Action Programme, 2020-2025](#)). This commitment is underpinned by a comprehensive suite of policy, including the specific 'Policy 72 – Implementing a Peatland Restoration Programme' in the [Welsh Government: Net Zero Wales Carbon Budget 2 \(2021-2025\)](#). This combined delivery aspect of the programme (addressing nature and climate) reflects the very specific status of peatlands in 'good condition' as critical ecosystems, both for a range of specialised peatland species and also as important reservoirs of soil carbon and regulators of GHG emissions to the atmosphere. Peatlands in 'good condition' will be net sinks of carbon, whereas peatlands in 'poor condition' (such as eroded peatland) will be supporting a much-diminished biodiversity and can be leaking very large amounts of carbon greenhouse gases to the atmosphere.
26. Peter described the NPAP which has six main priority action themes designed to address the main context of degradation across the Welsh peatland resource and to enhance the ecological resilience of Welsh peatlands. There are a further 3 cross cutting themes which reflect the need to greatly improve coordination of effort in terms of delivery, monitoring, reporting, improving understanding and increased support across all sectors of the need for peatland restoration. Peter outlined the current progress of the NPAP and showed a map of the projects across Wales. Peter described some of the work undertaken through the NPAP including tackling peat erosion by restoring water levels within eroded peat gullies and stabilising peat surfaces.
27. Peter gave an overview of some of the key challenges and opportunities, including:
- Extent of degradation
 - Integration of NPAP delivery with Payment for Ecosystem Services (PES) opportunities and Sustainable Farming Scheme (SFS)
 - Increasing the capacity and capability of the Land Manager and Contractor sector
 - Creating a pipeline of future projects – Launch of the Peatland Programme Development Grant
 - Understanding the opportunities and constraints relevant to reducing GHG emissions from the most heavily modified peatlands
28. Geraint asked whether we need more cattle in the uplands. Peter said yes, one of the priority themes of the NPAP is better sustainable management of our upland peatlands, particular the grass dominated ones and cattle have a huge role to play.
29. Elizabeth asked how farmers can assist in the prevention of peatland erosion. Peter said the agri-environment options on offer over the last decade or so have been very effective in helping to begin to reduce some of the erosion we may have seen decades ago due to high stocking levels. In terms of actively going in and fixing erosion gullies, we are very keen to talk to farming partners about potentially using Section 16 Land Management Agreements. Peter said several of those have been used this year and we have also been running drone surveys to try and map peat erosion on partner land holdings across Wales, so we would be very happy to have a further discussion on that.

30. Anthony recalled Peter's comments about the real difficulty in getting appropriate or skilled contractor services and suggested that this is a potential opportunity for either forestry contractors or farming contractors to retrain or to skill up and to diversify. Anthony asked what support and training opportunities are available for those people and how is it being promoted. Peter said at the moment, we are not running a specific training programme but that is something they are looking into. We would like to develop something over the next 6- or 12-months if we can and then offer that as a training opportunity. Rhoswen Leonard, NRW said we have several different options to try and tackle this problem. Firstly, we are trying to develop a different procurement system that gives NRW access to a wider pool of contractors and allows contractors who want to enter the field a bit more opportunity from NRW. Secondly, the way we have structured the programme to offer grants out to partners diversifies the contractors that we are using as a programme. We have also been speaking to contractors in other parts of the UK. Rhoswen said we are also thinking of developing a Lantra course so that people with transferable skills have got that actual piece of paper, so that when they do go on to new procurements, they can demonstrate their experience, knowledge, and skills, which are the triad of evidence needed to get contracts. Anthony said he would be keen to follow this up because there is a lot of forestry equipment that is probably sat dormant for large periods of the year that might be appropriate for that usage.

Item 5 FUW Soils Presentation

31. Bernard Griffiths, FUW gave an overview of what the agricultural sector has to offer and deliver regarding managing, protecting, improving, and monitoring soils. Bernard's presentation was based around 3 themes.

1. Cross compliance and regulation
2. Soil management to optimise crop growth and business profitability
3. Carbon storage and future markets.

AP June 05: Bronwen Martin, NRW to circulate a copy of the FUW soils presentation and contact details.

32. Bernard said that soil health and biodiversity is paramount to delivering ecosystem services and profitable agricultural businesses. Farmers are well aware of this relationship.

33. Bernard outlined the cross-compliance rules that all farmers receiving the basic payment scheme must adhere to or they face a reduction in payments for breaching the regulations. Bernard described how farmers face penalties according to the type and severity of a cross compliance breach. According to a matrix provided by Welsh Government this can be costly for a farmer, and it does act as a deterrent. There is an appeals process, but that is very difficult for farmers. Farmers sow a crop 8 to 12 months in advance of harvesting and therefore predicting the conditions that far ahead, even with risk assessing fields according to slope and aspect, unexpected incidents can and do occur. Bernard said he looked at the Rural Payment Wales reports on the distribution of these breaches and most of them occur in Glastir contracts, Glastir diary

entries, animal movement records, mortality records and TB testing but not so much on the soil side.

34. Bernard gave an overview of the ecosystem services that healthy soils deliver including food production, climate regulation, flood risk reduction, water and air purification and biodiversity. Agriculture attributes to all 5 of those ecosystem services. Bernard mentioned that a quarter of the Earth's biodiversity, including earthworms, fungi, and bacteria, live in the soil. The complex interaction between these organisms maintains its fertility and structure, with additional benefits such as the provision of antibiotics. Bernard said it is staggering to realise that 50% of new antibiotics come from the soil.
35. Bernard described the Agricultural Land Classification grades in Wales. The land classification map is largely based on the soil type and quality and Wales is generally made up of relatively poor soils, but whilst good soil management can increase the output, the benefits are limited by that management. It takes an average of 100 years to generate 1 centimetres of topsoil. Bernard mentioned that in Wales, only around 7% of the land is suitable for horticulture and a further 10% suitable for arable crops and cereals. The majority of Wales is suitable for growing grass which supports the livestock sector and stores carbon. Development of Grades 1, 2 and 3a is avoided to protect the most productive agricultural land. Bernard said when you take those figures and apply them to the agricultural holdings in Wales, the classification data suggests that over 90% of holdings in Wales are either 'dairy', 'beef' or 'beef and sheep' because of the quality of the soils.
36. Bernard summarised what makes a healthy soil including bulk density, soil pH, soil organic carbon, soil N and soil P. Bernard also gave examples of the different soil health indicators for agricultural soils including organic matter, water retention, earthworms, structure, and microbial diversity. Bernard described how soil management through soil sampling, assessment and monitoring can help optimise crop growth and business profitability.
37. Regarding carbon storage and future markets, 58% of organic matter by weight in soils is carbon. As well as being a sink for carbon, soil organic matter is also an important driver for fertility. Bernard described the beneficial practices for soils to maintain carbon from an agricultural perspective.
38. It is vital that we restore soil health. Bernard said we need to value, maintain, and protect the existing huge carbon stores in soils as opposed to being focused solely on increasing sequestration. There is a danger that existing carbon audits and trading will focus the systems where most gains can be realised (e.g., arable soils) but fortunately that is a small percentage of land that we have in Wales but as a consequence, we will undervalue the existing carbon stores under permanent grassland.

Item 6 AHDB Soils Research Project

39. Dr. Phil Staddon and Hal Drysdale joined the meeting to provide a brief overview and share some outcomes from the project – [Best grazing options for soil health \(AHDB/BBSRC net-zero partnership\) | AHDB.](#)

AP June 06: Bronwen Martin, NRW to circulate a copy of the AHDB Soils Research Project presentation and contact details.

40. Phil said group of farmers contacted him via a consultant to look at some of the issues around grazing, managing grassland and how that impacts carbon. They got funding from the Biotechnology and Biological Science Research Council along with AHDB for about £50K to specifically look at these aspects and aim was to collect data and evidence on different impacts of different ways of managing your grasslands in terms of soil biodiversity and soil carbon.
41. Phil said he is based at the Royal Agriculture University and this project also involved collaboration with University of Gloucestershire – Countryside Community Research Institute (CCRI). This was a farmer led research initiative and the big aim of it was to address the local evidence gaps identified by farmers in order to get more information about how to enhance long term viability and sustainability of their farms. So, we wanted to see if we could identify specific things that were being done on some farms that maybe improved or maintained higher levels of carbon or higher levels of biodiversity in the system. The point of having a group of local farms was that anything that we came up with would likely be applicable to other farms in the local area.
42. Phil described the project science aim which was to identify the optimal grazing management that enhances soil health and carbon content. So, the different farms either have:
- Solely got cattle
 - Solely got sheep
 - Have a mixture of cattle and sheep
43. In addition to that, the farmers are also managing the fields in different ways; either they are rotationally grazed, continuously grazed or mob grazed. There is a large combination of different ways in which the fields are managed in terms of grazing within each of the 11 farms. Each site also has a different history, so some fields have been permanent grass and with very limited inputs for three or four decades. Other fields have had lime addition or manure addition.
44. Phil briefly described the methods they jointly developed with the farmers. It was decided that sampling would be undertaken within the fields in order to collect data on field management and history as well as actual soil data. In total, there were around 142 different fields were sampled to look at carbon and nitrogen content. For 83 different fields they also looked at DNA profiling to get a picture of the soil biodiversity but specifically looking at the diversity of fungi and bacteria. Phil described some of the data to give the group an idea of what this work encountered.
45. Phil mentioned that this has been a short project and has generally provided more questions than answers. There are several Master's students focussing on some of the themes to look into these further.
46. Hal said one of the aims of this project at this stage was to create a benchmark that can be moved forward and monitored. Hal reiterated that it is important not to jump to conclusions before analysing the information.
47. Geraint Powell asked whether it is possible to accurately track and measure soil carbon over time. Phil said yes if you have the money to do so. The most accurate and precise

method would be to use stable isotope labelling but that is very technical and is not that realistic at a farm scale; you would need to collaborate with scientists.

48. Elizabeth Swinney asked what variables were kept the same. Phil said all of the fields were managed quite differently with stocking rates, additions of manure, lime and fertiliser and timings.

Item 7 PROSOILplus Project

49. Guest presentation by Dr Christina Marley (IBERS, Aberystwyth University) providing an overview and update on the [PROSOILplus Project](#). Dr John Scullion (IBERS, Aberystwyth University) also joined to support the discussion.

AP June 07: Bronwen Martin, NRW to circulate a copy of the PROSOILplus Project presentation and contact details.

50. The PROSOILplus project aims to work with farmers across Wales to safeguard soils and optimized nutrient use efficiencies. The project focuses on livestock farms. Christina said the research approach is based on questions received from farmers and then they conduct on-farm participatory research. In addition to that, controlled studies are undertaken at IBERS to look at the research questions.

51. Within the project, there are a network of six farms based across Wales with a range of different geological geographical locations. The farmers are actively involved in monitoring the soils on their farms and look at a range of different soil management practices. This stems from their own interests, so the project is looking for farmer driven solutions to improve soil management.

52. Christina recalled the earlier FUW presentation about how managing farmed grasslands can protect soils and deliver many different functions. If we look at temperate farm grasslands and understand that the clock is already ticking for this climate emergency, we are looking for grasslands that can deliver this net zero production.

53. In terms of the science in the PROSOIL Plus project, one of the questions is how we can manage farmed grasslands to protect soils so that it can then also deliver these important roles. Christina gave an overview of two examples of the research showing:

- Use diverse forages in grasslands
- Use different methods for sward rejuvenation
 - Main aim = protect soil
 - Overarching aim = other ecosystem services improved

54. Christina said they have looked at a range of different forages. These are diverse forages with diverse routing systems, which include ryegrass, that is typically our control and then we have two legumes, either the red or the white Clover and then included a deep rooting forbe known as chicory. These can all used within livestock production systems. Building on some earlier work from the original proposal project, which was working with farmers to improve soil health across Wales, we showed that the use of these diverse forages can improve on soil biology. Christina showed one example of how under plots growing white Clover, there were significantly higher

numbers of earthworms. This data demonstrates that we also found differing levels of other soil mesofauna and microfauna under these different forages. It really exemplifies how when put together, they complement each other and improve soil biodiversity. The other knock-on effect was that they also started to change the soil structure. Some of our earlier work from PROSOIL project showed if you move towards the differing rooting systems under the soil, they start to shift the rate at which soil can incorporate water into the soil surface of the water infiltration rate. The implications for this at landscape level in terms of flood mitigation and controlling the impacts of climate change speak for themselves.

55. Christina said they wanted to build on this finding with the PROSOIL Plus project and look to see how these soil structure changes and also improve the resilience of the soil. So, they used the four forages mentioned, but in addition, they added a plantain, which is another deep rooting forbe with a differing routing system. We established these forages over a three-year period, and we were monitoring soil changes. They then established over the top of the plot areas a pure ryegrass sward. Once the ryegrass was well established, on one half of each of the plots was compacted with machinery to try and look at the legacy effects of these forages in developing a resilient soil and measuring the impacts of compaction. Christina described the soil density data where the treatment they imposed was successful with higher soil density under the compacted areas on each plot. To understand how those forages had created a resilient soil they needed to determine the impact on water infiltration. Christina described some graphs showing legacy effects if forages on water infiltration. This demonstrated the potential of diverse forages to protect soils and in doing so, making them more resilient to the impacts of climate change.
56. Christina mentioned a second experiment within the PROSOIL plus project looking at multispecies swards. They used the four key species mentioned, but this time they included them as single species, but also two species combinations and up to four species combinations. There was a total of 64 plots in four randomised replicated design which allowed us to look at all of those variables and how they interact.
57. Christina described the findings. In terms of water infiltration rate, the same effects were found with those four key forages with higher water infiltration rates, particularly where there were legumes in comparison to the perennial rye grass. The effects found when we had more diverse forages within the mixture, starting to gain those benefits in terms of water infiltration, wherever legumes are included with again, wherever the red Clover was included, giving some of the highest infiltration rates.
58. We were interested to know whether these benefits were continuing after the multispecies swards were sown and what were the legacy effects of these forages. Therefore, we then re-established again over the area where the plots were using direct drill, a ryegrass only sward and looked at how long those benefits remained in terms of soil health. The most recent data we have is from the last couple of months, where we have been monitoring how these diverse swards have got on when sown back to a rye grass only sward to influence water infiltration rates. Particularly a chicory and white clover combination has shown a benefit in terms of water infiltration rate that is beyond that achieved by the individual species swards, which were showing greater infiltration rates. This is one benefit of diverse swards, but another aspect was looking at how we could look to rejuvenate pastures so that they remain profitable for farmers, but also protecting soil. Grasslands are an essential store of organic carbon that are

almost 300 gigatons of carbon stored in just those few centimetres underneath temperate grasslands. A gigaton is 300,000 million tonnes of carbon so the store of carbon in Welsh grasslands is significant and it is absolutely critical that land management going forward retains the carbon we already have.

59. Christina said within the PROSOIL Plus project, they have been looking at how to rejuvenate swards using different establishment methods; either ploughing, direct drilling, with or without herbicides, and to look at maintaining soil and protecting soil carbon. Christina described some of the findings.
60. Christina welcomed people to contact her to find out more and said they will be focusing on some of the farmer related studies at an event on the 15th of June. They will also have a stand at the Royal Welsh Show. Christina also gratefully acknowledged the funders and provided her contact details.
61. Zoe mentioned it is great hearing about how they are working with the agricultural community and bringing science and farmers together.

Item 8 Soils Panel Discussion

62. This is a chance for attendees to ask the speakers questions and have a well-balanced discussion regarding soils.
63. Ruth said it was interesting hearing the different perspectives and information about the research that is being done. We have a great history of research in some of the land uses and land management regimes in Wales for different soil types. The focus that we have got now in understanding the value of soils in terms of food production, fibre production and also for biodiversity and the biodiversity of the soil itself is something that we should be considering more. It is important to bring the information and research together for a common understanding. Ruth mentioned that some of the gaps from [State of Natural Resources Report \(SoNaRR\) for Wales 2020](#) and other peer reviewed information allows us to reach some conclusions about a way forward for soil management in Wales.
64. Dennis recalled there was no mention of moorland burning. A lot of people believe it is absolutely essential to continue to be allowed to do controlled burning but this is up for discussion at the moment. Dennis also mentioned that there was a previous discussion by stakeholders on how payments for soil improvements could be incorporated into the new Sustainable Farming Scheme (SFS), but this would be difficult for tenants.

Dennis suggested there seems to be an anomaly; in order to preserve soil carbon, any cultivation must be absolutely minimal. However, the project involved permanent grassland in rotation with arable crops with no ploughing. Dennis said you cannot do this if you want to apply slurry because it has to be incorporated within 24-hours under the new Control of Agricultural Pollution rules, so that is directly conflicting with the minimum till system. Dennis asked whether there has been any research done on putting slurry on bare ground and how this affects the biodiversity.

Regarding burning, Peter said what we are hoping is that as peat restoration progresses, we reduce the risk or the wildfire risk that these systems typically encounter when they have essentially been abandoned (no or very little grazing) and

have a huge fuel load. There are contexts in which burning is a useful element of management, but very often the perception that burning is needed is related to ecosystems which are actually quite degraded in the first place. The only reason we have got into the 'habit' of burning is that they are far drier than they should be because they have been drained, or otherwise modified. If we get them to the state they need to be in to maximize their carbon retention and capture function, then ideally, they will not actually need regular burning. This is quite an important endpoint to aim to get to.

Regarding future potential SFS payments, Peter said we have to ensure that land managers get rewarded for the ongoing sustainable management of peatlands once the initial fix phase of restoration has been completed because that is how we will ensure the benefits are retained.

65. Rachel Lewis-Davies, NFU Cymru said from a farming perspective, it is really hard to draw any clear conclusions from the research and knowing what to do for the best looks like a big challenge. Rachel mentioned ongoing work that NFU Cymru are doing with Welsh Government to explain that actually knowing your carbon position or your net farm balance is really challenging for farmers at the moment with the complexity of all the carbon audits. Rachel said in relation to soils, other devolved nations are also looking at this. For example, Northern Ireland are currently in a programme of sampling every field parcel in Northern Ireland to understand nutrient levels but also to understand soil organic carbon. Understanding that baseline would be very interesting for farmers and from there they could start to navigate what they can do to maintain that soil carbon but also look at opportunities to enhance it where possible.
66. Huwel Manley, NRW said there is often a focus on soil carbon and sometimes we forget about the biodiversity element. Huwel said much of the work discussed earlier is related to improved leys and asked Christina whether there has been any work done or proposed work on looking at semi-improved grassland with species diversity because often it is about how you crop that benefits both production and biodiversity enhancement. Christina said they would be really interested to look at the impacts across a range of different soils and look at species that are being used within different agricultural systems to try and understand how to maintain the productivity, improve the sward and potentially to increase the biodiversity.
67. John Scullion said we need to recognise that that we cannot achieve all of these ecosystem services objectives in a single site. The problem with that is there is a need to identify key factors, for example, where the hydrological services are and manage the sites for that rather than this idea that you are going to see biodiversity, carbon storage and other services.
68. Anthony questioned how we take all of this information and start to baseline it to understand the roles of extensively managed grassland, intensively managed grassland, the role of afforestation and ultimately look at full life cycling.
69. With regards to soil carbon, Geraint Powell questioned if we are creating policy around something that cannot be measured accurately over time. Therefore, should we be going back to more simple solutions rather than adding complication to complexity. Christina said the main key message is that if you manage and look after your soil health, then you will ultimately start to deliver all of these other functions. Anything that improves soil organic matter will improve the soil structure and the soil health.

70. Zoe thanked all of the presenters and acknowledged that there seems to be some practical solutions coming out of the research with suggestions to help farmers manage soils well.

Item 9 NRW Updates

71. Prior to the meeting, an Update Paper was shared with members with some brief information.

72. Ruth said currently there is a big focus around water and water quality. NRW are still working through the issues for our Special Areas of Conservation (SAC) rivers.

73. Ruth mentioned that NRW are engaging with Welsh Government on the biodiversity deep dive and perhaps some WLMF members are also involved in some of that work.

74. Ruth briefly reviewed the Update Paper and invited WLMF members to ask questions.

75. Dennis mentioned that NRW are the regulatory body for the new Control of Agricultural Pollution Regulations and asked how far NRW has got with setting up a body to do this. Ruth said NRW are having ongoing conversations with Welsh Government regarding resourcing and resources.

76. Rachel mentioned that regarding the SAC Rivers Report, we have been expecting NRW and Dwr Cymru Welsh Water (DCWW) to publish the results of the modelling on source apportionment for several months. Rachel asked whether there is a definitive date when we can expect to see that report. NFU Cymru have been trying to work with Mark Squire, NRW to get a meeting set up with DCWW to understand their baseline in terms of the land use assumptions, but that has not proved successful so far. Ruth said we are expecting the report but are still doing some work on it. We have a contract out at the moment to help us to do some of the modelling to make sure that we are in a position to be able to verify what is coming from DCWW. We are hoping that is going to be ready before the Royal Welsh Show.

Rachel said there seems to be a shift in emphasis, initially it was understood that NRW would be working with DCWW to publish this report; but since then, it seems like it would be DCWW publishing the modelling. Rachel asked who will be publishing and who has ownership of this work. Ruth said it will be one report, but NRW want to be in a position where it can be supported. Rachel suggested that meeting would be beneficial before publication.

AP June 08: Marc Williams, NRW to look into coordinating a meeting between NFU Cymru, NRW and DCWW to discuss the SAC Rivers report and modelling work.

Item 10 Update from FUW / NFU Cymru / Wales YFC / Confor / CLA / TFA / Welsh Government

77. FUW: Bernard Griffiths, FUW mentioned the deadline of 22 June for people to register for using professional plant protection products with Defra. Everybody has to register even if you are using a contractor to come out onto your farm to do it. It does not just apply to people using arable crops or cereals, it also applies to grassland farmers as well.

78. **NFU Cymru:** Rachel Lewis-Davies said NFU Cymru are awaiting the Sustainable Farming Scheme actions and structure, which is expected in the coming months along with the Agriculture (Wales) Bill which we understand is in the Autumn.

This week we have a series of events planned aimed at celebrating Welsh farming, this includes an event in the Senedd tomorrow. Our second Sustainable Farming Conference will take place in Pembrokeshire on Thursday. Preparations will then obviously turn to the Royal Welsh Show where we have a number of seminars in progress in terms of other work. We are working to respond to the UK Government consultation on the emissions trading scheme, which has a number of areas of high relevance to farming. We were also pleased to be involved with, alongside the FUW, at the Coed Cadw Hedges and Edges event a few weeks ago.

79. **Confor:** Anthony Geddes said that Confor are busy preparing for the Royal Welsh Show and ensuring that they have got an interesting and insightful range of presentations. There will be a round table on stakeholder engagement and how we can address the question of how we start the conversation about engagement and knowledge sharing about tree planting. Confor are also attending the Celebrating Rural Wales event at the Royal Welsh Showground this week.

80. **TFA:** Dennis Matheson said mentioned the tenancy working group in England which was set up in February. These meetings have met every three weeks and is reporting back to Defra along the way. Baroness Rock is due to give a presentation on that progress.

TFA are currently discussing with Welsh Government whether they have the legal powers to include the amendments to tenancy law, which were in the Westminster Agricultural Bill into Welsh law now, before the Agriculture (Wales) Bill comes in. TFA argue that they should be able to do this through legislative consent memoranda, but Welsh Government do not think they are able to. This is very important because one of the amendments was a new mechanism for having a dispute mechanism with a landlord on various things which you think were being done against a tenant, for example a dispute as to who is responsible for slurry stores.

Item 11 Any Other Business

81. Sarah Hetherington, NRW reminded the group that Dwr Cymru have another open window of their 'PestSmart scheme'. This is the free pesticide disposal scheme for farmers and land managers in Wales and registration closes on 31st July 2022.

AP June 09: Bronwen Martin, NRW to circulate the DCWW 'PestSmart scheme' information flyer.

82. The next WLMF meeting will be held on Monday 5th September 2022.

Close meeting