

Minutes

Title of meeting: Wales Land Management Forum (WLMF) Sub Group on Agricultural Pollution

Location: Microsoft Teams Meeting

Date of meeting: 16th September 2024

Members present: Professor Rhys A. Jones, NRW Board Member (Chair)
Dennis Matheson, TFA
Sarah Jones, Dwr Cymru Welsh Water
Sarah Hetherington, NRW
David Ball, AHDB
Nichola Salter, NRW
Dafydd Jarrett, NFU Cymru
Elin Jenkins, FUW
Sarah James, CLA
Gail Davies-Walsh, Afonydd Cymru
Einir Williams, Farming Connect
Creighton Harvey, CFF
Matt Walters, Welsh Government
Michelle Griffiths, NRW
Chris Thomas, NRW
Jon Goldsworthy, NRW
Cat Osborne, Welsh Government
Grace Bolton, HCC

Additional attendees: John Griffiths, Coleg Sir Gar (Item 2)
Neil Paton, Coleg Sir Gar (Item 2)
Alwyn Roberts, DCWW (Item 3)
Mark Charlesworth, NRW (Item 4)
Dave Jones, NRW (Item 4)
Sian Williams, NRW
Thomaz Andrade, NRW
Guy Mawle, Usk Local Fishery Group
Sharon Ellwood, DCWW
Jennifer Slater, United Utilities
Alys Routley, National Trust
Stephen Cheung, Welsh Government
Inoka T. Manatunga, NRW
Paul Edwards
Dr Susannah Bolton

Apologies: Chris Mills, Afonydd Cymru
Fraser McAuley, CLA
Gareth Parry, FUW
Rachel Lewis-Davies, NFU Cymru

Item 1. Introductions, Apologies and Declaration of Interest

1. Professor Rhys A. Jones (NRW Board Member and WLMF Sub Group Chair) welcomed all to the Microsoft Teams meeting and noted apologies. This joint session has been arranged for the members of the WLMF Sub Group, [Wales Fisheries Forum \(WFF\)](#) and [Wales Water Management Forum \(WWMF\)](#) due to the common interest in the substantive presentation topics.
2. The meeting is being recorded for the purpose of capturing the minutes and the digital file will be deleted once the meeting minutes have been approved.
3. No declarations of interest were raised in respect of agenda items.
 - NB: All members of the group have completed declaration of interest forms already but should also declare if they have an interest in anything on the agenda.

Item 2. Presentation: Gwaredu Scab / Welsh National Sheep Scab Eradication Programme

4. John Griffiths and Dr Neil Patton, Coleg Sir Gar joined the meeting to provide an overview and update on the Gwaredu Sheep Scab Project. Welsh Government have funded Coleg Sir Gar to work on eradicating Sheep Scab in Wales. Welsh Government have prioritised sheep scab as a priority disease – it is a huge animal welfare issue, effects production and impacts the image of Welsh farming. Sheep scab is a highly contagious parasitic disease that affects sheep and is caused by the mite *Psoroptes ovis*.
5. An industry steering group has been established to support the work of the project. John referenced some of the organisations and partners involved in the steering group such as FUW, NFU Cymru, NSA, Afonydd Cymru and gave particular thanks to individuals like Frank Jones.
6. John explained that at the start of the project, the amount of scab in Wales was unknown. There were 4.5 million sheep in Wales which essentially doubled in numbers to 9 million when lambs are born after Easter. Although lambs are gradually fattened and culled, numbers eventually fall back to around 4.5 million by Christmas.
7. The mite is prevalent in Wales and there has been a longstanding stigma amongst farmers of having sheep scab within their flocks. Previously, some farmers would try to treat it quickly and quietly rather than treating it properly and correctly.
8. Currently, the industry has two approaches to treat scab, one is by immersing the sheep in diazinon (the dipping approach) and the other is by injecting the sheep with a chemical that can kill the mite. Sadly, there is a growing level of opposition to the injectable method (for various reasons). Therefore, the Gwaredu Scab approach has entirely used the dipping method because they did not want to encourage more opposition to treating scab and also treatment of other conditions in a broader sense.

9. An opportunity has been identified where they could encourage the industry to step forward – there are now 30 mobile dippers across Wales. The project only uses mobile dippers and contract mobile dippers (individual farmers are not allowed to dip their own sheep within the project). This has been key to help professionalise the industry and undertake training by Gwaredu Scab. John described the importance of using the chemical at the right concentration, treating the sheep for the right length of time, disposing of the chemical correctly and many other steps. Gwaredu Scab has put a standard in place.
10. John explained that there was concern in the first year (23/24). Welsh Government had provided the budget, but they didn't know if farmers would be contacting them asking for help or whether the stigma factor would override the situation. In the first year, the project dipped over half a million sheep and every one of those flocks were confirmed to be infected with scab. Neil said we must get a vet to diagnose – the vet must find a live mite on one sheep within a flock (index flock). The neighbours around that flock are then contacted to inform them that there is scab in the area. Some farmers will say they have scab, but others will never want to admit it. Once informing them that there is scab in the area, they can be offered a free test and if found, we dip them all. We don't just dip that one index farm, we dip them all to try to clean out the cwm/valley, mountain, common etc – to prevent reinfection. Some sheep farmers will not realise they've got scab in the early days of infection, but we aim to prevent the spread. Other flocks will be the source of the infection, and these farmers are targeted/influenced to take action. Unfortunately, there's a whole myriad of reasons why farmers sadly have sheep scab, but we are doing our best work with them.
11. In September 2024, the new window for dipping opened for this winter. John explained the ideal scenario, season and timing to dip sheep – scab is predominantly an autumn/winter condition. The window opened in September so that we reach the most opportune time to treat the sheep going forward. It's also quite budget savvy because a lot of lambs are now being culled and don't need to be treated. Last year, we opened the dipping window at the Royal Welsh Agricultural Show at mid/end of July. The timing of that window benefited the lowland flocks in Wales because they can access their sheep every day of the year. Sadly, this discriminated against the hill flocks that only gather occasionally. Therefore, the project is deliberately focusing more on the Commons and the upper hills this year because they didn't have the same chance last year. John discussed the challenges relating to the demand exceeding the budget. John mentioned that if farmers had their sheep dipped last year, they will not be prioritised this year but if later into the season there's unused budget, then we might revisit that decision. Although it doesn't look like it at the current level of demand.
12. John and Neil have a strong view that Gwaredu Scab must never pollute water courses in trying to eradicate sheep scab. Dwr Cymru and NRW are involved in the steering group and have been advising them from the outset. There is a commitment to take water samples on farms that have been treated by the programme. John described the monitoring process and collecting and testing water samples including tests undertaken by Frank Jones. Plans for this year include further monitoring and working with Dwr Cymru and NRW. We will be sampling 4 farms, 4 times – this will help us develop and learn from a greater spread going forward.
13. Ideally you should dip sheep on a fine day with a dry forecast for more than 2-3 days afterwards. However, we don't always get a forecast like that in Wales, so there might be occasions when we would be forced to treat due to the condition of the sheep but

there might be a possibility of drizzle in two days' time which would affect the risk level. We can investigate this and see whether that has an effect and then learn and share our findings.

14. Sian Williams, NRW recalled that John mentioned there's still a lot to understand around the extent and the spread of scab in Wales and asked if there are geographic hot spots and if it is more prevalent in certain areas? Neil said the historic stigma around scab has been a major problem with getting farmers to say whether they think they have sheep scab and they have struggled to get any realistic and relevant data as to where sheep scab is present. Some studies have been done by colleagues in Bristol and colleagues at the RVC that suggest that the hotspots are near the Chester area, North Wales and Powys. However, this has not been massively helpful in terms of being able to target work. The data we've got suggests the amount of scab is proportionate to the number of sheep in an area and that is as refined as we can be at the moment (e.g., the higher the concentration of sheep, the more likely it is to pass from one flock to another). Neil discussed scenarios which help scab cases to peak in the autumn such as management practices, gatherings, housing close together, longer wool which creates a better environment for the mites etc.
15. Einir Williams, Farming Connect asked about the process of obtaining contact details for commons graziers and asked whether Farming Connect could help share information. John said it is open to all commoners and explained the approach – 'all in or we are out'. There is also a risk that the programme will become oversubscribed. Einir asked whether they still needed contacts for secretaries of the Common Grazing Associations. John said it would be good if Einir could send details to him.
16. Sarah Hetherington, NRW mentioned that Welsh Government have a list of the Common Grazing Associations and contacts. Regarding the data from the first year, Sarah asked about the potential success rates in terms of reinfection and whether sheep scab eradication is viable. John said the half a million sheep came from just over 400 flocks. We've endeavoured to phone every farmer with a flock treated by Gwaredu Scab around 6 months after treatment. This has been a rolling programme throughout the spring of this year, and farmers were asked how happy they were with the service and how the sheep are (e.g., did they stop itching after treatment and have they stayed clear). It has been really encouraging as a very high percentage of the flocks that we've treated have stayed clear. Many farmers had never used mobile dippers before and were very positive about the experience.
17. Creighton Harvey, CFF said he was encouraged by what had been said so far and asked about the industry's resistance to using mobile dippers. John said it is more about individual circumstances as there is a range of farmers within the sheep industry in Wales, for example hobby farmers right through to commercial enterprises. John mentioned the practicalities and economic challenge of farmers having their own dipping facilities (e.g., a small hobby farmer is unlikely going to have their own dipping facility and is therefore more likely to use a mobile dipper). Creighton raised the possible impact of peer pressure and asked how likely neighbouring sheep farmers are to put pressure on those who have been resistant to the dippers coming onto farms. John said the programme aims to bring the issue to the surface and diminish the stigma – initial conversations are key. This is an attractive offer from Welsh Government, and we must be entirely grateful for their support. It is really good when farmers are vocal and positively encourage each other to get on board. John reminded the group that they also want to use the funding in an efficient way.

18. Guy Mawle asked about the dipping numbers for this year. John said the programme is constrained by the budget. More sheep could have been dipped last year, but we had to stop because of budget commitments. John discussed the overhead costs such as the mobile dippers, the chemical, disposal etc. Guy asked how much dipping goes on outside of the programme. John said there is a tremendous amount of dipping undertaken by the industry. The project has helped the industry by organising CPD days and have promised that we would not take each other's business. John has also arranged for the industry to be a part of discussions with NRW, Dwr Cymru, the chemical manufacturer and Health and Safety Executive. Guy asked about the disposal of used sheep dip. The used sheep dip from Gwaredu Scab is disposed of via licenced waste treatment facilities. We have demanded that those involved in the programme do this properly – it all has to be done to the highest standard and efficiently. Farmers are allowed to store up to 20,000 litres of used sheep dip for up to three months. Lorries can take more than that, so we've tried to create a milk round approach which involves groups of dippers working together to coordinate collections of used dip which reduces the overall cost. One of the project Officers has become a specialist and they've set up WhatsApp groups for the dippers to be able to quickly inform each other of how much dip they've used and needs to be disposed of.
19. Sarah Jones, DCWW raised the role of local Marts in sheep scab, reinfection, biosecurity etc. Sarah asked if there has been any engagement with Marts to help farmers. John said there is somebody from the Local Mart Association on the steering group for that very reason and to cascade key messages. Marts are trying to provide a service for their community whilst trying to hold standards and reputations high. However, it is difficult when scab is so prevalent. We have looked at facilitating a service where a mobile dipper goes to a Mart at their own commercial risk to dip sheep at the point of exit (that are for breeding or for keeping). John explained that you wouldn't want sheep to be dipped on the way in because some would be for cull. However, there are costs associated with this so you would need the interest from farmers and their willingness to pay a bit extra to have their sheep dipped there and then. One mobile dipper has taken this on board in the south east. We've also agreed to give him work later in the day so that he will have had a financially viable day. We hope this will have taught farmers a way of reducing their risk when trading sheep. The auctions and the auctioneers are also key to the success or failure of this effort.
20. Dennis Matheson, TFA discussed the many challenges relating to dipping sheep including the short window, availability of mobile dippers, reinfection risk and the likelihood of consecutive dry days. Regarding the injection method, the 2% solution is quite difficult to administer in the base of the ear and the 1% solution (which is not generally recommended) needs to be done twice but is easier to administer. The problem with injecting is that you probably don't inject all the sheep properly, although one of the advantages is that it's a wormer as well. Additionally, it's no use just one farmer dipping, close neighbours also need to dip. If nobody else around you dip their sheep, then scab will continue in reinfection circles and becomes a permanent problem. Dennis asked if the programme has considered feral sheep in forestry, of which there are quite a lot with no identification.
21. Dennis suggested that another possible source of spreading scab is sheep shearing contractors, who probably attend half a dozen farms in a day. John said the weather is one of our greatest challenges as Welsh farmers in general and is also challenging for dipping teams.

22. John said it is really important to check by doing a second gather. It's also better to dip a rogue sheep that nobody actually owns but is infecting the livelihood of other local farmers – it can be a perpetual problem unless addressed. Conversations with commoners and farmers have been key and they generally develop an appetite of being up for the challenge. John discussed eliminating rogue sheep which are in inaccessible areas to prevent perpetually re-infecting flocks.
23. In terms of contract shearers, John explained that one of the team's Technical Officers is a senior sheep shearing Royal Welsh champion. He has a tremendous amount of respect within the sheep shearing community in Wales and has been working with them to increase their knowledge of scab prevention. Due to seasonal work, a lot of shearers are also dippers. By bringing scab into the limelight, Neil has taught them in depth about the mite life cycle, the longevity of the host and the possible sources of re-infection. Throughout this learning, there has been some real jaw-dropping moments for example when they learn that the mites can live in their moccasins for up to a fortnight. We are also exploring sponsorship opportunities where people can buy the shearers two or three pairs of sheep shearing kit – this is not that expensive compared to the treatment of sheep. If an organisation wants to sponsor the shearers for a second and third pair of moccasins, shearing trousers or vests then it would likely help to reduce the risk of the spread of scab, re-infection and ultimately the risk of diazinon in rivers quite significantly.
24. Gail Davies-Walsh, Afonydd Cymru acknowledged that her organisation has challenged quite hard on diazinon over the past year. Gail thanked Neil and John for the work they have been doing with Frank Jones which seems to have moved forward. Gail reflected on the work of the programme, but suggested it is still only a small proportion of the dipping undertaken in Wales. It is important to understand how we move forward because there are still concerns around diazinon in rivers – what more we can do? We also need to collectively think about future funding, the scale of budgets and where money can be best spent. Gail recalled that almost 100% of the treated flocks within the project were infected with scab, which underlines concerns. Neil said they are looking at the geography of flocks, but it is a bias sample, the project is not randomly sampling. Farmers are coming to us because they suspect they have a problem. We have a lot of work defending the project from external experts in that farmers can't identify sheep; however, they can identify itchy sheep.

AP September 01: Bronwen Martin, NRW to share contact details for John Griffiths and Dr Neil Patton, Coleg Sir Gar.

Item 3. Presentation: Reducing risks to water quality from waste sheep dip

25. Alwyn Roberts joined the meeting to provide a presentation on the challenge of dealing with sheep scab and the waste products associated with it. Dŵr Cymru Welsh Water have taken a proactive approach to this challenge by working with NSA Cymru to establish a Sheep Industry Stakeholder Group to raise awareness of the risks associated with sheep dipping practices and disposal of the waste within drinking water catchments. Furthermore, they have commissioned Ricardo AEA Ltd environmental consultants to undertake research into the current disposal options and how future disposal pathways could be developed in Wales.

26. Alwyn began by providing an outline of the Catchment Management Water Source Approach – the guiding principle is one of prevention and not cure. The aim is to work with others like Gelli Aur and the Gwaredu Scab programme to ensure that raw water entering treatment works is of an expected, a consistent and a manageable quality so that fewer chemicals and less energy is needed during the treatment process.
27. Alwyn provided a high-level overview of the DCWW drinking water catchments. They abstract raw water from 116 individual catchments at any one time, covering an area of almost 11,000 square kilometres. The land within these catchments is subject to a variety of land use types and management practises. Agriculture, forestry and human settlements can all determine raw water quality entering treatment works and leave them vulnerable to risk. DCWW land holdings are very limited, they own less than 5% of drinking water catchments and of that 5%, a lot of that is in 999-year leases for NRW for forestry. DCWW have got very little control over how that land is used and managed. Therefore, as we prepare for the implementation of the proposed SFS, it's vitally important that we seize collaborative opportunities to influence land management policy and align delivery to help reduce risks to our raw water quality.
28. Although the active ingredients of sheep dip have been used as a vet medication, for the water industry, it comes under the umbrella of pesticides. In the water industry, the term pesticide covers a whole myriad of products (e.g., herbicides, insecticides, fungicides, molluscicides and plant growth regulators). Alwyn described the treatment process for pesticides within the water industry. The drinking water standard for total pesticides is 0.1 microgram per litre which is equivalent to one baked bean in 24,000,000 baked bean tins. The challenge to deal with pesticides and water quality is quite significant.
29. Diazinon has been referenced quite often in the last year. It is the active ingredient in sheep dip which is used to treat and prevent sheep scab. An estimate of the scale of the problem (with a hugely inflated assumption):
- If every ewe and lamb (9 million) were dipped once per year in Wales, that would generate around 84 mega litres of spent sheep dip per year. That would be equivalent to trying to fill 33 Olympic size swimming pools. Although not every ewe and lamb will be dipped, even if you're talking about 50% or even 25%, these are still significant quantities of liquid waste that needs to be disposed of.
30. From the experience of farmers and contractors, the provision of alternative disposal options to land spreading is sparse and is very expensive. More dipping is required to try and get scab down to manageable levels. However, treating more animals inherently means that diazinon is an emerging risk from a drinking water quality point of view.
31. Prescribed Concentration or Value (PCV) is the legal threshold for acceptable levels of contamination in drinking water for pesticides. Since January 2022, we've only had three exceedances and only one detection above PCV for diazinon and that was earlier this year. Alwyn showed a map from DataMap Wales of the locations of Environmental Permits for the disposal of spent sheep dip to land – there are currently 988 NRW disposal permits. This is an indication of where farmers or contractors will have land spreading permits to dispose of their own liquid waste or spend sheep dip. Of those, approximately 1/3 of them are in a Welsh Water drinking water catchment. DWCC appreciate the challenge of trying to tackle the problem of sheep scab, the scale of the

task and the requirement to do a lot more dipping across Wales and the need to work with others to address the emerging risk.

32. DCWW have established a Sheep Scab Industry Group with NSA Cymru which has engaged with different stakeholders and invited them to attend meetings and provide presentations and updates (e.g., NRW, Bimeda etc.). As a group, we have also provided some responses to NRW's consultation on the Environmental Regulatory Charging Scheme. DCWW are also supporting Gwaredu Scab with water quality monitoring, training etc.
33. DCWW have commissioned Ricardo AEA Ltd environmental consultants to undertake some research. Significant concerns and barriers for the sheep industry have been raised, particularly that they weren't able to find alternate solutions to land spreading. Contractors collect waste dip and send it forward to disposal sites, but these are very sparse and very expensive. Ricardo have been commissioned to do a gap analysis to look at these very issues. This work has been intentionally divided into two phases, phase one looked at the literature and regulatory framework, current availability of collection and disposal services, benchmarking of international practices and additional research recommended by the Sheep Scab Industry Group. Phase two is currently underway and is more of an engagement exercise with the liquid waste sector serving Welsh businesses. The industry group have appointed a subcommittee to work alongside Ricardo, and they have met on a few occasions to be provided with updates on progress on phase one, and that in itself generated some additional conversations and some extra topics and considerations to be factored into phase two. Some of the Phase 1 recommendations include:
- Review and update the relevant guidance on sheep dipping (e.g., NRW Groundwater Protection Code).
 - Review and update the training and information provided as part of the certificate of competence to purchase dip.
 - Further develop, promote and expand the list of approved sheep dipping contractors on the National Association of Agricultural Contractors (NAAC).
 - Develop and promote a sustainable and cost-effective SSD collection service and how to incentivise permitted waste sites to accept or increase capacity.
 - Phase 2 outcomes
34. Mark Charlesworth, NRW asked how we can ensure that those recommendations are taken forward. Alwyn said the industry group that we've established has got representation from NRW, Welsh Government along with the farming unions, NAAC, HCC and Gelli Aur – we are hoping this group of key organisations can find potential solutions. Farmers will also have to share the burden of cost, so it will be interesting to see the development of possible models.
35. Gail asked about PestSmart. Alwyn said unfortunately, PestSmart is currently closed – DCWW ran the pesticide disposal scheme (with government support) over the last few years for farmers and growers to register to dispose of unused pesticides and chemicals. However, when a chemical could not be identified, it caused a challenge when issuing a waste transfer note. This has been a barrier to renew the scheme, but discussions are continuing. Sarah Jones, DCWW clarified that the scheme did not collect waste sheep dip, the scheme collections were for unused pesticides etc. However, there's many lessons learnt from that scheme which can be brought into discussions around the collection and disposal of waste sheep dip.

36. Gail was surprised to see the map from DataMap Wales and asked if permits issued by NRW hold information regarding disposal route. Dave Jones, NRW said the permits are only for land disposal – NRW have records of the farms and where that dip is spread to land. However, not all of those permits are in use / in regular use, there's no mechanism until we do a compliance visit on any individual permits (e.g., we don't know the last time it was used). Some farms do not use their permit regularly and have held on to it because the annual charges are fairly cheap. Currently, we don't have numbers on how much is going to land versus the waste facility. Gail suggested that this is an area that needs to be tidied up. Alwyn mentioned that a lot of questions are asked when you purchase the product (e.g., how many sheep they have) but they do not ask about the disposal pathway – perhaps this is another way of collecting data to understand how much is disposed through land spreading permits and how much is taken away for disposal by a dipping contractor etc.
37. Eimir recalled that one of the key recommendations was to develop and promote a collection service. Based on her own experience, Eimir thought this would probably be really popular with the industry. Farming Connect also fund 80% of the costs of a 'safe use of sheep dip' course which usually cost roughly around £260 for the training and a test. Alwyn discussed the importance of education and training.
38. Dennis mentioned the increase in fees by NRW. Dennis said another advantage of injectable Cydectin treatment is that you don't get any runoff when it rains, however it can be excreted in the dung of animals. Cydectin is the only method that can be used on National Trust land because it doesn't kill dung beetles or other insects. Dennis asked if any studies have been done to see if Cydectin in dung gets into the water course and if it does, is it harmful? Alwyn said he was not aware, but his waste colleagues have got a chemical investigation programme, and they did look previously at Cypomethane and some potential links to livestock markets being possible pathways. Mark mentioned that NRW do some broad-spectrum chemical analysis. At certain sites, we can certainly look into the database and see if it's been picked up, but it might not be part of the database that we use for the analytical side of things.
39. Elin Jenkins, FUW said unfortunately, the cost of a permit to dispose dip to land is ridiculous and is a major barrier to smaller family farms. Elin asked whether there are enough waste disposal places for spent dip. If this is going to be the preferred disposal route in future, then there needs to be sufficient availability and capacity of facilities. Elin questioned the effect of increasing the cost of a permit compared with the prevalence of sheep scab in Wales and if there are links to water quality. Elin said it is reassuring to see so many permits on the map of Wales and recalled that there was only one breach of high chemical in Deeside is over the last two years. Alwyn clarified that all DCWW drinking water catchments have a rigorous drinking water safety plan and risk assessment but some of these samples may only be collected monthly and one detection is one too many, but there is no instrumentation for continuous monitoring of water quality for pesticides. Therefore, there may be more detections if we had the capability or the technology to monitor. The water quality standard is 0.1 microgram, but the Environmental Quality standard is an order of magnitude higher (0.01 microgram) – that's where NRW's monitoring has detected more EQS risks. Regarding the capacity of the industry to treat and collect waste dip, Alwyn mentioned that is a question that Ricardo has been asked to look into – it is very important to understand the capacity of the industry, whether there are plans to scale back and what other challenges are there. Alwyn mentioned the waste codes for disposal – sheep dip is recorded as 'agri-pesticides', so there could be other products being disposed of

using the same code. There's work to be done to try and clarify the exact quantities of waste dip being sent for disposal.

40. Rhys thanked Alwyn for his presentation and the interesting discussion.

AP September 02: Bronwen Martin, NRW to share a copy of Alwyn Roberts DCWW presentation and contact details.

Item 4. NRW Update: Sheep Dip

41. Dr Mark Charlesworth, NRW joined the meeting to provide an update on some of the work NRW are doing such as the Diazinon Investigation. Mark began by providing a background to chemical status which involved giving a classification for a range of chemicals in 2021, as part of the River Basin Management Plans (RBMPs). Monitoring resources were under significant pressure, and we were able to utilise monitoring done under the National Environment Programme from DCWW. Approximately 100 water bodies were classified for a whole range of different pesticides. Mark reminded the group that the pesticides standards that are set under the RBMPs is different to those set under the Drinking Water Directive.

42. Mark discussed the list of chemicals that indicated failures, including diazinon. We identified 8 water bodies that failed for diazinon, and some failures for cypermethrin but that's very much a precautionary classification and is being looked into further. Mark showed a map which indicated the location of these failures. We've since done a lot of further sampling and data analysis. A lot of the data is pointing towards high-risk sites in areas such as Powys and North Wales. The analysis was done against the annual average (e.g., average concentration over the sampling period). We've since done the 22/23 monitoring programme, and we have got a similar 70 sites or so that we're monitoring in this financial year.

43. There is significant concern around the impact of diazinon within our surface and groundwaters and we are taking a number of actions to reduce that risk. The Veterinary Med Directorate (VMD) approve insecticides for use in agriculture. NRW's role is the regulator of the waste dip produced, and in particular where disposal of waste sheep dip to land occurs. We do not regulate the dipping activity itself, only the waste which is generated.

44. Mark said NRW has seen a significant drop in demand for new permits to dispose of waste sheep dip to land and we are reviewing our regulatory approach and assessing whether we should continue to issue new permits to dispose of waste sheep dip to land in Wales.

45. NRW has taken a number of decisions that helps facilitate the disposal of spent sheep dip to a waste facility. NRW has issued a regulatory decision that ensures that sheep dip can be stored and bulked up allowing and facilitating that milk round collection approach (discussed earlier). NRW has had a strong influence on the Sheep Scab Eradication Programme. The project has been really good in trying to minimise any risk to the environment and we're absolutely delighted they took on board our proposal that all dip as part of that programme is disposed to a waste facility. That in itself has really helped develop that culture of disposing spent dip to a waste facility, rather than to land. NRW has also taken part in a number of different awareness sessions.

46. NRW has also been looking to improve the evidence base, for example, where to target further monitoring and compliance visits. Mark showed a series of maps and graphs illustrating ongoing GIS analysis to look at permit locations, sheep farm locations, invertebrate and fish assessments, diazinon data, groundwater data etc. This work is being done in coordination with existing research (e.g., Cardiff University). Mark also acknowledged the need to get better information and evidence around the use of sheep dip, the disposal routes, where it is being disposed to land and the quantities that are involved. Mark discussed the risks of sheep dip disposal as well as sheep getting into rivers after being dipped. Mark mentioned a new collaborative programme where funding has been used for the analysis of four sites. Monitoring will be done on multiple occasions upstream and downstream to build on some of the monitoring that's already been done.
47. In summary, Diazinon poses a risk to the water environment via sheep dipping and disposal to land. NRW's intention is to eventually move away from the disposal of waste sheep dip to land – this would bring consistency with how other hazardous liquid substances have been disposed of (the disposal to land of sheep dip was an exemption under the waste regulations in the first instance). This does require a multi sector collaborative approach and things are moving in the right direction. There is enthusiasm work on resolving this issue while ensuring we can continue to tackle scab. We are open to change and happy to take on board further recommendations to try and support that milk round approach of taking spent sheep dip away to a waste facility.
48. Dennis recalled that sheep dipping was compulsory and overseen by an Officer from Trading Standards up until around 25-30 years ago. This stopped when there was evidence of the dip being harmful to humans. Dennis described the historical dipping facilities on his farm that would have emptied the dip into local rivers and streams afterwards. Dennis asked if any work has been done to remove the diazinon from the solution. Mark recalled that Alwyn had referred to being able to neutralise the diazinon in the dip but had not looked in into this himself. Alwyn said Bimeda are looking into this. Alwyn suggested that there might be an opportunity to invite Bimeda to a future meeting to give an update on the progress of that work.
49. Dafydd Jarrett, NFU Cymru said the agricultural industry take this very seriously and farmers do not want to pollute the environment. In general, it's been proven over the years that if you do it correctly, the safe disposal on land is not an environmental issue and NFU Cymru will certainly want that option retained. There'll likely be less people applying for permits due to the cost, but it should still remain as an option. We're not against collection schemes and would support that method but it has to be cost effective. Perhaps there is an opportunity to reduce the risk even further by using products to neutralise the solution. Dafydd mentioned some other methods such as adding lime to the spent dip and suggested that this significantly reduces the potential for pollution when spread to land. We want to work collaboratively on solutions but do not want the ability to dispose spent dip to land to be removed completely. Dafydd recalled the GIS analysis work NRW are doing and welcomed the further work. Mark agreed that it is important to look at possible opportunities.
50. Dave Jones, NRW said he has previously met with Bimeda, and discussed their enzyme product and the hopes of bringing it back to market. NRW can look at it once there is a viable product in place to see how that might change the regulatory approach. The real benefit of that could be in opening up those disposal routes further. Currently, the dip has to go to particular facilities because of specific waste codes, but if

it is treated using another product, then it may open up where it can be disposed. This would hopefully have a positive effect on disposal costs. In terms of disposal to land, the permit numbers have been fairly static for many years and the numbers of new permits were offset by the number of surrenders we were getting. Sheep dip is the only liquid waste that gets disposed of to land that has no agricultural benefits. We're working together with various groups to explore viable alternatives.

51. Gail said Afonydd Cymru has found it difficult to engage with many organisations on diazinon so it's really good to hear that a huge amount of work is being done. However, there's lots more we could do collaboratively. Gail shared her appreciation to Thomaz Andrade, NRW who has been involved in the GIS mapping. Gail suggested that a lot of other organisations have invertebrate data in their own systems which perhaps isn't very accessible currently, maybe there is an opportunity for us to see whether we can pull that together for more of the targeted catchments where clearly there is an issue (e.g., Rivers Trust). Clearly there is collaboration on farms and perhaps there are some targeted geographical areas that could be explored. We tend to think about issues in isolation. Afonydd Cymru has previously facilitated work on farms and suggested they could also help with the diazinon work. Gail asked Mark to contact her to follow up on this suggestion. Mark said we have discussed combining visits/work with our agricultural compliance team. However, the agricultural compliance team is very focused on looking at nutrient risks rather than sheep dip. However, we are continuing to actively explore this. It was only through reusing DCWW data that we really got an idea around the scale of this issue, so we are really keen to use external data (wherever it meets the necessary standards) to better inform us.
52. Thomaz Andrade, NRW said external data was used for water, but the vertebrate data was all internal. We would be interested in seeing more external data to see if it can be used to increase coverage. Regarding adding lime to spent dip, Thomaz has looked at evidence from work that was done 20-25 years ago by the Environment Agency and there wasn't really strong positive evidence. Additionally, there are other issues like it still being classed as a hazardous waste even after combining it with something else. It is quite a complex area, particularly in terms of the legislation and the regulations of waste disposal (e.g., a new type of combined chemical mixture for disposal).
53. Elin said sheep dip has been used for many years with varying strengths. Elin recalled the data in Mark's presentation was only from about five years' and asked about historic data and whether trends have been identified. Regarding storage and the transportation of spent dip, Elin said it is really important to note that accidents do happen and there are risks associated with these options. Elin said it is important to understand and to look at the other contributing factors to the environment with equal focus. Elin asked about the hotspot areas and whether there has been any follow up with the permit holders in those areas to educate them and bring them on the journey of understanding the issues (e.g., it rained 2-3 days after dipping etc.). Elin noted that we should not painting the whole of Wales with the same brush as we've seen with other regulations – a targeted approach would support the industry. Mark said in terms of the compliance visits to areas where there are issues, which is something that we're looking into and indeed the local areas already do that. In terms of historical data, cypermethrin was used quite commonly in sheep dip. This was identified through a lot of Frank Jones' work and was a significant risk to the environment, therefore it was banned as a sheep dip (it still can be used as a pour on treatment). There has since been a switch from the use of cypermethrin to diazinon. The data shown earlier goes back perhaps 6 or so years in terms of the water data but if there is data going back

further, we can certainly look at that. In terms of treating all pressures equally, diazinon is just one chemical that causes a risk to the water environment. We do treat all chemicals the same and there's other huge programmes of work that are trying to reduce pressures from chemicals, nutrients and also physical pressures. Wherever we get a failure for a chemical, we are obliged by the legislation to put in place measures and investigate.

54. Rhys thanked Mark for the presentation and the subsequent discussion. There is a lot of positive progress being made in relation to sheep dip and diazinon and it has been interesting to hear about some of the ongoing work by different organisations. It is also great to hear about the collaborative efforts.

AP September 03: Bronwen Martin, NRW to share a copy of Mark Charlesworth, NRW presentation and contact details.

55. Members of the Wales Water Management Forum and Wales Fisheries Forum left the meeting.

Item 5. The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021: 4-year review

56. Andrew Chambers, Welsh Government said that this was an opportunity for the group to meet Dr Susannah Bolton, the new independent Chair overseeing the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 4-year review process.

57. Susannah mentioned that there are plans to have a more substantive item on the 4-year review at the next WLMF Sub Group meeting. Susannah provided a brief overview of her professional career.

58. Susannah explained her approach to the review and will come at it from a perspective of inquiry, particularly in relation to understanding existing evidence, limitations and opportunities as well as understanding the position and perspectives of stakeholders. It is a relief to know that this group exists and has been working on understanding the regulations over the last four years. One of the biggest challenges is the short time frame for the review – this needs to be completed by the end of March 2025.

59. Susannah mentioned the following regarding the Terms of Reference:

- Effectiveness of the regulations – taking a broad understanding of what ‘effectiveness’ actually means, both in terms of water pollution, but also the effectiveness relating to the uptake and how useful they have been in driving change.
- Impact – more broadly, in relation to the Welsh Government's Sustainable Land Management Duty of the Agriculture Act, but also looking at the Future Generations and environmental statutory and international obligations.
- Review the alternative measures – it's been very interesting to read and understand those and the work that's gone into already thinking about alternatives.
- The way in which the Agricultural Pollution Regulations sit alongside wider environmental regulations and the regulatory environment in which it operates and understand those links and potential trade-offs.

60. Dennis mentioned that this WLMF Sub Group formed in 2017, and we've more or less met once a month since then. Dennis raised concerns around a letter which from the Future Generations Commissioner for Wales to Huw Irranca-Davies, Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs. Dennis said the letter referred to the Institute of Welsh Affairs group. New groups are being formed with very little reference to the vast amount of work that this WLMF Sub Group has done, which is all published with brilliant minutes – we should be the first port of call. Matthew Walters, Welsh Government said the letter was written by the Future Generation Commissioner, specifically in relation to the summits that were originally convened back in 2022. There is awareness of the work of this group and particularly its role. That letter was regarding the future of those summits, communication, the sustainability of the summits in their current design and how they might move forward.
61. Creighton said represents the Carmarthenshire of Fishermen's Federation, is the Vice Chair of Afonydd Cymru and is a member of the Wales Environment Link, which is a group of Welsh and national environmental NGOs. Creighton asked how various groups can communicate with Susannah going forward and give their input on the deliberations. Susannah said she would like to try and meet as many key stakeholders as possible, and this is a really valuable forum, although perhaps not all are connected. It will be important to make the best use of this group to corral and coordinate. The programme for engagement is being worked up by Welsh Government – we will need to be rational given the timescales.
62. Rhys confirmed that he is happy for Susannah to use this group going forward, particularly given the limited timeframe for this work.

Item 6. Review of Minutes and Actions

63. As the meeting had significantly run over, it was agreed that the outstanding actions and previous minutes could be dealt with via correspondence and members can provide updates via email.

AP September 04: The group to review the June meeting minutes and provide any comments or amendments to WLMF.subgroup@cyfoethnaturiolcymru.gov.uk .

AP September 05: Bronwen Martin, NRW to circulate a list of outstanding actions for the group to review and provide updates in response.

Item 7. Any Other Business

64. Creighton asked about the progress of the CoAPR Summary Report for Welsh Government which was going to be shared with this group. Nichola Salter, NRW said NRW have amended the report following some clarifications from Welsh Government. The report is now with NRW Senior Managers and going through our internal sign off. Nichola said it should be available before the next meeting in October.
65. The next meeting will be on Monday 21st October 2024.
66. No other business was raised.