

Maintaining, Enhancing and Restoring the Peatlands of Wales: Unearthing the Challenges of Law and Sustainable Land Management

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ABSTRACT

Peatlands are essential to environmental imperatives with respect to achieving net zero and nature recovery. Sustainable Peatland Management (SPM) can help to restore, maintain and enhance peatlands to ensure they meet their potential in delivering multiple ecosystem benefits. SPM has attracted a great deal of attention in policy and practice but there has been no attempt to carry out a comprehensive review of the law and governance issues in this context. This article does so with reference to an exemplar of an area of deep peat in the southeast corner of the Brecon Beacons National Park, in Wales. Mapping the boundaries of law and governance here reveals a pressing need to amend these systems to facilitate effective SPM. It also unearths broader challenges regarding the legal frameworks for sustainable land management that will require a more fundamental response.

KEYWORDS: law, peat, nature conservation, sustainable land management

1. INTRODUCTION

Peat is perhaps best known for its use as a fuel and growing medium. Less well known is the fact that peatlands are essential to environmental imperatives in terms of both achieving net zero and nature recovery. Peatlands are wetlands with peat formed from semi-decayed plant remains as a result of anaerobic conditions caused by waterlogging. They provide numerous ecosystem benefits, for example, acting as a carbon store, contributing to flood defence and supporting biodiversity.

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Peatlands are particularly prevalent in the UK. Deep peatlands cover approximately 4% of the total land area of Wales and are currently largely managed for agriculture and forestry.¹ These peatlands are characterised by degradation caused by modern forestry techniques and a focus on more profitable dry-agriculture outcomes.² Sustainable Peatland Management (SPM) in the UK and Wales, therefore, centres on positive action to restore more heavily degraded areas and the maintenance and enhancement of the best and most readily recoverable peatlands.³

SPM in Wales is currently driven by the UK Peatland Strategy created under the auspices of the International Union on Nature Conservation (IUCN).⁴ The UK strategy includes a target of ensuring that by 2040 two million hectares of peatland is in good condition, under restoration or being sustainably managed.⁵ The strategy aims to create common goals to drive action across the four devolved nations of the UK, but recognises that there are important differences in peatlands and the pressures on them in each of these areas.⁶ In Wales, the government created a 'Peatlands of the Future' programme, in 2018.⁷ The aims of this programme are being taken forward through a National Peatland Action Programme which is the responsibility of Natural Resources Wales (NRW), the environment agency for Wales.⁸

Despite the attention to SPM in policy and practice in both the UK and Wales, there has been no attempt to carry out a comprehensive review of law and governance in this respect. This article does so with reference to an exemplar in the form of an area of deep peat in the southeast corner of the Brecon Beacons National Park, in Wales. Several maps created from Geographic Information System (GIS) mapping systems guide contemplation of the issues in this area. These maps provide a 'way of seeing' the significance of the peatland within the landscape of which it forms part, both on land and as a hydrological unit, and the relationship to legal and administrative boundaries in this respect. Most importantly, the maps have been an essential tool in the cross-disciplinary collaboration between the authors.

This review reveals a complex web of boundaries related to law and governance for SPM that are driven by disparate objectives that bear little relation to its aims.

1 Natural Resources Wales, *National Peatland Action Programme, 2020-2025* (Natural Resources Wales, 2020) 13.

2 It has been estimated that 70% of peatlands in Wales have been modified and are in a degraded condition. Welsh Government, *Prosperity for All: A Low Carbon Wales* (Welsh Government, 2019) 131.

3 These are the first two aims of the UK Peatland Strategy (IUCN, *UK Peatland Strategy 2018-2040* (IUCN UK National Committee, 2018)) 5.

4 *ibid.*

5 *ibid.* 12.

6 *ibid.* Wales is one of three devolved nations in the UK. Devolution in Wales dates back to the Government of Wales Act 1998. In the intervening years it has increasingly gained political, economic and legal significance and has had primary law-making powers since 2011.

7 There is little publicly available information about this programme, but it is referred to in the Welsh Government's Draft Climate Change Adaptation Plan. Welsh Government, *Draft Climate Change Adaptation Plan for Wales* (Welsh Government 2018).

8 Natural Resources Wales (n 1).

From this review it is possible to identify some changes to current legislation to facilitate more effective SPM. The more significant conclusion, however, is that SPM needs to be supported by more fundamental change to the legal architecture for Sustainable Land Management (SLM). SLM is defined in this context as:

The use of land resources including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term potential of those resources and the maintenance of their environmental benefits.⁹

It is notable that this definition includes water as a land resource given the nature of peatlands as wetlands.

SLM law is currently in a state of infancy. As in many other areas of environmental law, rules related to land management have emerged incrementally in response to individual concerns and are applied by a multiplicity of different organisations. Developing a holistic response to the application of law to the challenges of SLM is essential, but the fact that laws related to SLM span so many different sectoral concerns and legal regimes makes this task very challenging. Furthermore, as with any complex and emerging environmental issue understanding the science is also both critical and difficult. Therefore, this article is based on the combined expertise of the authors in these fields.

Before considering the issues in detail, it is necessary to provide some contextual information. First, outlining the key features of peatlands and the benefits they provide to society; secondly, identifying the broader law and policy contexts for SPM in Wales; and, thirdly, explaining the governance arrangements for SLM in Wales.

2. THE KEY FEATURES AND MULTIPLE BENEFITS OF PEATLANDS

The main peatland habitats represented in the UK are blanket bog (mostly in the uplands), lowland raised bog and fen. Broadly, bog is rain fed whereas fen is rain and groundwater fed. 'Active' peatlands are those currently forming peat (growing) and, therefore, sequestering carbon. Most peatlands are currently in a degraded condition, and as a result, are inactive. Nevertheless, they act as important carbon stores as they have been developing and laying down peat for thousands of years. A distinction is also often made between deep and shallow peat based on the thickness of peat deposits; but (deep) peat is viewed differently in different parts of the UK. In Wales, it is defined as being less than 40 cm.¹⁰

Most of the peatlands of Wales are in a degraded state as a result of wildfires, large-scale hydrological modification and unsustainable forestry and agricultural management.¹¹ From an agricultural perspective, peatlands were generally viewed as unproductive land, and have been extensively drained (and damaged) to support 'dry-land' agricultural techniques to improve their commercial productivity. In the

9 This is the definition adopted by the Welsh Government in its White Paper on Agriculture in Wales. See Welsh Government further (n 74) further 28.

10 Natural Resources Wales (n1) 22.

11 Welsh Government (n 2).

late 20th century there were, indeed, financial incentives for draining peatlands towards extensive and intensive grasslands for: animal grazing; planting with plantations of commercial timber species; sporting interests such as grouse shooting; and, in the lowlands, arable agriculture.

Degradation may be the defining feature of peatlands, but it is important to recognise that peatlands exist in a variety of different condition states and the appropriate means of SPM will vary considerably between different peatland areas. Defining and understanding the concept of the regeneration of peatlands can also be a difficult issue. It is arguable that ‘natural’ regeneration should refer to the regenerative capabilities of peatlands without human interference. For example, in an evidence review of the restoration of blanket bogs, Natural England concluded that there is no evidence to suggest this type of peatland is not restorable.¹² However, as will be considered in the case study, law and policy focuses on peatlands that have restorative capabilities through positive actions such as improving the vegetation; improving the hydrology (or ‘rewetting’ as it is more commonly known); and removing trees and shrubs.¹³

SPM is essential to all three of the primary agendas for environmental protection characterised as: Net Zero, Nature Recovery and Developing Nature Based Solutions.¹⁴ Peat is generally considered to be approximately 50% carbon and an important carbon store.¹⁵ As wetlands, peatlands have an important role to play in water regulation and quality and can provide a role in natural flood defence. Improving the condition of blanket bog in the uplands, for example, can help reduce and delay storm flows and raise water tables.¹⁶ Peatlands may not, relatively, be as species rich (botanically) as other habitats, but they are home to unique assemblages of wildlife and are essential in halting the decline of biodiversity in the UK.¹⁷ More importantly, they support a number of species that are highly specialised and occur in unique species assemblages that are important to the resilience of the ecosystem in the area as a whole. For example, sphagnum moss, found in blanket bog, is particularly significant to the flood defence provided by peatlands.¹⁸

12 Matthew Shepherd and others, *Natural England Review of Upland Evidence - Restoration of Degraded Blanket Bog* (Natural England 2013).

13 On the definition of natural regeneration, see n 114 below. On methods of peatland restoration, see further IUCN Peatland Programme *Restoring Peatlands* (IUCN Peatland Programme 2009).

14 Richard Broadbent (Natural England’s Head of Legal Services) *Making Nature’s Recovery Central to Addressing and Adapting to Climate Change as Part of the Post Covid 19 Green Recovery*. Presentation to the United Kingdom Environmental Law Association Conference (June 2020).

15 Richard Lindsay, *Peatbogs and Carbon: A Critical Synthesis to Inform Policy Developing in Oceanic Peat Bog Conservation and Restoration and Restoration in the Context of Climate Change* (University of East London Environmental Research Group 2010).

16 Danielle Alderson and others, ‘Trajectories of Ecosystem Change in Restored Blanket Peatlands’ (2019) 665 *Science of the Total Environment* 785–96 and Emma Shuttleworth and others, ‘Restoration of Blanket Peat Moorland Delays Stormflow from Hillslopes and Reduces Peak Discharge’ (2019) 2 *Journal of Hydrology X*.

17 IUCN United Kingdom National Committee *Peatland Biodiversity – Butterflies and Moths* <www.iucn-uk-peatlandprogramme.org/news/peatland-biodiversity-butterflies-moths> accessed 21 June 2021.

18 IUCN United Kingdom National Committee *Sphagnum as a Key Ingredient of Natural Flood Management* <www.iucn-uk-peatlandprogramme.org/news/sphagnum-key-ingredient-natural-flood-management> accessed 21 June 2021.

Peatlands can also be significant from a cultural and historical perspective.¹⁹ Peatlands usually exist in remote areas that people value for their tranquillity or feeling of wilderness. Wide-ranging rights of public access will also be prevalent and facilitate recreational activities such as, hiking and pony trekking. The benefits of this activity to human health and well-being are important and increasingly recognised more generally in policy in Wales.²⁰ Peatlands also provide a 'unique archive of our cultural past', the layers beneath the surface revealing a history dating back to prehistoric times.²¹ While on the surface, the landscape also provides an insight into the history in Wales as the use of peat as a fuel is inextricably linked to that of common land where rights of turbarry or 'digging for peat' have existed for centuries.²² This is not just of historical interest, given that the UK horticultural industry still relies heavily on peat as a growing medium.²³

The multiple benefits that can be derived from peatland exploitation means they are also places of conflict and contestation. Forestry standards and financial incentives in agriculture have served to halt some of the more damaging practices associated with agriculture and forestry. However, agricultural activities, such as grazing, may conflict with efforts to restore peatland vegetation. Third parties accessing the land for recreation may also create a threat to efforts to maintain and restore these areas whether unwittingly or not. For example, one of the most significant contemporary causes of destruction to peatlands is wildfires.²⁴ Wildfires on peatlands may be deliberate but can be caused accidentally by those involved in recreational activities.²⁵ Peatland management may even conflict with other measures taken to pursue our environmental imperatives. For example, woodland creation also sits firmly at the heart of policies on Net Zero, Nature Recovery and Developing Nature Based Solutions.²⁶ However, afforestation may have a significant degrading effect on a peatland, as tree plantations drain water from the site. Thus, peatland restoration may rely on removing invasive trees.

3. LAW AND POLICY CONTEXTS FOR SUSTAINABLE PEAT MANAGEMENT IN WALES

According to the UK Strategy on Peatlands, the challenge of SPM is to support positive action to maintain and enhance the best and most readily recoverable peatlands

19 See further on the cultural ecosystem services provided by peatlands Kerry Waylen, Robert Van der Noort and Kirsty Blackstock, 'Peatlands and Cultural Ecosystem Services' in Aletta Bonn and Rob Stoneman (eds), *Peatlands Restoration and Ecosystem Services: Science Policy and Practice* (CUP 2016) 114.

20 See, for example, the attention to this issue by Natural Resources Wales <www.naturalresources.wales/about-us/what-we-do/health-and-wellbeing/?lang=en> accessed 21 June 2021.

21 Ben Gear and others, *Culture and History* (IUCN Peatland Programme National Committee for the United Kingdom 2010).

22 See further Christopher Rodgers and others, *Contested Commons Land* (Routledge 2010) 6.

23 See further information from the Royal Horticultural Society <www.rhs.org.uk/science/gardening-in-a-changing-world/peat-use-in-gardens> accessed 21 June 2021.

24 Wildfires always result in carbon release, but this is exacerbated in the case of peat by its existence as an intensive carbon store.

25 See, for example, research by the Forestry Commission on the behaviours driving arson and the possible responses. Matthew Jollands, Jake Morris and Andy Moffat, *Wildfires in Wales* (Forest Research 2011).

26 Broadbent (n 14).

and restore more heavily degraded areas.²⁷ In Wales, the ‘Peatlands of the Future’ programme included two key targets: To ensure that all Welsh peatlands supporting semi-natural habitat would be subject to sustainable management; and, to increase the total area of semi-natural habitats on peat by 5,000 hectares.²⁸ The approach to pursuing the targets in the UK and Welsh strategies is set out in a National Peatland Action Programme (NPAP) led by NRW.²⁹ The NPAP recognises the importance of the broader policy frameworks in Wales for both climate change and biodiversity loss.³⁰

3.1 Climate Change and SPM

Wales has a target to reduce greenhouse gas emissions by at least 80% by 2050.³¹ Reporting on greenhouse gas (GHG) emissions in Wales is subject to the requirements of the Climate Change Act 2008 which includes reporting on the removal of GHG from the atmosphere due to land use, land use change and forestry (LULUCF).³² Reducing carbon loss from peatlands is considered essential to this aim.³³ The rewards of peatland restoration in addressing carbon loss, and to some extent ensuring carbon sequestration, are clear but the costs will be very high.³⁴ Therefore, measures to incentivise private financing are particularly important. The UK Government has created a UK Peatland Code to provide a standard method of quantifying the greenhouse gas emission benefits of a project, which is also supported by Welsh Government.³⁵

Conceptualising SPM as a mechanism for addressing climate change can undoubtedly bring benefits in highlighting this issue and raising funds for restoration projects. Significant progress has been made in this regard in the last year. In 2020, despite references to peatland restoration, the key indicator of progress adopted by the UK Climate Change Committee for LULUCF measures was afforestation.³⁶ However, in their 2021 report, the Climate Change Committee included peat restoration as a key metric.³⁷ New figures on peatland emissions were also noted as one of the biggest changes in the UK greenhouse gas inventory in that year.³⁸ Nevertheless, there needs to be greater clarity around the contribution of action on peatlands to climate change goals. The focus in UK and Welsh policy is ‘restoration’ yet it is not

27 UK Peatland Strategy (n 3).

28 See n 7 above.

29 Natural Resources Wales (n 1).

30 *ibid* 18.

31 Welsh Government (n 2).

32 Climate Change Act 2008, s 16.

33 Welsh Government (n 2) 8 and 126.

34 The Office for National Statistics (ONS) report on peatland natural capital suggests that the costs of restoring 100% of UK peatlands could be significant at between £8 billion and £22 billion. Office for National Statistics, *UK Natural Capital: Peatlands* (Office for National Statistics 2019).

35 IUCN United Kingdom National Committee *Peatland Code* (IUCN United Kingdom National Committee 2019). For support in Wales, see Natural Resources Wales (n 1) 21.

36 Committee on Climate Change, *Reducing UK Emissions: Progress Report to Parliament 2020* (Committee on Climate Change 2020) 111.

37 Committee on Climate Change *Progress in Reducing Emissions: Report to Parliament 2021* (Committee on Climate Change 2021) 119.

38 *ibid* 67.

always clear whether the resulting GHG emission reductions will arise from the sequestration of carbon through peatland restoration or the maintenance of carbon stocks. While all peatlands act as carbon stores that will release significant GHG emissions if damaged, only a proportion are currently active and currently sequestering carbon; and it will take time for severely degraded peatlands to recover, achieve regeneration and begin sequestering again.

It remains important to establish where SPM sits as a priority in comparison to other LULUCF measures in Wales. Tree planting has traditionally been viewed as the main decarbonisation option for the land use sector in Wales.³⁹ Woodland creation is a particular priority in Wales given that there is only 15% coverage here, making Wales one of the least wooded countries in Europe.⁴⁰ The Welsh Government has recently unveiled plans to create a National Forest running the length and breadth of Wales as a ‘natural solution to the climate emergency’.⁴¹ The benefits of tree planting to climate change are more clearly understood than those of peatland restoration, but it is important that we plant the right trees in the right places given that afforestation of peatlands is a real risk to SPM.⁴²

The UK Climate Change Committee has also drawn attention to the role of some direct forms of regulation, and recommending stopping the use of peat in compost, banning peat extraction, and managed burning of peat in England and the devolved nations.⁴³ These measures will be important in addressing some of the most explicit causes of peat decline. Commercial peat extraction in Wales is already subject to land use planning law⁴⁴; and planning policy dictates that this should be limited to ‘wholly exceptional circumstances in areas which have already been damaged significantly by recent human activity’.⁴⁵ However, there is evidence that across the UK most of the peat sold is imported from Europe.⁴⁶ Hence, in line with its commitment to global responsibility for its actions Welsh Government should ban such imports.⁴⁷ An alternative approach would be to address the sale of peat on the Welsh market. Introducing legislation in this regard may, however, be more difficult than one might expect. In England, the problems of peat extraction for use in the horticulture industry have been well known for many years⁴⁸; but there has only recently been a commitment to end the use of peat in the amateur horticulture

39 Welsh Government *Woodland Strategy for Wales* (Welsh Government 2018) 21.

40 *ibid* 7.

41 See further <sizeofwales.org.uk/national-forest-for-wales> accessed 21 June 2021.

42 Elena Vangelova and others, *A Strategic Assessment of the Afforested Peat Resource in Wales* (Forestry Commission 2021).

43 Committee on Climate Change (n 36) 182.

44 Commercial peat extraction is included in the definition of minerals extraction under land use planning legislation (Town and Country Planning Act 1990 s 336).

45 Welsh Government, *Planning Policy Wales Edition 10* (Welsh Government 2018) 112.

46 Two-thirds of the peat sold in the UK comes from Europe. Department for the Environment, Food and Rural Affairs, *England Peatland Action Plan* (UK Government 2021) 20.

47 ‘A Globally Responsible Wales is one of the seven statutory goals in the Wellbeing of Future Generations (Wales) Act 2015. See n 78 below.

48 The Department for the Environment, Food and Rural Affairs (DEFRA) introduced a policy framework in this regard, in England, in 2010. Department for the Environment, Food and Rural Affairs *Consultation on Reducing the Use of Peat in the Horticultural Industry in England* (UK Government 2010).

sector.⁴⁹ Even this limited commitment has not been replicated in Wales although there is increasing pressure to do so.⁵⁰ This may be because banning the sale of peat products in Wales raises difficult issues around the boundaries of the Welsh Parliament's devolved powers.

The burning of peat is also an obvious source of peat destruction. There are two concerns in this respect. First, the deliberate, prescribed, burning of peatlands—so called 'managed-burning'. Legislation on a partial ban on 'managed burning' came into force, in England, in May 2021.⁵¹ Wales should consider introducing a more comprehensive ban on 'managed burning', but this is actually quite a small problem in comparison to the burning of peatlands that takes place as a result of wildfires. Wildfires are not easily addressed through direct regulation, given that they are often caused by anti-social behaviour which is an extremely complex and difficult issue to address.⁵²

Aside from wildfires, the most significant driver of peat degradation has been forestry and agricultural practice, the latter being incentivised by agricultural payment systems. The UK Committee on Climate Change also notes therefore, the very important role of newly emerging financial systems for land management in the UK following Brexit.⁵³ The proposals for Wales will be explored in detail in the case study.

3.2 Nature Recovery and SPM

The legal framework for reporting on climate change in Wales has had an important effect in highlighting the need for SPM. More specifically, it has drawn attention to funding for peat restoration, direct regulation to address the most obvious causes of peat decline and the significance of forestry and agricultural practice. Nevertheless, the driving force for the development of policy strategies for SPM has been the IUCN which is an organisation centred on nature conservation. The United Nations Convention on Biological Diversity also recognises the significance of peatlands to nature recovery.⁵⁴ This is implemented in Wales through the Nature Recovery Action Plan (NRAP) which highlights the importance of SPM in building nature networks across the country.⁵⁵

49 Department for the Environment, Food and Rural Affairs, *England Peatland Action Plan* (UK Government 2021) 5.

50 See for example, a petition to the Welsh Parliament in September 2021 Ban the use of peat in horticulture and all growing media by 2023—Petitions Senedd Wales.

51 Heather and Grass etc, Burning (England) Regulations 2021 (SI 2021/158)

52 Jollands and others (n 25).

53 Committee on Climate Change (n 36) 21 and 182.

54 The Aichi targets were set out in the Strategic Plan for 2011–2020 agreed at the 10th Conference of the Parties of the United Nations Convention on Biological Diversity. Decision X/2 'Strategic Plan for Biodiversity 2011-2020' (29 October 2010) UNEP/CBD/COP/DEC/X/2. Target 15 includes a requirement to restore 15% of degraded ecosystems for climate change mitigation. Several recommendations and resolutions have also been made by the RAMSAR Convention on Wetlands Ramsar Convention on Wetlands, the first in 1996 (Proceedings of the 6th Meeting of the Conference of the Contracting Parties Recommendation 6.1: Conservation of Peatlands (Brisbane, Australia, 19–27 March 1996)); and most recently at the 12th Meeting of the Conference of the Parties (Resolution XII.11 on Peatlands, Climate Change and Wise Use: Implications for the Ramsar Convention (Uruguay, 1–9 June 2015)).

55 Welsh Government *Nature Recovery Action Plan 2020-2021* (Welsh Government 2020) 23. Going forward this plan will need to be aligned with new targets from the UN Convention on Biological Diversity to be agreed at the 15 meeting of the Conference of the Parties Kunming, China, 11–24 October 2021.

Key to nature recovery in Wales are legal frameworks for habitat protection which take the form of Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs). SSSIs are designated under the Wildlife and Countryside Act 1981 as areas of land of special interest by virtue of their flora, fauna or geological or physiographical features.⁵⁶ SACs were initially designated under Regulations implementing the EU Habitats Directive as part of a European network of sites aimed at maintaining or restoring at a favourable conservation status, natural habitats and species of wild fauna and flora.⁵⁷ Following the UK's exit from the EU these Regulations remain in place as EU retained law, but have been amended to ensure the designation and management of SACs is relevant to a national rather than a European network of sites.⁵⁸

The UK Peatland Strategy includes a target of ensuring that 95% of peatlands are protected under relevant legal designations for nature conservation by 2040.⁵⁹ Wales has a long way to go in meeting this target. Of deep peatlands in Wales, approximately 68% are protected within SSSIs and only approximately 45% within SACs.⁶⁰ One reason for this is the fact that SPM does not fit well with the criteria for the designation of either SSSIs or SACs. This will be explored in more depth in the case study.

3.3 SLM and SPM

The UK Peatland Strategy also notes the importance of integrating peatland protection into land use planning policies and Environmental Impact Assessment (EIA).⁶¹ Land use planning law might seem particularly pertinent in this context given that it exists to map desired land uses in a manner that attempts to meet social, economic and environmental goals in an integrated way.⁶² 'Development' that might affect peatlands will require planning permission, but despite recognition of the multiple benefits of peatlands in planning policy there is no specific protection for them.⁶³ Instead, shielding peatlands from development relies heavily on a policy presumption against major development in designated nature conservation sites.⁶⁴

56 s 28(1) Wildlife and Countryside Act 1981.

57 Council Directive (EEC) 92/43 on the Conservation of Natural Habitats of Wild Fauna and Flora OJ L 206/92. The relevant regulations are now the Conservation of Species and Habitats Regulations 2017 SI 2017/1012. These now form part of EU retained law under the EU Withdrawal Act 2018.

58 Conservation of Species and Habitats Regulations (Amendment) (EU Exit) 2019 SI 2019/0000.

59 UK Peatland Strategy (n 3) 14.

60 This has been calculated using the latest maps of deep peat map and protected areas in Wales.

61 UK Peatland Strategy (n 3) 14.

62 Decisions are taken in line with a Development Plan unless 'material considerations' indicate otherwise (Town and Country Planning Act 1990 s 70(2) and Planning and Compulsory Purchase Act 2004 s 38(6)). In Wales, the overall statutory purpose of the land use planning system is to contribute to the seven statutory well-being goals set out in Wellbeing of Future Generations (Wales) Act 2015 s 4. See n 78 below.

63 National planning policy recognises the values of peat bogs as follows: 'Peat bogs are of significant nature conservation interest and are frequently important for archaeological interest as well as providing a carbon sink and should be protected and conserved for future generations.' The specific role of peatlands in ensuring the resilience of ecosystems in the context of flooding is also recognised in Wales Planning Policy. See Welsh Government (n 45) 112 and 122, respectively.

64 *ibid* 131 onwards.

EIA law also provides an essential system for the regulation of decision making on development in the interests of environmental protection.⁶⁵ A general regulation, initially introduced in response to the EU EIA Directive, applies to both England and Wales and addresses the likely significant environmental effects of projects related to industrial, transport and energy infrastructure.⁶⁶ The general EIA Regulation may be important to peatland protection with reference, for example, to the impacts of renewable energy development.⁶⁷ It is significant to SPM that the EIA statement produced in this context must address the impacts of development on carbon, water, and biodiversity in a holistic manner.⁶⁸ However, there are also separate EIA Regulations that apply to agriculture and forestry that will be important to SPM given the significance of these activities on peatlands and the fact that land use planning law does not apply in these contexts.⁶⁹ These will be discussed in detail in the case study.

Aside from the regulatory framework for EIA, the most significant driver of SPM in land management is the agriculture payment system which, until the UK's exit from the EU, was governed by the EU Common Agricultural Policy (CAP). CAP was initially focused on payments to produce food, but since the 1990s it has rewarded farmers for taking action to protect and improve the natural environment.⁷⁰ There are now two different aspects to payments under CAP which are referred to as Pillar 1 and 2. Pillar 1 provides 'direct payments' to farmers based on the amount of land in production. These payments are also conditional on cross-compliance with some environmental legislation, ie, the Wild Birds and the Habitats Directive's and the law on Nitrate Vulnerable Zones. These are referred to as the Statutory Management Requirements (SMRs). 'Direct payments' are also dependent on compliance with a set of Good Agricultural Environmental Conditions (GAECs) which centre upon water, soil and landscape management.⁷¹ Pillar 2 payments relate to rural development and include schemes supporting the restoration, preservation and enhancement of ecosystems and a resource efficient climate.⁷²

65 Jane Holder, *Environmental Assessment: The Regulation of Decision Making* (OUP 2004).

66 Town and Country Planning (Environmental Impact Assessment) Regulations 2017 SI 2017/571. EIA Regulations were initially introduced to implement Council Directive (EU) 2011/92 on the assessment of the effects of certain public and private projects on the environment *OJ L 26/12*. As with all Regulations implementing EU Directives these now form part of EU retained law.

67 The potential conflicts between development and peatlands in undesignated areas is demonstrated in case law on windfarm development in South Wales. See for example, *RWE Npower Renewables Ltd v Welsh Ministers* [2011] EWHC 1778.

68 Town and Country Planning (n 66) Schedule 4(4).

69 See further Environmental Impact Assessment (n 145) and (n 152).

70 See further Luchino Ferraris, 'The Role of the Principle of Environmental Integration in Maximising the "Greening" of the Common Agricultural Policy' (2018) 43 (3) *Environmental Law Review* 410.

71 These are buffer strips on water courses; abstraction water for irrigation; protecting groundwater against pollution; minimum soil cover; land management to limit erosion; maintenance of soil organic matter; and retention of landscape features.

72 Regulation (EU) 1305/2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) *OJ L347/487*, art 28. Pillar 2 funding was distributed in Wales through the Wales Rural Development Programme 2014–2020. This included numerous references to peatland restoration in light of its significance to climate change mitigation and adaptation as well as water management. Welsh Government, *The United Kingdom Rural Development Programme (Regional) Wales 2014–2020* (Welsh Government, 2014) 132 and 463.

Despite increasing support for environmental protection through CAP, the system has been subject to significant criticism.⁷³ Following the UK's exit from the EU, Wales has begun to develop proposals for an entirely new system of land management which has clear potential to support peatland management. At present, the proposals are included in a White Paper and a Bill is promised in the legislative programme for 2021–22.⁷⁴ The new land management system will extend to forestry as well as agriculture. Also significant with respect to woodlands is the Forestry Act 1967 that governs the licensing of tree felling and the UK Forestry Standard that provides a framework for woodland management.⁷⁵ These issues will be discussed in detail in the case study.

Most notable by its absence from the UK Peatlands Strategy is a reference to water law. This is despite detailed discussion of the importance of the hydrology underlining peatlands to their sustainable management. This is less surprising when one considers that, traditionally, water law has focused on the quality and quantity of water not the overall function of the hydrological system. Nevertheless, a system of water management was introduced in the UK under Regulations implementing the EU Water Framework Directive (WFD) that not only addresses the distribution and treatment of water, but the importance of land management in addressing the complex interactions that affect water quality.⁷⁶ This is relevant to SPM because it has created a more holistic approach to land and water management focused on the broad spatial area of the River Basin. This will be discussed in more detail in the case study along with law and governance for flood prevention under the Flood and Water Management Act 2010.

4. SUPPORTING SUSTAINABLE PEAT MANAGEMENT:

GOVERNANCE FOR SUSTAINABLE LAND MANAGEMENT IN WALES

Law and policy on SPM is applied by a range of statutory bodies responsible for SLM in Wales. Land use planning is a matter for Welsh Government and local authorities, but most other aspects of SLM are the responsibility of Natural Resources Wales (NRW). NRW is Wales' statutory environment agency that exists at 'arms-length' from Welsh Government and is responsible for pollution control, nature conservation and forestry. NRW has responsibilities for water pollution and flooding, but there are additional roles relating to drainage and flooding for local

73 Ferraris (n 70).

74 Welsh Government *Agriculture (Wales) White Paper* (Welsh Government, 2020). The UK Agriculture Act 2020 introduced measures for England and facilitated the introduction of measures in Wales that are to be in place by 31 December 2024.

75 See Forestry Commission England (n 147).

76 Council Directive (EC) 2000/60 of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy [2000] OJ L 327/2000. The system of river basin management is governed by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017/407 which now form part of EU retained law. However, there are several other relevant regulations with respect to the targets and standards related to the WFD. See further Stuart Bell and others, *Environmental Law* (OUP 2017) Ch 17.

authorities. Meanwhile, the statutory water company, Dwr Cymru, ensures the supply and quality of drinking water.⁷⁷

Despite the holistic approach of NRW the fact that Welsh Government, local government and Dwr Cymru also have a role to play in SLM means there is still a need for coordination. It is significant in this respect that Wales has a novel, overarching and holistic statutory framework for governance focused on the Wellbeing of Future Generations (WFG). This applies to Welsh Government and all public authorities in Wales including NRW (although it does not extend to utility companies such as Dwr Cymru). This legislation also creates a framework of governance principles that guide law, policy and decision-making by these organisations. These are referred to as the '5 ways of working': thinking long term, prevention, integration, collaboration and the involvement of people.⁷⁸ The principles of the WFG will all be important to governance for SPM, but especially the commitment to collaboration and participation given that SPM requires the participation of a broad range of stakeholders and relies heavily on private landowners and managers to implement change. Public authorities must also create well-being objectives to contribute to seven statutory goals. The most significant goals with respect to SPM are those that focus on carbon reduction and ecological resilience, ie, creating an innovative, productive and low carbon society as the basis of 'A Prosperous Wales'; and a nation that protects the environment so that it remains healthy and able to resist and adapt to social, economic and ecological changes as the basis of 'A Resilient Wales'.⁷⁹

In addition, NRW operates according to a statutory framework for SMNR defined as 'using natural resources in a way and at a rate that promotes the maintenance and enhancement of the resilience of ecosystems and the benefits they provide'.⁸⁰ The statutory framework also includes a set of nine principles to follow in this regard.⁸¹ These principles reiterate the '5 ways of working' in Wales and refer to the significance of scale, adaptability, evidence and resilience. The additional scientific principles are also important to action on SPM given the role of peatlands in climate change adaptation and ecosystems resilience and the need for precautionary approaches to the practice of SPM. SMNR currently underlines the Natural Resources Policy for Wales⁸²; and is set to have wider significance because the Welsh Government is considering extending a duty with respect to SMNR to all

77 Of course, the governance of SLM also includes non-statutory organisations such as the Wildlife Trusts and Canal and River Trusts to name but a few, but there is insufficient room here to discuss their role in full.

78 Well-Being of Future Generations (Wales) Act 2015 s 5. As noted above the goal of 'A Globally Responsible Wales', ie, that will ensure its well-being goals are not achieved at the expense of other less developed nation is also important in the context of peat importation.

79 *ibid* s 4.

80 Environment (Wales) Act 2016 s 3.

81 Environment (Wales) Act 2016, ss 3–5. See further Victoria Jenkins, 'Sustainable Management of Natural Resources: Lessons from Wales' (2018) 30 (3) *Journal of Environmental Law* 399.

82 Environment (Wales) Act 2016 s 9 and Welsh Government *Natural Resources Policy* (Welsh Government 2017) informed by Natural Resources Wales *State of Natural Natural Resources Report* (Natural Resources Wales 2016). This is informed by a State of Natural Resources Report compiled by NRW.

public authorities in Wales exercising the discharge of functions relating to the environment.⁸³

Area Statements and the system of Area Management is also crucial to the operation of NRW. Area Management refers to the spatial approach to SMNR adopted by NRW. There are seven areas across Wales and an Area Statement is created with respect to each. These statements outline the natural resources in the area, the benefits they provide, and issues related to their management.⁸⁴ The system of Area Management can provide a useful context for SPM because it supports an integrated approach to, for example, climate change and biodiversity concerns. However, the spatial dimension to this governance approach may conflict with the spatial contexts for the regulatory regimes related to SPM, such as SSSIs/SACs and WFD River Basin areas.

The boundaries of law and governance that impact on SPM are complex and may also be incompatible with those of private property rights and/or natural ecosystems.⁸⁵ The case study that follows uses a spatial approach, aided by GIS mapping systems, to demonstrate the significance of these complexities.

5. MAPPING THE BOUNDARIES OF LAW AND GOVERNANCE FOR SUSTAINABLE PEAT MANAGEMENT: A CASE IN THE BRECON BEACONS

The Brecon Beacons is one of three National Parks in Wales designated on the grounds of their natural beauty and the opportunities they afford for access for recreational purposes.⁸⁶ The Brecon Beacons National Park (BBNP) extends across the heads of the South Wales valleys and northwards into Powys. It attracts many visitors, but these tend to flock to popular locations such as, Pen-y-Fan, the highest mountain in south Wales. This case example, outlined in [Map 1](#), is found in the southeast corner of the BBNP which is largely uplands and formed of two mountain areas—Mynydd Llangynidr and Mynydd Llangatwg. [Map 1](#) demonstrates how deep peatland traverses the area, although the major part is found around Mynydd Llangatwg.

GIS systems can be invaluable in mapping natural resources but are not always entirely accurate. For example, in [Map 1](#), the deep peat is seen to extend well into the built-up area to the south of the picture including the industrial site. This is unlikely given the building development because while potentially deep peat deposits were present, they will have been destroyed as a result of the construction. Another issue with [Map 1](#) is that it shows only the areas of deep peat. In reality, deep and shallow peat will extend throughout the two mountain areas and beyond, ‘working’ as one ecological and hydrological (ecohydrological) unit.⁸⁷ Although this example

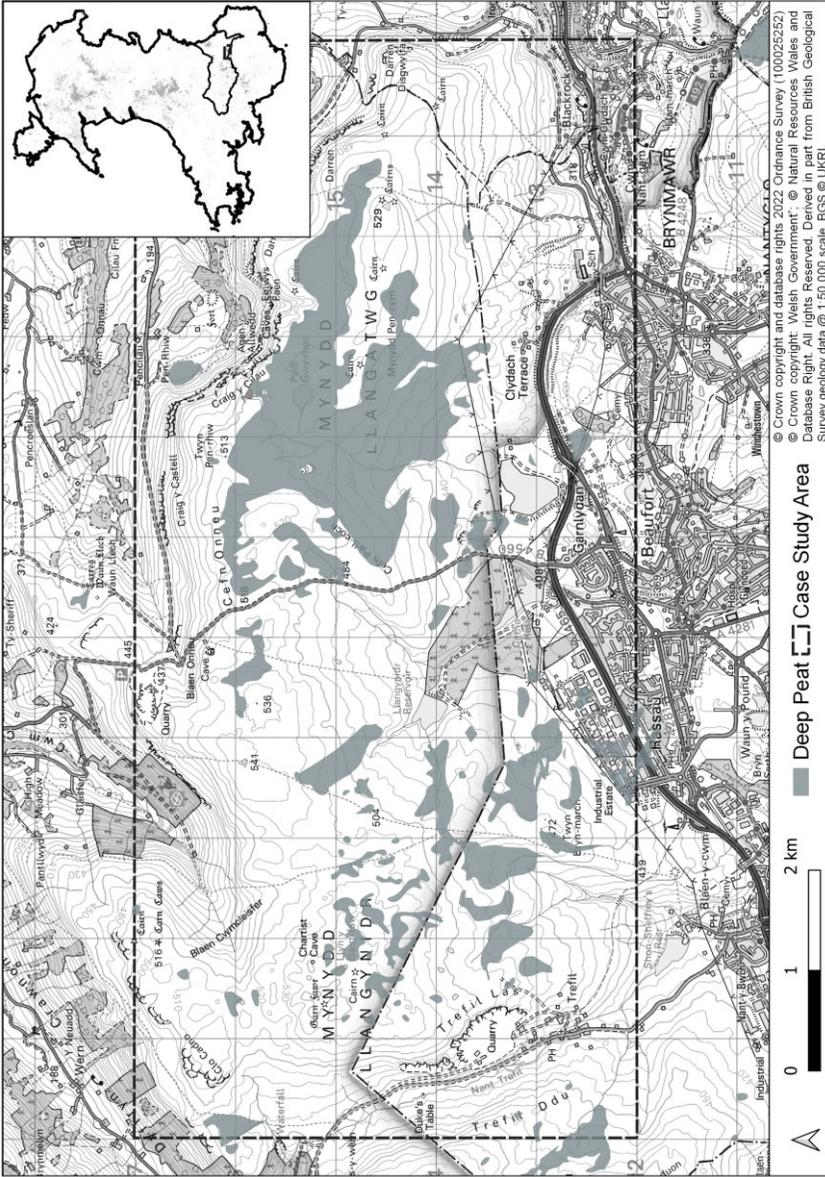
83 Welsh Government *Environmental Principles and Governance in Wales Post European Union Exit* (Welsh Government 2019) 19–20.

84 Environment (Wales) Act 2016 s 11.

85 Fred Bosselman, ‘What Lawmakers Can Learn from Large-Scale Ecology’ (2002) 17 *Journal of Land Use and Environmental Law* 207, 225.

86 National Parks and Access to the Countryside Act 1949 s 5(1). Natural beauty specifically includes wildlife and cultural heritage.

87 Natural Resources Wales (n 10) 22.



Map 1. Case study area, Mynydd Llangynidr and Mynydd Llangatwg, showing deep peat. Insert—Distribution of deep peat across Wales and case study area within the Brecon Beacons National Park.

will focus on deep peat it is important to recognise that shallow peat is just as significant to essential goals in environmental protection, not least climate change. This highlights the need for greater data to underline a system of SPM. An important development in this regard will be the imminent publication of a new map of all peatlands in Wales.⁸⁸ Despite the limitations of [Map 1](#) it is sufficient for the current purposes which are simply to provide an illustration of the boundaries relevant to nature, law and governance.

The Brecon Beacons National Park Authority (BBNPA) is the statutory planning authority for the area and has managerial responsibilities. BBNPA is unusual in owning 15% of the land within the National Park, but the area in question is owned by the Duke of Beaufort Estate.⁸⁹ As demonstrated in [Map 1](#), most of the peatland is common land and grazed by two commoners associations. Common land is itself a creation of law and tradition and the existence of common rights over land can create an additional challenge as common land, like peatlands themselves, is often characterised by conflict and contestation.⁹⁰ [Map 1](#) also illustrates the relationship between peatlands and social development, such as housing and industry. There is little social development on uplands peatlands meaning the NPA rarely receives planning applications for common land or the uplands. Hence, without being a landowner its role in SPM is usually limited to policy, managerial and partnership initiatives.⁹¹

[Map 2](#) demonstrates the way the area of the peatland is compartmentalised by the boundaries of different legal designations for the purposes of nature conservation. Mynydd Llangynidr is designated as a SSSI whilst Mynydd Llangatwg is both a SSSI and part of a wider SAC—referred to as the ‘Usk Bat Site’. To the northwest of the peatland there is also a National Nature Reserve—Craig y Cilau. National Nature Reserves are made by declaration of NRW under the Wildlife and Countryside Act 1981.⁹²

[Map 3](#) demonstrates how the area of the peatland forms part of a hydrological unit. Water bodies flow from the hill tops into river basins, the entire area forming a river catchment. Ground water, which is not represented on the map, will also, of course, be essential. Riparian rights arise from land ownership and include riverbanks and beds as well as ground water. Although these rights do not extend to the water itself, they place a responsibility on other riparian rights owners to use the water reasonably to ensure its free flow and freedom from pollution.⁹³ Thus, regulators must work with private landowners to achieve effective water management as well as management on the land.

88 Natural Resources Wales (n 1). This will, however, be based on the probability occurrence of peat so there will remain a need to develop more reliable data in this respect.

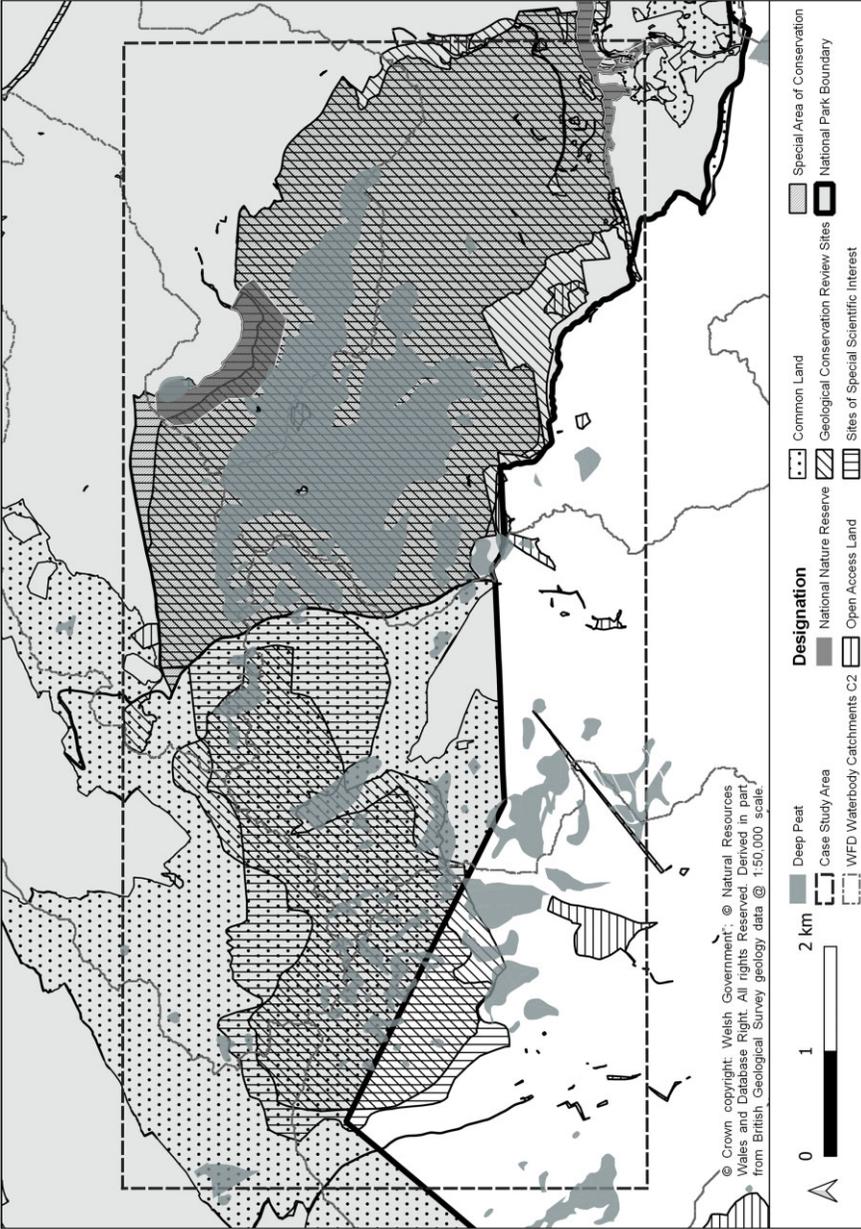
89 Paul Sinnadurai, Natural Resources Manager, Brecon Beacons National Park Authority. The figure of 15% is found in the Park’s latest management plan. *Management Plan for the Brecon Beacons National Park 2015-2020* (Brecon Beacons National Park 2015).

90 Rodgers and others (n 22).

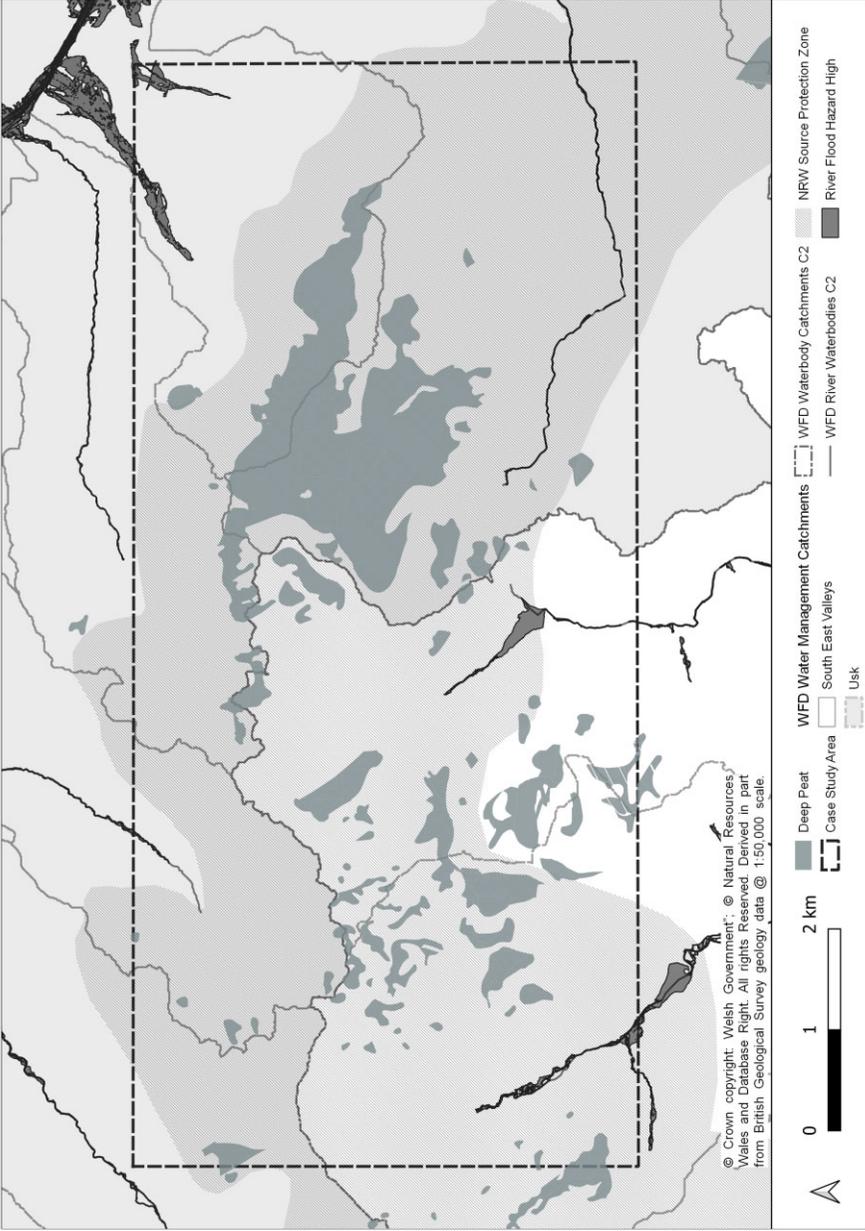
91 Sinnadurai (n 89).

92 Colin Reid, *Nature Conservation Law* (W Green 2009) 210.

93 Riparian Rights and Obligations Overview Lexis PSL, 29 June 2021.



Map 2. Designation boundaries across the case study site.



Map 3. Hydrological boundaries across the case study site—water catchments, flood risk areas and drinking water protection designations. Note—The River Usk catchment is a surface water safeguard zone.

The notion of boundaries in law and governance for SPM will be discussed first with reference to nature conservation designations (Map 2); secondly, water management (Map 3); and, finally, agricultural practice and forest management (Map 1).

5.1 Nature Conservation Designations (Map 2)

Ensuring that peatlands sit within SSSIs/SACs is an essential aim of the UK peatland strategy.⁹⁴ However, the case study demonstrates that these designations do not support SPM and identifies a number of issues that need to be addressed in reconsidering the legal framework for the designation and management of these sites. Any amendment to the legislation will also need to include a system to address these concerns in relation to existing sites.

5.1.1 Mynydd Llangynidr

This SSSI is designated on the grounds of one special feature, namely, its representation of Karst geomorphology.⁹⁵ The map shows how the SSSI also sits within a Geological Conservation Area which is a non-statutory designation.⁹⁶ Once notified NRW consent will be required for certain ‘potentially damaging operations’ (PDOs) and the landowner will be expected to enter into a management agreement to help protect the special features of the site.⁹⁷ There is a very extensive list of PDOs with respect to this site. These include issues relevant to the management of the peatland as well as the geology of the site, such as, modifications of the natural features of the land or the structure of water courses.⁹⁸ Nevertheless, their primary purpose is to protect the Karst geomorphology for which the SSSI was designated, not the peatland.

The enforcement of PDOs will be important in providing a preventive approach to damage by landowners. However, the management agreement between NRW and the landowner can be more significant to SPM as it aims to provide a positive approach to the maintenance of the site as well as preventing damage. The management agreement focuses on ensuring the visibility of the geomorphological features for which the site is designated, e.g., preventing dense tree growth, addressing fly tipping and avoiding further quarrying.⁹⁹ These endeavours will be significant to SPM, but, once again, it is notable that this is not the main motivation. The example of the SSSI on Mynydd Llangatwg, therefore, highlights the way in which the ‘special

94 UK Peatland Strategy (n 59) 14.

95 This is described as one of the best British examples of interstratal Karst because of the exceptional morphological variety and density of caprock dolines. Countryside Council for Wales, *Site of Special Scientific Interest Citation Mynydd Llangynidr* (Countryside Council for Wales 2012). For the designation criteria for SSSIs, see s 28(1) Wildlife and Countryside Act 1981 (n 56).

96 Geological Conservation Areas arise from the geological conservation review begun in 1977 by the Joint Nature Conservation Committee and completed in 1990. This set out to identify sites of national and international importance for their rocks, fossils, minerals and/or geological/geomorphological features.

97 See further Christopher Rodgers, *The Law of Nature Conservation* (OUP 2013) Ch 4.

98 Countryside Council for Wales *Site of Special Scientific Interest: Operations Requiring Consultation Mynydd Llangynidr* (Countryside Council for Wales 2012). This also refers to alterations to the water level and work on ditches.

99 Countryside Council for Wales, *Mynydd Llangynidr Site of Special Scientific Interest: Your Special Site and its Future* (Countryside Council for Wales 2012).

feature' for which the SSSI is designated drives the priorities for the management of the site. This means that if the management of the site is to support SPM it is not sufficient for the peatland to simply exist in the SSSI the reasons for designation must include the protection of the peatland.

5.1.2 Mynydd Llangatwg

Unlike Mynydd Llangynidr SSSI, the SSSI on Mynydd Llangatwg is designated on the grounds of several features, including the dramatic limestone and sandstone escarpment and a large-scale cave system below the surface. The cave system is vital for the hibernation of a variety of species and provides essential shelter for bats.¹⁰⁰ The criteria for designation also specifically include areas of blanket bog because they support important species, such as bog rosemary and round fruited collar-moss.¹⁰¹ This essentially equates the 'special interest' of the peat bog with the importance of the species it supports. Such an approach limits the 'special interest' of such areas because peatlands are not necessarily species rich.¹⁰²

Peat may also be of interest as a 'special physiographical feature' on the site, but guidance on the designation of 'bogs' in SSSIs suggests that those of most interest will be areas of 'significant quality' judged, for example, by an absence of drainage, peat cutting and invasive woodland.¹⁰³ This ignores the importance of large areas of degraded peatland that are very significant to carbon release. It also at odds with Welsh legislation that recognises any area of 'blanket bog' as a 'priority habitat'.¹⁰⁴ On the other hand, these priority habitats are identified for the purposes of 'maintaining and enhancing biodiversity in relation to Wales', not because of concerns for climate change adaptation. The example of the SSSI on Mynydd Llangatwg, therefore, demonstrates that support for SPM will require legislative change to encourage greater connections between our priorities for Net Zero and Nature Recovery that were not necessarily recognised when the relevant legislation was introduced.¹⁰⁵

The management agreement with respect to the Mynydd Llangatwg SSSI also raises some interesting issues. This makes particular mention of the need for restoration work to repair localised peat erosion, in an area referred to as Pwll Gwyrhoc.¹⁰⁶ At present, SSSIs cannot be designated on the grounds of their restoration potential alone; despite the fact that once designated restoration measures can form part of the management plan for the area.¹⁰⁷ This will also need to be addressed in

100 Countryside Council for Wales, *Site of Special Scientific Interest Citation Mynydd Llangatwg* (Countryside Council for Wales 1995). These cave systems form two of the most extensive integrated systems in Britain.

101 Countryside Council for Wales, *Mynydd Llangatwg Site of Special Scientific Interest: Your Special Site and its Future* (Countryside Council for Wales 1995).

102 IUCN United Kingdom National Committee (n 17).

103 Joint Nature Conservation Committee *Guidelines for the selection of biological SSSI's Part 2: Detailed Guidelines for Habitats and Species Groups: Bogs* (Joint Nature Conservation Committee 1994) s 3.4.

104 Environment (Wales) Act 2016 s 7.

105 Broadbent (n 14).

106 Countryside Council for Wales (n 101).

107 The fact that a nature conservation agency would be acting outside of its powers if it were to designate an SSSI on the grounds of the sites restoration potential alone was noted in *R v The Nature Conservancy Council exp Bolton MBC* [1994] 10 WLUK 118.

any new legislative arrangements for SSSIs. It is also notable that the designation of Mynydd Llangatwg SSSI is based on several different special features. This may result in a more holistic approach to the management of the site but can create competing priorities that will need to be carefully managed. Furthermore, the management agreement notes the importance of habitat types that are not subject to protection, such as acid grassland and vegetated quarry spoil.¹⁰⁸ This adds another layer of complexity to the management of the site, but one that is necessary to achieve the maximum benefit of the site with respect to nature recovery. Together these issues highlight the pressing need to create a system of designation and management that can account for these complexities and the needs of the broader ecosystem.

Mynydd Llangatwg SSSI also forms part of a wider SAC that encompasses several other neighbouring SSSIs (but not Mynydd Llangynidr).¹⁰⁹ As a SAC, Mynydd Llangatwg will have all the protection provided by the status of an SSSI, but, in addition, any plan or project likely to have significant effects on the conservation status of the site will require an assessment of those likely effects.¹¹⁰ Any such activity will only be allowed to go ahead if the relevant authorities ascertain that it will not have an adverse effect on the integrity of the site save in exceptional circumstances.¹¹¹ Where a priority species or habitat is present those exceptions are minimal.¹¹²

The SAC was designated on several grounds including achieving favourable conservation status for the lesser horseshoe bat and some of the plants in the rock crevices.¹¹³ Blanket bog and degraded raised bog capable of natural regeneration were also recognised as special features of the site. The reference to degraded raised bog being ‘capable of natural regeneration’ is notable because this is defined as degraded raised bog ‘where the hydrology can be repaired and where, with appropriate rehabilitation management, there is a reasonable expectation of re-establishing vegetation with peat-forming capability within 30 years’.¹¹⁴ This is contrary to the view of natural regeneration as occurring without human intervention as outlined above.¹¹⁵ It is also notable that had the blanket bog been ‘active’ it would have been identified as ‘priority habitat’.¹¹⁶ Priority habitats not only attract greater protection from potentially damaging activities but qualified for co-financing measures under the EU Habitats Directive.¹¹⁷ Yet, ‘active’ peatlands form only a minority of the peat in the

108 Countryside Council for Wales (n 101).

109 Countryside Council for Wales, *Core Management Plan (Including Conservation Objectives) For Mynydd Llangatwg (Mynydd Llangatock) Site of Special Scientific Interest (SSSI), Siambre Ddu SSSI Buckland Coach House and Icehouse SSSI and Foxwood SSSI, Which Together Comprise Usk Bat Sites Special Area of Conservation (SAC)* (Countryside Council for Wales 2008).

110 Conservation of Species and Habitats regs 2017 SI 2017/1012, reg 63.

111 *ibid* reg 64.

112 *ibid*.

113 Countryside Council for Wales (n 109) and on the criteria for the designation of SACs, see n 57.

114 European Commission, *The Interpretation Manual of European Habitats* (European Commission 2013) 84.

115 See n 13.

116 Council Directive (EEC) 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora OJ L 206/92, art 4, and Annex 1.

117 *ibid* art 8.

UK.¹¹⁸ Funding routes under the EU Habitats Directive will no longer apply in Wales following the UK's exit from the EU and it is important to consider how any future reform of funding impact on SPM. It would be wise to remove the explicit focus on 'active' peatlands in both the criteria for the designation of SACs and those of funding regimes and recognise the significance of wider efforts to maintain much larger areas of peat in a deteriorating or deteriorated condition.

Despite references to other special features on Mynydd Llangatwg, the primary reason for designation of the SAC is described in the management plan as the conservation of the lesser horseshoe bat.¹¹⁹ The National Nature Reserve—Craig y Cilau—that appears in [Map 2](#) on the edge of Mynydd Llangatwg was also designated primarily to control and manage access to the cave system beneath in which the bats roost.¹²⁰ The management of Mynydd Llangatwg for the purposes of the SAC is, therefore, centred on maintaining this species at a favourable conservation status.¹²¹ As a result, the management plan focuses on providing sufficient foraging habitat for the bats and ensuring that linear features used by the bats as flight lines, such as hedgerows and trees, are maintained. These are activities that might support SPM, but, once again, this is not their main motivation.

The focus on the bats in this SAC is of particular interest given that the lesser horseshoe bat is not a 'priority species' under the Regulations. This is less surprising if one considers the strong link between habitat and species protection in the law on SACs. Ultimately, a 'habitat' exists as a type of natural environment relevant to particular species of animal or plant.¹²² However, measures of species diversity do not appropriately measure the value of peatlands to biodiversity and, especially, ecosystems resilience.¹²³ It is arguable, therefore, that the system of designation of these sites, and indeed SSSIs, needs to be more supportive of an ecosystems approach; an approach that was not as well understood at the time the legislation was introduced as it is now.

5.2 Water Management ([Map 3](#))

Water management is essential to SPM as peatlands form distinct ecohydrological units at different spatial scales. [Map 3](#) demonstrates that on Mynydd Llangynidr and Mynydd Llangatwg rainfall will be responsible for 'wetting' the blanket bog on the hill tops which is also a contributory of the water body catchments further down the slope. There are many aspects of law that will affect this ecohydrological unit including, of course, efforts to address climate change. The following discussion focuses on aspects of law and governance that have a more direct influence. One of the most

118 See discussion around active peat and the restorative capabilities of peat at n 13.

119 This is perhaps not surprising given that the whole area of the SAC is referred to as the 'Usk Bat sites'. Countryside Council for Wales (n 109).

120 *ibid* 7.

121 *ibid* 12.

122 The Oxford English Dictionary defines a habit as 'The locality in which a plant or animal naturally grows or lives.'

123 IUCN United Kingdom National Committee (n 17).

significant pieces of legislation in this respect is the Regulations pursuant to the EU Water Framework Directive (WFD).¹²⁴

Map 3 indicates that most of the peatlands in this example sit within the Usk WFD Water Management Catchment. This runs north into the Brecon Beacons and south as far as the Severn Estuary below Newport. However, some of the peatlands of Mynydd Llangynidr lie within the Southeast Valley's WFD Water Management Catchment that extends in a different direction. This is a further example of the complications created by the overlapping legal boundaries with respect to SPM. There are not just problems with the physical boundaries created by the WFD. Sectoral boundaries are also created by the fact that the WFD's holistic, spatial approach to River Basin Management (RBM) is at odds with the detailed rules on implementation of the WFD. These rules treat different hydrological systems as if they were separate, eg, groundwater, rivers, lakes, ponds and wetlands.¹²⁵

The system of RBM is centred on water quality in terms of 'good surface water status' which is to be achieved with reference to the ecology and chemical quality of the water.¹²⁶ According to NRW, achieving 'good ecological status' of the waters of the Usk Water Management Catchment will rely on reducing the impact of rural pollution; physical modifications and abstraction; and secure water supplies.¹²⁷ There is also specific mention of peatland restoration projects in addressing the decline of aquatic habitats and species in the Usk river basin.¹²⁸ Despite these measures RBM plan contains no comprehensive strategy to use SPM as a means of supporting efforts to achieve 'good surface water quality'. Nor is there any recognition of potential conflicts between SPM and other aims for the river basin.

NRW is responsible for implementing the relevant Regulations, but it works closely with the statutory water company, Dwr Cymru, in achieving its objectives for the river catchment.¹²⁹ Ordinarily Dwr Cymru's focus is reservoir catchment management. Hence, Pontsticilli Reservoir below Mynydd Llangynidr would be the primary focus. However, the Brecon Beacons provide 50% of the water for Wales and Dwr Cymru recognises that the reservoirs across the Beacons create a 'mega catchment'. Dwr Cymru manage this 'mega catchment' in a holistic way to prevent problems arising with respect to water quality and supply rather than responding to them after the event.¹³⁰

With this preventive approach in mind, Dwr Cymru have acted as a key partner in peatland restoration projects.¹³¹ Nevertheless, their focus is to fund restoration projects that make the most difference to pollution of the water bodies directly

124 See n 76.

125 Jan Peters and Moritz von Unger, *Peatlands in the EU Regulatory Environment: Survey with Case Studies on Poland and Estonia* (Federal Agency for Nature Conservation 2017) 41.

126 See n 76, art 2. This is achieved with reference to both good ecological status and good chemical status.

127 Natural Resources Wales, *Usk Management Catchment Summary* (Natural Resources Wales) 5.

128 *ibid* 6.

129 See n 78.

130 Further information is available at <www.corporate.dwrcymru.com/en/community/environment/our-projects/watersource/brecon-beacons-mega-catchment> accessed 27 June 2021.

131 See for example, information on the LIFE+ Nature project: Restoring Alkaline and Calcareous Fens within the Corsydd Mon a Llyn (Anglesey and Llyn Fens) SACs in Wales <www.iucn-uk-peatlandprogramme.org/projects/working-partnership-wetland-restoration> accessed 27 June 2021.

feeding reservoirs and to improve the quality of drinking water before it reaches treatment plants.¹³² This demonstrates how the objectives for meeting water quality in rivers and reservoirs may differ from each other and those related to SPM. On the other hand, the voluntary development of the mega catchment approach by Dwr Cymru can be viewed as evidence of the increasing recognition among key stakeholders of the multiple benefits that sustainable river management can achieve.

Map 3 also shows how virtually all the areas of deep peat on Mynydd Llangynidr and Mynydd Llangatwg are subject to designation as a Source Protection Zone (SPZ); and the entire River Usk Catchment is a Water Safeguard Zone (WSZs). These are not statutory designations but policy initiatives by NRW and Dwr Cymru to delineate the areas to focus efforts to prevent groundwater and surface water pollution respectively where there is a risk of failing to meet legislative objectives.¹³³ They are also used to feed into decisions regarding the permitting of activities by NRW, as regulator of water pollution; and development decisions on which they are consulted.¹³⁴ The benefits of this kind of spatial policy approach for SPM is clear. However, the fact remains that the zoning here is focused on reducing water pollution not developing the wider benefits of SPM that include flood prevention.¹³⁵

Map 3 outlines the River Flood Hazard High areas and their relationship to the peatlands. Flooding is significant to SPM because risk of flooding is impacted by land drainage practices and where these involve peatland drainage they are entirely incompatible with SPM; on the other hand, good SPM can be important in preventing flooding.¹³⁶ SPM can, therefore, provide a significant ‘nature based solution’ to flood risk in contrast to hard solutions such as drainage pipelines and box culverts.¹³⁷

The introduction of the Flood and Water Management Act 2010 has been significant in ensuring that NRW, Dwr Cymru and local authorities exercise their powers in a coherent manner to address the problems of flood risk. Mynydd Llangynidr and Mynydd Llangatwg traverse two local authority areas, Powys and Blaneau Gwent. All these organisations must act in accordance with relevant local flood risk management strategies.¹³⁸ There is also a duty for these organisations to co-operate in the exercise of relevant functions.¹³⁹ Nevertheless, each of these organisations has functions relevant to flood risk under several different pieces of legislation, introduced to address

132 It may be that the pollution of the peatland is very severe at the top of the catchment, but by the time it reaches the water bodies in more lowland areas is not as significant.

133 Environment Agency, *The Environment Agency's Approach to Groundwater Protection* (Environment Agency 2019) This guidance is followed by NRW.

134 See further on environmental permitting, Environmental Permitting (England and Wales) Regulations 2016 SI 1154.

135 See n 16 above.

136 *ibid.*

137 Rick Stafford and others (eds), *Nature-based Solutions for Climate Change in the UK: A Report by the British Ecological Society* (British Ecological Society 2021).

138 Local strategies by are created by ‘lead’ local authorities (s 10 Flood and Water Management Act 2010). The duty to act in accordance with these strategies is found in s 12. NRW and local authorities must also act in accordance with a National Strategy created by Welsh Government (s 8). Although in England it is the responsibility of the Environment Agency (s 7).

139 s 13 Flood and Water Management Act 2010.

very different concerns.¹⁴⁰ These organisations may also have environmental and other statutory duties associated with these individual functions that may conflict with one another and the objectives of SPM.¹⁴¹ Indeed, it is recognised in the Flood and Water Management Act 2010 that in carrying out its functions with respect to nature conservation the actions of NRW may conflict with the need to ensure flood prevention.¹⁴² Nevertheless, the legal framework as a whole does not provide these authorities with clear guidance as to how to reconcile their different responsibilities for nature conservation, flood risk and land drainage. There is certainly also no explicit recognition of SPM concerns in the legal framework for flooding and land drainage. In future, more attention needs to be given to the way in which the law and governance with respect to water management can support peatland as a 'nature based solution' not just for water quality but flooding.

5.3 Forestry and Agriculture (Map 1)

Map 1 demonstrates the close proximity that may exist between woodlands and areas of peatland. In scenarios such as the area outlined in Map 1, it is entirely feasible that there will be pressure to increase the woodland area given the Welsh Government's policy on woodland creation.¹⁴³ Indeed, the proposals for a new land management system in Wales include reference to: the need for a simple predictable system for approval of new woodlands; support to enable and reward the creation of new woodland and the development of agroforestry systems on farms; and means of incentivising woodland creation in other areas.¹⁴⁴ The new legislative framework must, however, account for the needs of SPM in plans for any new planting on peatlands, whether or not they fall within protected areas.

Currently, appropriate tree planting for SPM relies heavily on the system of EIA that applies to both afforestation and deforestation projects.¹⁴⁵ It is vital the thresholds for carrying out assessment in this legislation are appropriate, and that environmental information provided is sufficient to ensure that the needs of SPM are considered. There are also proposals in Wales to widen the conditions for licensing felling to ensure that nature conservation considerations are included but this should also be extended to concerns for SPM.¹⁴⁶

The UK Forestry Standard (UKFS) is also important to forestry management in Wales.¹⁴⁷ The UKFS recognises that more carbon can often be found in peat-based soils underneath woodlands than in tree biomass.¹⁴⁸ However, the main focus with

140 *ibid* s 4.

141 For example, local authorities have general environmental duties in carrying out their land drainage functions. *ibid* s 61(B).

142 s 38 Flood and Water Management Act 2010.

143 Size of Wales (n 41).

144 Welsh Government (n 74) 46–47.

145 See n 69 above. Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999 SI 1999/2228.

146 Welsh Government (n 74) 47.

147 Forestry Commission England, Forestry Commission Scotland, Natural Resources Wales, and Forestry Service, *The UK Forestry Standard: The government's approach to sustainable forestry* (Forestry Commission 2017) 47.

148 *ibid* 57.

respect to peat protection is on peatlands described as ‘priority habitats’; a definition that includes only deep peat and active raised bog.¹⁴⁹ Nevertheless, at least in these areas the UKFS creates a presumption against the conversion to other land use.¹⁵⁰ On the other hand, the narrow focus of the UKFS demonstrates a lack of understanding of the complex the relationship between trees and peatlands that differs depending on the nature and extent of the peatland. The UKFS is currently being revised and it is hoped that the new version will be much improved in these respects.¹⁵¹

Although [Map 1](#) does not include reference to private property rights we know that the peatland areas of Mynydd Llangynidr and Mynydd Llangatwg are owned by a single land owner, but grazed by two commoners associations. As with forestry, given that agricultural use of land is excluded from the land use planning regime the EIA regime is particularly significant in this regard.¹⁵² The Regulations apply to uncultivated and/or semi natural areas and semi-natural areas may include bog, fen, marsh and swamp. However, such peatlands will only be covered by the Regulations if they contain less than 25% rye grass, white clover and/or other agricultural species.¹⁵³ This threshold may, therefore, exclude some peatlands. Perhaps most importantly, the Regulations will not apply to the many peatlands that have been converted and actively managed as extensive and intensive grasslands, or even arable agriculture, but where the peat still exists under the vegetation on cultivated land. Therefore, these Regulations create further boundaries across the peatlands of Mynydd Llangynidr and Mynydd Llangatwg that are less visible than those created by legal designations for nature conservation and water management but will not necessarily fit easily with any of them.

The EIA system for agriculture is, therefore, another area of law that needs to be reformed if we are to take a holistic approach to land management in the interests of SPM. This is particularly important because this system has the potential to provide a mechanism for SPM that could be more far reaching than nature conservation designations given that, even using the current definitions, it relates to a much greater area of land in Wales.¹⁵⁴

Farm boundaries and common grazing rights are also essential to the allocation of agricultural subsidies which create a significant economic driver of SLM. As a result, the reform of agricultural payment systems in Wales following Brexit are crucial. According to the Agriculture White Paper for Wales the principal goal of the system will be to support the delivery of SLM. Key to the proposals is the Sustainable Farming Scheme (SFS). The SFS is described as a business improvement

149 Priority habitats are generally defined in the UKFS as ‘areas that have the potential to provide the richest and most varied components of biological diversity within the UK.’ However, in the context of peatlands climate change is also noted as a factor *ibid* 44.

150 *ibid* 44.

151 See further <<https://www.gov.uk/government/publications/the-uk-forestry-standard>> accessed 16 October 2021.

152 See n 69 above. Environmental Impact Assessment (Agriculture) (Wales) Regulations 2017/565.

153 *ibid*, Regulation 2 and Welsh Government, *The Environmental Impact Assessment (Agriculture) (Wales) Regulations 2017 General Guidance* (Welsh Government 2017) 5.

154 For example, between 2002 and 2016 the former provisions in this respect on EIA avoided significant impacts on 89 grassland sites. Welsh Government, *The Environmental Impact Assessment (Agriculture) (Wales) Regulations 2017 General Guidance* (Welsh Government 2017) 4.

programme focused on rewarding changes to farming practice, infrastructure improvement and changes in land use that contribute to societal outcomes.¹⁵⁵ It will provide a holistic approach to payment for outcomes linked to Wales' well-being to ensure the sustainable future of agriculture:

Sustainable food production is at the heart of [a] sustainable future, but it is also about supporting changes to farming practice to respond to the climate emergency, the decline of biodiversity and the public health issues associated with emissions from agriculture.¹⁵⁶

The White Paper notes that the SFS should result in visible changes at a landscape scale including increased woodland cover, horticultural production and farm and landscape scale habitat resilience; but also less visible improvements to Wales' carbon footprint and water/air quality.¹⁵⁷ It is these more hidden changes that will be most significant to SPM, and it is important that this lack of visibility does not result in less attention to these concerns. It is also notable that the detailed outline of proposals for the scheme refer to the particular importance of peat bog restoration to increasing levels of carbon sequestration.¹⁵⁸ This is a welcome development but, as outlined above, the reference to the role of peat restoration in carbon sequestration provides a rather narrow focus on the significance of SPM in SLM.

Entry to the new SFS will be conditional on compliance with statutory National Minimum Standards (NMS). The NMS will be based on the current requirements for cross compliance with respect to direct payments under Pillar 1 of the CAP, i.e. Statutory Management Requirements (SMRs) and Good Agricultural Environmental Conditions (GAECs).¹⁵⁹ Two key issues arise in this respect. First, it will be essential to SPM to include the Regulations implementing the WFD (which were not included in SMRs under the CAP system) in the new NMS.¹⁶⁰ Secondly, the inclusion of a reference to soil cover protection in the GAECs in the new NMS. This is particularly important because the management of soil is essential to SLM; but there is currently no comprehensive statutory framework in this regard.¹⁶¹ The new regime must also be specific in its application to peat soil as it is not obvious that peat is a soil.

6. DISCUSSION: IMPROVING LAW AND GOVERNANCE FOR SUSTAINABLE PEATLAND MANAGEMENT

Mapping the legal boundaries relevant to SPM demonstrates the complexities of these frameworks and difficulties in ensuring their effective application to this aim.

155 Welsh Government (n 74) 29–30.

156 *ibid* 1.

157 *ibid* 14.

158 *ibid* 32.

159 See n 71.

160 Peters and von Unger (n 125) 10.

161 One reason may be the reliance on EU action on environmental law. The EU created a proposal for a soil Directive in 2014, but this did not come to fruition (Commission 'Proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil' COM (2006) 0232 final.

In addition, there is often confusion and ambiguity in the terms used such as ‘priority habitats’ and even the word soil. Together the complexity and ambiguity in the current legislation means it is operationally challenging to make decisions with respect to SPM. These concerns need to be urgently addressed, to make the relevant decision-making processes clearer and simpler, and enable those taking decisions to maximise the contribution of SPM to key outcomes in terms of carbon reduction, water quality, flood prevention and ecosystems resilience. There are a number of actions that could be taken to improve this situation.

6.1 Amending the Existing Legal Frameworks that Impact on SPM

Amending the legal frameworks to address the issues raised in this article will be important in providing for effective SPM. First, maximising the contribution of SPM to nature recovery by introducing the following changes to the current legislation on nature conservation designations. Ensuring peatlands do not just sit within nature conservation designations (as promoted by the UK Peatlands Strategy), but that SPM is included in the reasons for designation of SSSIs and SACs. To support SPM, any changes in this respect will also need to ensure these criteria make reference to the maintenance, enhancement *and restoration* of these areas. More fundamentally, the approach to designation must better reflect our current understanding of the importance of an ecosystems approach as opposed to centring on endangered species and their habitats. This would be more effective for SPM and is also particularly significant in Wales where the Welsh Government has based its approach to nature recovery on SMNR and is committed to ensuring the resilience of ecosystems for the well-being of Wales.¹⁶² Any new system must also recognise the importance of connections between biodiversity and climate change in promoting Nature Recovery. In addition, it will be important to integrate the aims of SPM in the law and governance of water management with respect to both water quality and flood prevention (to ensure that decision makers are able to maximise the contribution of SPM to both); and to integrate the aims of SPM in law as well as policy on land use planning, EIA, and agriculture/forestry management (including the need to provide clarity on the status of peat as a soil in any future measures in this regard).

Regulatory reform at this scale is a significant task, but Welsh Government is well placed to take a lead on this given its commitment to create an Environmental Code as part a wider focus on the accessibility of Welsh law.¹⁶³ The UK’s exit from the EU has also been timely in providing an opportunity to amend the existing legal frameworks in the interests of SPM given that most of these laws have their foundation in EU law and now form part of EU retained law. Regulatory reform at this scale will, nevertheless, take some time and, meanwhile, important short-term gains can be achieved by providing for more cohesive and collaborative approaches to governance systems for SPM.

¹⁶² See n 78 onwards above.

¹⁶³ The Legislation (Wales) Act 2019 requires the Welsh Government to keep the accessibility of Welsh Law under review. On proposals for codification, see further Welsh Government, *The Future of Welsh Law: Classification, Consolidation, Codification* (Welsh Government 2019).

6.2 Amending the Governance Frameworks for SPM

At present there are several organisations with responsibilities relevant to SPM with different remits. Therefore, the governance of SPM could be improved by integrating SPM goals in the operation of the relevant organisations. This could be achieved by introducing a separate duty on all these organisations to consider the importance of the maintenance, enhancement and restoration of peatlands in the exercise of their functions. However, as in the case of biodiversity, essential barriers will emerge given the competing duties of public authorities and the lack of ‘teeth’ provided by such a general duty.¹⁶⁴ Thus, it might be preferable to ensure that SPM is recognised as an essential element of SMNR and that proposals to extend this duty to all public authorities in Wales come to fruition.¹⁶⁵

Collaboration and participation are important principles of governance for all public authorities in support of the WFG; and specifically for NRW, in adopting its approach to SMNR.¹⁶⁶ These principles should therefore underline any new governance initiatives for SPM in Wales. NRW is currently the lead organisation in implementing the Welsh Government’s targets for SPM in the National Peatland Action Programme (NPAP). It is anticipated that the NPAP will stimulate the development of new partnerships and delivery groups that will be grant aided by NRW.¹⁶⁷ Collaborative and partnership working between NRW, statutory organisations and especially landowners and managers will, therefore, be essential in meeting Wales’s targets on SPM.

There are already examples of good practice in Wales. In the Brecon Beacons, the Black Mountains Landscape Partnership aims to improve the management of this upland area.¹⁶⁸ It has developed a number of projects including peatland restoration and is working on schemes for the payment for ecosystem services.¹⁶⁹ Commons Councils can also provide an important role in developing participatory governance for SPM as they support collaboration between landowners, commoners and other interested parties in managing commons.¹⁷⁰ It has been suggested that their legal purpose in Wales should be amended to include SLM objectives, but consideration should also be given to the need to include SPM.¹⁷¹

6.3 Developing Good Quality Data and Robust Monitoring and Reporting Processes on SPM

Any reform of the current arrangements for law and governance on SPM will need to be based on reliable data. This can also be useful in driving legal developments as

164 This was the reason why the general duty related to biodiversity in s 40 Natural Environment and Rural Communities Act 2006 was replaced by s 6 Environment (Wales) Act 2016 to introduce a 3-year reporting requirement.

165 Welsh Government (n 83). This would also need to extend beyond the current definition of public authorities in Wales, found in the Well-Being of Future Generations Wales Act 2015 if it is to encompass *Dwr Cymru*.

166 See n78 onward above.

167 Natural Resources Wales (n 1) 25 and 26.

168 See further <www.blackmountains.wales/> accessed 29 June 2021.

169 *ibid*.

170 Rodgers and others (n 22) 69 onwards.

171 Welsh Government (n 74) 51.

seen in the example of the Geological Conservation Review which underlined the designation of SSSIs on geological grounds.¹⁷² Thus, the detailed mapping of peatland resources in Wales that has been promised is to be welcomed.¹⁷³ This must include shallow as well as deep peat.

NRW's National Peatland Action Programme also refers to the need for a national monitoring system to track progress.¹⁷⁴ These activities should feed into the State of National Natural Resources Report (SoNARR).¹⁷⁵ In the first SoNARR, in 2016, it was noted that only 30% of Welsh peatlands are considered to be in good condition.¹⁷⁶ This highlights the extent of the challenge ahead and the importance of SoNARR as a means of supporting data collection, monitoring and reporting on SPM.

6.4 Restructuring Law and Governance Systems for SLM

SLM laws have emerged at different times, often many years ago, as a response to different sectoral concerns. This approach is clearly not fit for purpose in addressing the complexity of the challenges we currently face or to respond to the crises arising from climate change. Nor is it sufficiently flexible to adapt to emerging scientific knowledge about these issues and appropriate responses. In addition, many of these laws were developed at a time when there was little recognition of the need for more collaborative approaches to the governance of these issues. Thus, in the longer term achieving our goals in terms of SPM will rely on a radical restructure of the law and governance systems for SLM focused on maximising the contribution of SLM to environmental imperatives, such as climate change mitigation and nature recovery. The legal framework must also be developed in line with the principles of flexibility, collaboration and adaptiveness.

Any fundamental change needs to be based on a debate with relevant stakeholders as to the best means of doing so and there is an urgent need to begin this conversation. However, based on the evidence emerging from this research and the authors experience in their relevant fields we would suggest the following basic tenets of a new system for SLM. First, any new system should centre on current priority outcomes such as, biodiversity conservation, carbon reduction, water quality and flood prevention and ecosystems resilience; but also have the capacity to be adaptive to respond to new and emerging issues that may affect desirable outcomes. This might involve new zoning approaches that focus the attention of all stakeholders on maximising the contribution of a particular area to a range of environmental outcomes in these respects. Indeed, it might also include reference to outcomes focused on 'well-being' concerns, such as the cultural contribution of a peatland to a local community.

This is not unlike the current model for the new SFS in Wales, but the SFS will only operate on a farm scale. In fact, there are multiple scales at which this could

172 See n 96 above.

173 Natural Resources Wales (n 10) 22.

174 *ibid* 25.

175 *State of National Natural Resources Report Chapter 3 Summary of the Extent, Condition and Trends of Natural Resources and Ecosystems in Wales* (Natural Resources Wales 2016).

176 *ibid* 24.

operate depending on the specific environmental conditions in a given area. With respect to peatlands, for example, an area could be delineated relative to its features in terms of afforestation, amount of vegetation, depth of peat, etc. This system would operate on the basis that all land is significant to these outcomes, but that the contribution to be made is dependent on its particular attributes.

Alternatively, we could adopt a system based on creating different spatial zones for different outcomes (accepting that these would overlap at points). We have a precedent here in terms of SPZs and WSZs that help deliver specific priority outcomes with respect to water quality. However, we could add to this the establishment of separate carbon reduction, flood prevention and ecosystem resilience zones to address new and emerging clearly defined priority outcomes for these concerns. For example, Carbon Protection Zones could include a degraded peatland that does not support semi-natural vegetation, recognising the value as a carbon store rather than the current biodiversity conservation value. These zones would provide a spatially layered approach to national priorities, but also create local, place-based priorities to clearly inform and support site specific SPM decision-making; and help the public, farmers and land managers understand, and justify, place-based SPM priorities.¹⁷⁷

7. CONCLUSIONS

There is increasing attention to policy and practice on peatlands management in the UK and Wales in the light of environmental imperatives in terms of climate change and nature recovery. Nevertheless, there has been little by way of comprehensive review from a legal perspective. This article has provided such a review by mapping the complications created by the boundaries of peatlands, law, policy and governance. This approach provides a useful means of describing the landscape of law and governance for academic lawyers but is also important in facilitating discussions with those from other disciplines. These cross-disciplinary discussions will be essential in contemplating the way forward for law and governance for SPM given the complexities of this task. Perhaps most importantly, a map not only illustrates current concerns but can be inspirational; making the impossible seem possible.

This study suggests that more effective SPM can only be achieved through the reform of the extensive law and governance frameworks that currently impact on these objectives. The more significant conclusion is that, in the longer term, a more fundamental reshaping of the legal architecture for SLM is required. SLM law is currently characterised by fragmentation with very different objectives and governance arrangements with respect to different natural resources such as flora/fauna and water. This is perhaps unsurprising for a legal landscape in a state of infancy; but it has created a web of overlapping rules and responsibilities for statutory organisations to apply. Fundamental reform of SLM law could achieve not just more effective SPM, but help to deliver multiple ecosystems benefits, especially in terms of climate

177 It is vital in this respect that the titles adopted use plain English/Welsh titles that mean something to the public and practitioners in contrast to titles such as Sites of Special Scientific Interest which have little relevance or appreciation to those on the ground and in fact might actually have an exclusionary effect.

change and ecosystems resilience. Nevertheless, such wide-ranging reform will require serious political focus.

Wales has a high level of environmental ambition which is clearly illustrated by the introduction of laws for WFG and SMNR. These frameworks now provide a set of legal principles that drive policy making in Wales towards more holistic approaches to the delivery of the countries well-being goals. This has proven the possibilities for creating rule systems that deal with complex issues by providing a broad framework for decision making, focused on the values of flexibility, collaboration and adaptiveness.¹⁷⁸ Wales also has a coherent framework for data collation reporting and monitoring that could be utilised to underline any future legal developments. Furthermore, the size of Wales is useful in facilitating the necessary collaboration between lawyers, policy makers and, most importantly, land managers and practitioners.

In short, Wales may be a small country, but it has proven not to be afraid of radical reform and is well placed to develop innovative approaches to environmental problems. It is a country that has a vibrant environment which it recognises to be of significant value to the economic, social and cultural wellbeing of its people. This research is the first step in providing a clear evidence base for the development of an effective legal architecture to support both SPM and SLM in Wales. This should be viewed as Welsh Government's next important challenge; not just for Wales but as an international exemplar.¹⁷⁹

178 *ibid.*

179 To stand alongside its international exemplar in the form of the Well-being of Future Generations (Wales) Act 2015.