The Second State of Natural Resources Report (SoNaRR2020)

SoNaRR2020 Register semi-natural grasslands key pressures and opportunities

Natural Resources Wales

Final Report

Mae'r ddogfen hon hefyd ar gael yn Gymraeg

About Natural Resources Wales

Natural Resources Wales's purpose is to pursue sustainable management of natural resources. This means looking after air, land, water, wildlife, plants and soil to improve Wales's well-being, and provide a better future for everyone.

Evidence at Natural Resources Wales

Natural Resources Wales is an evidence-informed organisation. We seek to ensure that our strategy, decisions, operations and advice to Welsh Government and others are underpinned by sound and quality-assured evidence. We recognise that it is critically important to have a good understanding of our changing environment.

We will realise this vision by:

- Maintaining and developing the technical specialist skills of our staff;
- Securing our data and information;
- Having a well resourced proactive programme of evidence work;
- Continuing to review and add to our evidence to ensure it is fit for the challenges facing us; and
- Communicating our evidence in an open and transparent way.

Title: **SoNaRR2020 Register semi-natural grasslands key pressures and opportunities**

Peer Reviews: Internal and external peer review

Restrictions: None

The Second State of Natural Resources Report (SoNaRR2020) contents

This document is one of a group of products that make up the second State of Natural Resources Report (SoNaRR2020). The full suite of products are:

Executive Summary. Foreword, Introduction, Summary and Conclusions. Published as a series of webpages in December 2020

The Natural Resource Registers. Drivers, Pressures, Impacts and Opportunities for Action for eight Broad Ecosystems. Published as a series of PDF documents and as an interactive infographic in December 2020

Assessments against the four Aims of SMNR. Published as a series of PDF documents in December 2020:

SoNaRR2020 Aim 1. Stocks of Natural Resources are Safeguarded and Enhanced

SoNaRR2020 Aim 2. Ecosystems are Resilient to Expected and Unforeseen Change

SoNaRR2020 Aim 3. Wales has Healthy Places for People, Protected from Environmental Risks

SoNaRR2020 Aim 4. Contributing to a Regenerative Economy, Achieving Sustainable Levels of Production and Consumption

The SoNaRR2020 Assessment of Biodiversity. Published in March 2021

Assessments by Broad Ecosystem. Published as a series of PDF documents in March 2021:

Assessment of the Achievement of SMNR: Coastal Margins

Assessment of the Achievement of SMNR: Enclosed Farmland

Assessment of the Achievement of SMNR: Freshwater

Assessment of the Achievement of SMNR: Marine

Assessment of the Achievement of SMNR: Mountains, Moorlands and Heaths

Assessment of the Achievement of SMNR: Woodlands

Assessment of the Achievement of SMNR: Urban

Assessment of the Achievement of SMNR: Semi-Natural Grassland

Assessments by Cross-cutting theme. Published as a series of PDF documents in March 2021:

Assessment of the Achievement of SMNR: Air Quality

Assessment of the Achievement of SMNR: Climate Change

Assessment of the Achievement of SMNR: Energy Efficiency

Assessment of the Achievement of SMNR: Invasive Non-native Species

Assessment of the Achievement of SMNR: Land use and Soils

Assessment of the Achievement of SMNR: Waste

Assessment of the Achievement of SMNR: Water Efficiency

Updated SoNaRR evidence needs. Published in March 2021

Acronyms and Glossary of terms. Published in December 2020 and updated in March 2021

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Semi-natural grasslands Natural Resource Register

SoNaRR2020

The Natural Resource Registers are an important output of SoNaRR2020.Their purpose is to distil the key pressures and opportunities identified within the chapters and to provide an accessible assessment of SMNR.

The Semi-natural grasslands natural resource register is made up of two additional documents:

1. SoNaRR2020 Register semi-natural grasslands evidence sssessment of SMNR

2. SoNaRR2020 Register semi-natural grasslands evidence

Table 1 Key Drivers, Pressures and Impacts on the Semi-Natural Grasslands Ecosystem

Driver	Pressure	Impact
Climate Change	1. Changing Weather Patterns	1.1. Causing the altering of the hydrology of some wet grassland systems and die back caused by extreme drying. Confidence Assessment: MEDIUM SMNR Aim 2 1.2. The indirect effects of climate change, including changes to land management, may be more significant. Confidence Assessment: MEDIUM SMNR Aim 2 and 4
Pollution	2. Air Pollution	2.1. Biodiversity in grassland is severely negatively impacted by high levels of nutrient enrichment from atmospheric nitrogen deposition, which can also cause soil acidification. Confidence Assessment: HIGH SMNR Aim 1 and 2 2.2. Causes decreased species-richness of grassland through the twin effects of eutrophication and soil acidification. Confidence Assessment: HIGH SMNR Aim 1 and 2

Driver	Pressure	Impact
Land Use Change	3. Insufficient Management	3.1. Resulting in declining plant species-richness and condition, over-dominance of tall, robust species and eventually loss of grassland to scrubland. Confidence Assessment: HIGH SMNR Aim 2 3.2. Undermanagement and overgrazing are both likely to deplete pollinator resources, as well as causing overall species impoverishment. Confidence Assessment: HIGH SMNR Aim 1 and 4 3.3. Undermanagement means lower livestock production and an increased fuel loading, meaning increased fire risk. Confidence Assessment: MEDIUM SMNR Aim 3 and 4

Driver	Pressure	Impact
Land Use Change	4. Agricultural Intensification	4.1. Loss of lowland wet grasslands is considered to be the main cause of decrease in lapwing Confidence Assessment: HIGH SMNR Aim 1 4.2. Increased soil compaction levels, which can reduce the soil's capacity to hold water and thus potentially increase flood risk. Confidence Assessment: MEDIUM SMNR Aim 3 4.3. High levels of fertiliser application lead to the decline in grassland diversity and condition, and eventually habitat loss Confidence Assessment: HIGH SMNR Aim 1 and 2 4.4. Likely to deplete pollinator resources, as well as causing overall species impoverishment. Confidence Assessment: HIGH SMNR Aim 1 and 4 4.5. Leads to fragmentation - lack of ecological connectivity of semi-natural grasslands leads to isolation of less mobile species, making them at much greater risk of extinction. Confidence Assessment: HIGH SMNR Aim 1 and 2

Driver	Pressure	Impact
Land Use Change	5. Insufficient Management	5.1. Causing protected sites to not be appropriately managed, leading to poor condition. Confidence Assessment: HIGH SMNR Aim 2 5.2. Protected sites may become 'habitat islands', poorly connected to other habitat patches Confidence Assessment: HIGH SMNR Aim 2 5.3. Unprotected sites may be lost, for example through fertiliser application Confidence Assessment: HIGH SMNR Aim 1 and 2
Land Use Change	6. Built Development and Infrastructure	6.1. Areas of semi-natural grassland outside the statutory site network are locally at greatly increased risk from land development, including new roads, quarrying and housing. Confidence Assessment: MEDIUM SMNR Aim 1
Land Use Change	7. Unmanaged Access, Sport and Recreational Activity	7.1. Recreation damage to upland calcareous and calaminarian grassland is locally significant. Confidence Assessment: HIGH SMNR Aim 1 and 2

Driver	Pressure	Impact
Land Use Change	8. Competing Land Use	8.1. Small losses of SNG to afforestation have so far been recorded (High Confidence), but the threat is very likely to be greater in the future as afforestation increases to help with climate change. Confidence Assessment: MEDIUM SMNR Aim 1
INNS, Pests and Disease	9. INNS	9.1. Species such as Cotoneaster can spread over calcareous grassland if not controlled. Undermanagement of wet grasslands may aid spread of Himalayan balsam. Confidence Assessment: HIGH SMNR Aim 2

Opportunities for Action

Aim 1: Stocks of Natural Resources are safeguarded and enhanced

Improve regulatory approach. Prevent loss of or damage to grassland habitat, e.g. in EIA (Agriculture) Regulations, tree planting (including EIA (Forestry) Regulations) and planning decisions. Eliminate damaging regulatory gaps. Improve regulation of damaging emissions and siting of local pollution sources such as poultry units. Provide clear guidance and incorporate SMNR objectives and principles into regulation.

Designate more grassland habitat. Only 10% of grassland Priority Habitat is currently on protected sites, considerably lower than the Convention on Biological Diversity (Aichi) target of 17% (of terrestrial areas on protected sites). A number of unprotected grassland sites of high conservation interest (candidate SSSIs) have already been identified.

Produce targets for achieving good grassland condition on protected sites. Currently an estimated 70% of grassland habitat on SSSIs is in poor condition, undermanagement being the principal cause (see section 2.1.1). Increase coverage and efficacy of SSSI management agreements.

Ensure that agri-environment schemes are sufficiently resourced and incentives sufficient to encourage high uptake of grassland habitat. Only 19% of mapped grassland Priority

Habitat has been covered by Glastir Advanced grassland options in recent years (2012 to 2019).

Target grassland restoration and creation. To improve ecological connectivity and increase ecosystem resilience, e.g. around protected sites, and improve ecosystem service provision, e.g. on floodplains (reducing water pollution levels and flood risk), close to habitation (cultural and educational services) or close to pollinated crops (pollinator service).

Undertake research within the ecosystem to better understand the structure, function, fertility and nutrient cycles (including soil carbon) of its soils.

Create a coherent and integrated approach to land use and the prioritisation of management change across all ecosystems at appropriate scales. This could help to support place-based delivery.

Given that there was an increase in upland acid grassland in the latter part of the 20th century due to over-grazing of heathland, restoration of some acid grassland back to heathland should be considered, focusing on areas where ericoid shrubs are still frequent.

Aim 2: Resilient Ecosystems

Improve regulatory approach. Prevent loss of or damage to grassland habitat, e.g. in EIA (Agriculture) Regulations, tree planting (including EIA (Forestry) Regulations) and planning decisions. Eliminate damaging regulatory gaps. Improve regulation of damaging emissions and siting of local pollution sources such as poultry units. Provide clear guidance and incorporate SMNR objectives and principles into regulation.

Target grassland restoration and creation. To improve ecological connectivity and increase ecosystem resilience, e.g. around protected sites, and improve ecosystem service provision, e.g. on floodplains (reducing water pollution levels and flood risk), close to habitation (cultural and educational services) or close to pollinated crops (pollinator service).

Take into account habitat mixtures. Ecological resilience is significantly enhanced where semi-natural grassland occurs in mixtures with other habitats to form more substantial habitat patches. Grasslands are frequently found intermixed with heathland, wetland and woodland habitats; such mixtures, and the transitions between habitats, are important for a range of species.

Targeted grassland creation, as well as restoration of existing sites, can further enhance ecosystem resilience and service benefits where forming part of existing important ecological networks.

Given that there was an increase in upland acid grassland in the latter part of the 20th century due to over-grazing of heathland, restoration of some acid grassland back to heathland should be considered, focusing on areas where ericoid shrubs are still frequent.

Produce targets for achieving good grassland condition on protected sites. Currently an estimated 70% of grassland habitat on SSSIs is in poor condition, undermanagement being the principal cause (see section 2.1.1). Increase coverage and efficacy of SSSI management agreements

Ensure that agri-environment schemes are sufficiently resourced and incentives sufficient to encourage high uptake of grassland habitat. Only 19% of mapped grassland Priority Habitat has been covered by Glastir Advanced grassland options in recent years (2012 to 2019).

Sustainable land management. Grassland management focused away from mainly food production to multiple ecosystem service provision, delivered by low-intensity management: reducing pollution levels, providing pollinator habitat, reducing flood risk, etc., and providing high-quality food in a sustainable way. Provide sufficient incentives, e.g. agri-environment schemes. Improve resilience in face of climate change.

Aim 3: Healthy Places for People

Improve regulatory approach. Prevent loss of or damage to grassland habitat, e.g. in EIA (Agriculture) Regulations, tree planting (including EIA (Forestry) Regulations) and planning decisions. Eliminate damaging regulatory gaps. Improve regulation of damaging emissions and siting of local pollution sources such as poultry units. Provide clear guidance and incorporate SMNR objectives and principles into regulation.

Produce targets for achieving good grassland condition on protected sites. Currently an estimated 70% of grassland habitat on SSSIs is in poor condition, undermanagement being the principal cause (see section 2.1.1). Increase coverage and efficacy of SSSI management agreements.

Ensure that agri-environment schemes are sufficiently resourced and incentives sufficient to encourage high uptake of grassland habitat. Only 19% of mapped grassland Priority Habitat has been covered by Glastir Advanced grassland options in recent years (2012 to 2019).

Target grassland restoration and creation. Improve ecological connectivity and increase ecosystem resilience, e.g. around protected sites, and improve ecosystem service provision, e.g. on floodplains (reducing water pollution levels and flood risk), close to habitation (cultural and educational services) or close to pollinated crops (pollinator service).

Create a coherent and integrated approach to land use and the prioritisation of management change across all ecosystems at appropriate scales. This could help to support place-based delivery.

Aim 4: A Regenerative Economy

Improve regulatory approach. Aimed at preventing loss of or damage to grassland habitat, e.g. during EIA (Agriculture), tree planting (including EIA (Forestry)) and planning decisions, including in siting of local pollution sources such as poultry units. Provision of clear guidance and incorporation of SMNR principles.

Reinstate grazing on undermanaged sites to provide sustainable food production and simultaneously increase other ecosystem benefits

Produce targets for achieving good grassland condition on protected sites. Currently an estimated 70% of grassland habitat on SSSIs is in poor condition, undermanagement being the principal cause (see section 2.1.1). Increase coverage and efficacy of SSSI management agreements.

Develop sustainable standards for agriculture. To balance the improvement of the structure and functioning of our ecosystems alongside the provision of food, fibre and other services. We must be able to describe 'what good is'. 'Good' has to be responsive to

our monitoring and modelling if effective measures are to achieve SMNR and well-being outcomes.