

Air Pollution Bulletin

Number 10 - Summer 2021

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Air pollution is a major environmental pressure that is felt at a range of scales from local to regional and global. Air pollutants can affect biodiversity and ecosystem services, harm human health and contribute to climate change. Since the last bulletin published in early 2019, global understanding about air pollution and its effects on people and nature has continued to grow.

JNCC and the country nature conservation bodies (CNCBs) collaborate on air pollution work through the Interagency Air Pollution Group (IAPG). Through the group, we work together to provide evidence and advice on air pollution impacts on biodiversity and ecosystems.

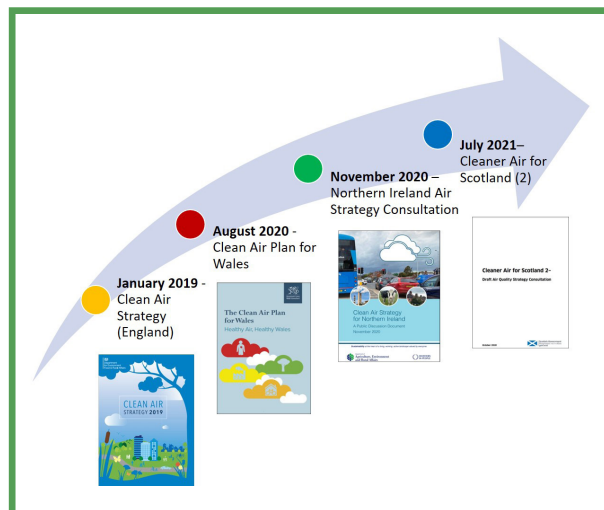
The Air Pollution Bulletin provides an overview of the IAPG's key activities, in what has been a busy and exciting period for the group. There are also links to further information. It is principally an update for policy leads and conservation agency staff, but we hope it is also of interest to other organisations, the research community and the general public. If you have any comments, or would like more details on any of the topics covered, please email Susan.Zappala@jncc.gov.uk.

A lot has changed since the last bulletin with IAPG joint working on several UK level projects to enhance understanding of air quality issues and inform national and UK-level policy going forward. These have come to fruition thanks to partnerships forged with Defra and the governments of the four countries to work at UK level. Many have focussed on traditional subjects such as ecosystem and air quality monitoring, however several projects also looked at how this evidence is used in approaches to risk assessment and decision-making.

JNCC's coordination and international influence have played a key role in facilitating the IAPG's work and ensuring that UK evidence gathering and capability are fit for purpose. As multi-lateral environmental agreements look to refresh ambitions around pollution, including from air pollution, JNCC's experts are working with the four countries to leverage UK expertise and evidence at a global level through enhanced joint working in the UK.

This issue takes a themed approach to reflect the UK level working alongside the country-specific pursuits. We hope you enjoy this issue of the IAPG Air Pollution Bulletin and look forward to hearing how the evidence can help in your work. To learn more please sign up to the [JNCC Air Pollution Project Stakeholder list](#).

National Clean Air Strategies



Wales launched the Clean Air Plan for Wales in August 2020, setting out its long-term ambition to improve air quality and a 10-year pathway to cleaner air. It is structured around the core themes of people, environment, prosperity and place.

Scotland published the Cleaner Air for Scotland (CAFS) 2 on the 15 July 2021. This outlines the Scottish Government's strategy for reducing air pollution over the next five years. Its 10 general themes are largely shaped by the recommendations of the CAFS Independent Review in 2019. This includes addressing the impact of sectors that were not addressed in detail in the original CAFS such as household burning and agriculture.

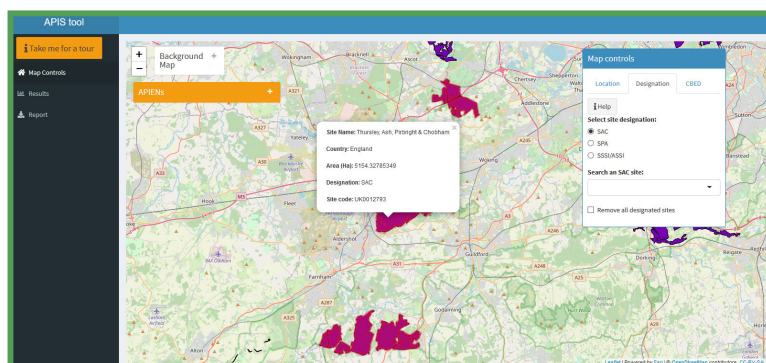
Northern Ireland conducted a consultation for the Northern Ireland Clear Air Strategy from November 2020-February 2021. This aims to formulate a strategy to tackle emissions from road traffic, household heating and agriculture.

The Clean Air Strategy for England was published in January 2019. A commitment from the 25 Year Environment Plan, the strategy outlines Government ambitions relating to reducing air pollution to protect health, nature and boost the economy. It aims to set a direction for future air quality policies and actions for the next decade and beyond.

APIS Emissions Source Attribution and Mapping Updates

[Air Pollution Information System](#) (APIS) provides a comprehensive source of information on air pollution and the effects on habitats and species. APIS was developed in partnership by the UK conservation agencies and regulatory agencies and the UK Centre for Ecology and Hydrology (UKCEH). It is a free online, text-based website to support understanding of air pollution risk to UK ecosystems.

APIS turns 17 this year, having been established in 2004. The website has received almost £100k investment in the last year including the APIS Emission Source Attribution Dataset Update (last updated in 2012) and creation of a new APIS Mapped Interface, which launched on the 20th May 2021 and was attended by 90 people. The UK Air Pollution Impacts on Ecosystem Networks (APIEN) were added as a selectable layer, along with the ability to download a report containing information selected using the mapping tool. UK APIENS are the monitoring networks which provide the data on air quality and ecosystem effects used for international reporting. A more detailed article is available in the Mapping and Quantifying Air Pollution section.



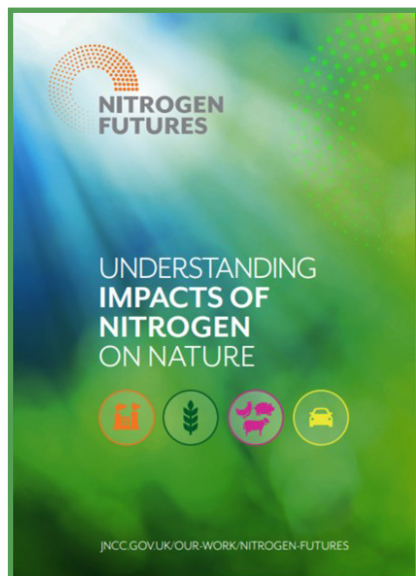
Air Pollution and Decision-Making Thresholds

The [Decision-making thresholds project](#) aims to develop an evidence-based approach for determining when a proposal and the emissions it gives rise to are considered inconsequential in the context of ecological risk assessment. This fills an evidence gap identified through new case law and implications for risk assessment approaches in the UK. This project was led by DTA Ecology with modelling provided by AQC (Air Quality Consultants) and supporting advice from EPR (Ecological Planning & Research) and UKCEH. IAPG will work with stakeholders in 2021/22 to understand how the evidence can be used and what training or tools are required.

A workshop with ecologists was conducted in November 2020, followed by modelling. This aimed to provide the evidence for instances where plans or projects have a small enough effect that they can rely on a national data based assessment for their conclusions about the “in-combination” effect. The project is reaching its conclusion and currently in quality assurance so please keep your eye out for publication this year.

News in Brief

Nitrogen Futures Project Publishes Report



The Nitrogen Futures Project was funded by Defra and led by JNCC, bringing together the devolved administrations, the country nature conservation bodies and research organisations. The main objective of Nitrogen Futures was to explore how different emission mitigation measures could improve the long-term status of habitats and nature protected sites in the UK. The project developed scenarios for nitrogen oxide and ammonia emission reductions to 2030 and beyond (2040+). Scenarios included bundles of mitigation measures with different levels of ambition for reducing emissions.

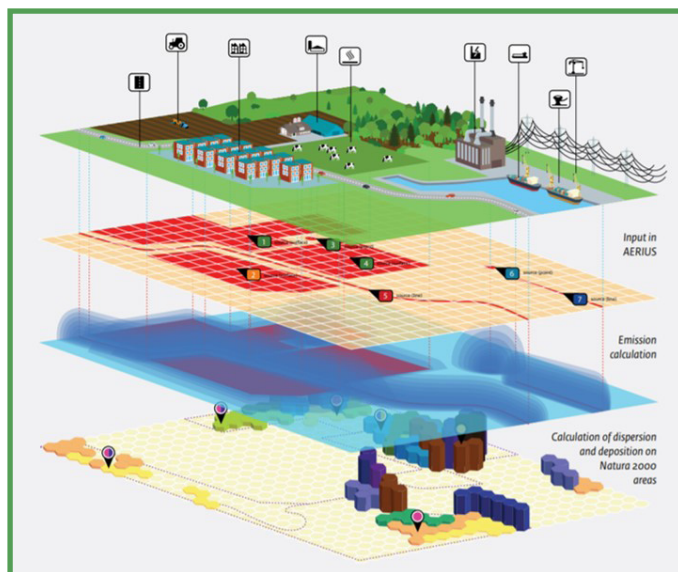
The [Nitrogen Futures project report](#) was published in October 2020. The most cost-effective approach was found to be a combined approach of UK-wide measures with additional measures targeted around protected site boundaries. JNCC also hosted several webinars over the duration of the project covering UK air pollution evidence tools and the effects of air pollution on ecosystems, as well as on nitrogen pollution and natural capital.

Integrating Tools for Air Pollution Assessment (ITAPA) Project Planning Workshops have led to a project to develop UK AERIUS

Developed by JNCC in partnership with UK regulators and the country nature conservation bodies, the aim of the ITAPA project is to develop a free, online tool based on the Dutch AERIUS product suite.

This work supports UK risk assessments of air pollution effects on ecosystems. Over 130 stakeholders attended the ITAPA Project Planning Workshops in May 2020. These meetings aimed to introduce the project, answer questions and gather feedback on the project. The workshop report describes each session and attendee responses. An ITAPA Question and Answer webpage is also available for those interested in the detail.

The ITAPA project has now received funding to develop a pilot tool to test against current UK approaches to risk assessment. The tool is based on the Dutch tool to implement the Integrated Approach to Nitrogen (PAS) and will be called UK AERIUS. UK AERIUS has several components including the tool build led by Wing in collaboration with Ricardo Energy & Environment, RIVM and a consortia of software developers. The dispersion model options appraisal contract is being led by Air Pollution Services (APS) and will work closely with the tool build team. All aspects of the project will be led by the Steering Group supported by advice from UK experts and users. We are now forming advisory groups for the tool build stage. Please visit the [UK AERIUS webpage](#) or email ITAPA@jncc.gov.uk to express interest and to keep updated on the project.



“Nitrogen – the overlooked environmental pollutant” article published in British Wildlife

The latest edition of British Wildlife carries an article on the impacts air pollution is currently having on our most valued habitats written by Sam Bosanquet, National Resources Wales. The paper looks at the sources of nitrogen pollution, its transport through the atmosphere and the impacts it has on lichens and wider ecosystems. The implications on ecosystem services are also discussed (British Wildlife, May 2021, pp. 400-408). For more details contact Sam.Bosanquet@cyfoethnaturiolcymru.gov.uk.

Mapping and Quantifying Air Pollution

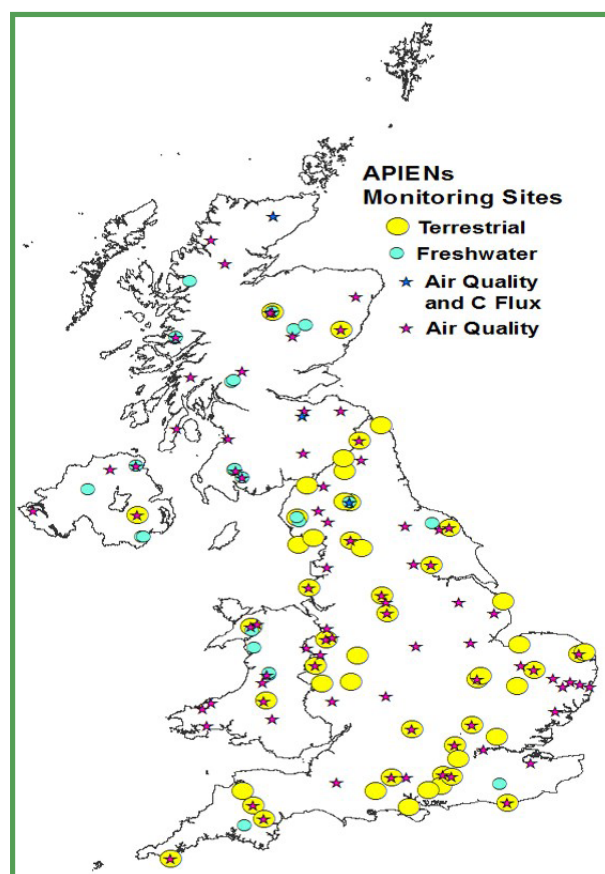
UKAPIENS: Adapting current monitoring to understand air pollution effects on ecological change

Defra has been working to collate existing monitoring networks to create an Air Pollution Impacts on Ecosystems Network to assess the targets of the 25-Year Environment Plan.

In 2017, Defra worked with the JNCC and Natural England to identify which existing monitoring sites to use to assess the impact air quality has on UK ecosystems. Originally a new requirement under the National Emissions Ceilings Directive (NECD) 2016, the duty to assess ecosystem impacts was transposed into UK law – the National Emission Ceilings Regulations (NECR) 2018, Part 5. Now that the data is published, Defra is working with UK data providers and other stakeholders to review the monitoring; to understand how it can be better integrated and whether changes could be made.

The NECR part 5 gives the Secretary of State the duty to monitor the impacts air pollution has at a representative network of sites covering freshwater, natural and semi-natural habitats and forests, and take a cost-effective and risk-based approach. Over the last few decades, the UK has developed several monitoring networks to assess the impacts of human activity on the environment, which included measurements tracking the impact of air pollution. Many had suitable data and Defra engaged UKCEH to combine and collate them for submission before the 1st July 2019 deadline; and APIENs (the Air Pollution Impacts on Ecosystems Networks) was born to underpin [NECR reporting](#).

UKCEH used data from networks which were set up to inform the Long-range Transport of Air Pollution Convention's International Co-operative Programmes (ICP), such as [ICP Forests](#) and [ICP Waters](#). It also used data from Natural England's monitoring programmes and air pollution and deposition measurements from the [UKEAP \(UK Eutrophying and Acidifying\) Network](#). Modelling used to assess the risk of impact of acidifying and eutrophying gases and ozone for ICP Modelling and Mapping and ICP Vegetation respectively were also included. This year the data has been uploaded onto JNCC's APIS website so that it is more readily available to researchers and can be viewed spatially. As part of the current discussions with data providers, we are assessing the best approach to update the monitoring data on APIS, and to what frequency – the established 4-year cycle was transposed into the UK regulations.



Map of APIENs sites © UKCEH, 2021 UK APIENs Expert Review Workshop

However, very few of the networks chosen were set up with the exact goal of assessing air pollution impacts on ecosystems. The review will help to clarify what data is needed for APIENS, and recommend how the different networks can provide maximum value, e.g. range of parameters measured, comparability of methodologies, data format, interoperability of networks, sampling frequency, separating the air quality signal from other pressures, etc. and a better understanding of the synergies with other UK monitoring and reporting requirements. These reporting requirements include the Habitat and Water Statutory Instruments in England and Wales, Northern Ireland and Scotland. The CNCBs provided an advisory role to Defra and UKCEH in this process.

One of the constraints of reporting under the directive was that the template used by the EU was inflexible and some data such as floristic measurements could not be included. The EU will probably change their template over time. However, the UK has greater flexibility on the range of relevant data it can record and publish on APIS, and we are investigating how to maximise the assessment of human impact.

The UK government's 25-year environment plan sets out several targets to meet by 2042 to assess policies reducing the impact of human activity. One target is to restore 75% of one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term. The APIENs data will be crucial to assess how this, and other targets, are being met. (David Vowles, Defra).

Mapping and Quantifying Air Pollution

National Network Ammonia Monitoring Sites in Wales

The Welsh Government, Natural Resources Wales and other key stakeholders are evaluating whether to expand its network of sites that monitor ammonia concentrations.

Presently there are five UKEAP national network ammonia monitoring sites in Wales from which ammonia concentrations are extrapolated and mapped at a 1km resolution. Natural Resources Wales (NRW) are considering establishing additional monitoring effort to assess whether the 5 current sites provide a reasonable framework for assessing ammonia concentrations across Wales. A similar exercise was undertaken in Northern Ireland, as featured in the Air Pollution Bulletin Number 8 - January 2017 edition. This will allow better understanding of the spatial variability of ammonia concentrations across Wales and help support and audit the ammonia reductions that will be taken forward via the new Sustainable Farming Scheme. The five ammonia monitoring sites at Llyn Llydaw, Narberth, Cwmystwyth, Plas Y Brenin and Cardigan are also part of UK APIENs.

Tackling Agricultural Emissions

Given that 63% of land use in the UK is devoted agriculture, it is crucial that a balance is achieved between food production and the delivery of public goods such as climate mitigation, biodiversity enhancement and improving air and water quality. Agriculture was responsible for 88% and 68% of annual UK emissions in 2016 for ammonia and nitrous oxide respectively. We must therefore recognise the co-benefits of reducing ammonia and nitrous oxide emissions whilst also understanding trade-offs with net-zero ambitions and the reduction of greenhouse gas production.

Each of the four countries are taking forward and using evidence shared within IAPG to ensure that the interaction between agricultural activity and cleaner air and healthier biodiversity can be considered in parallel.

Land Use in Wales

Wales have set out their vision of how agricultural policy post-Brexit can address ammonia emissions and nitrate leaching, as well as increased regulation to further address air and water pollution and new guidance and help for farmers.

The Welsh Government has consulted via the [Agriculture \(Wales\) White Paper](#) on a range of reform to Welsh Agriculture in lieu of the provisions of the Common Agriculture Policy (CAP), post EU exit. The concept of Sustainable Land Management will form the framework for the changes to be applied in Wales after 2024. Many of the changes will be delivered via the new Sustainable Farm Scheme which will be underpinned by a regulatory floor of National Minimum Standards across farming in Wales. Farmers will be incentivised with funding to achieve environmental improvements above the minimum standards such as further reducing ammonia emissions and nitrate leaching.

The Welsh Government has also just approved new regulations to tackle the high rate of agricultural pollution in Wales. The Control of Agricultural Pollution Regulations, 2021 came into force on 1st April 2021. This will tighten restrictions on land spreading of animal wastes and require farm nutrient management plans to be submitted under The Control of Agricultural Pollution Regulations for all farms and should help reduce the impacts of water and air pollution impacts in Wales.

Both legislative changes will help the Welsh Government address a key objective set out in the Clean Air Act. The Welsh Government has also recently consulted on a Clean Air White Paper to “strengthen the controls of emissions (principally nutrients) in the agricultural sector”.

Farming Connect, a service funded by the Welsh Rural Development Programme 2014-2020 has also launched a [new online tool](#) to help Welsh farmers put in place changes to lower ammonia emissions. The interactive tool gives advice on the actions a typical Welsh farm may be able to take to improve air quality and the real business benefits they can bring. It also shows what support is offered by Farming Connect, the Welsh Government and others. The tool is one of the ways the Welsh Government is acting on its commitment in the Clean Air Plan for Wales to give farmers up-to-date advice on how to lower ammonia emissions.

Scotland publishes Third Land Use Strategy and Cleaner Air for Scotland 2

Scotland has set out a long-term vision for sustainable land use in Scotland to help tackle the climate and nature crises.

Scotland’s Third Land Use Strategy sets out our vision, objectives and policies to achieve sustainable land use. The Land Use Strategy’s vision is a Scotland that fully recognises, understands and values the importance of land resources, and where plans and decisions about land use will deliver improved and enduring benefits, enhancing the wellbeing of our nation. One of the commitments in the Land Use Strategy is to enable Regional Land Use Partnerships (RLUPs) to emerge locally in 2021, and to develop Regional Land Use Frameworks by 2023. The RLUPs will help national and local government, communities, land owners and stakeholders work together to find ways to optimise sustainable land use in a fair and inclusive way - meeting local and national objectives and helping achieve Scotland’s climate change targets through land use change and good land management that supports a sustainable future.

The Scottish Government also published its Cleaner Air for Scotland (CAFS) 2 strategy in July 2021. CAFS2 will link to recent changes in Scotland’s policies (e.g. for climate, transport, energy efficiency & planning) and tie in with the key target to end Scotland’s contribution to climate change by 2045. It will address agricultural emissions in more detail with a refreshed approach to good agricultural practice and increased nitrogen use efficiency. Negative effects of nitrogen deposition are highlighted, and actions are proposed to tackle impacts on habitats and species. Recommendations from the Nitrogen Futures Project are specifically mentioned in the consultation document, such as local measures to reduce and mitigate nitrogen pollution. A review of current monitoring of terrestrial ecosystems (and air pollution effects) is also suggested.



Self-propelled sprayer © Natural England/Peter Roworth

Monitoring and Quantifying Mitigation of Agricultural Emissions in Northern Ireland

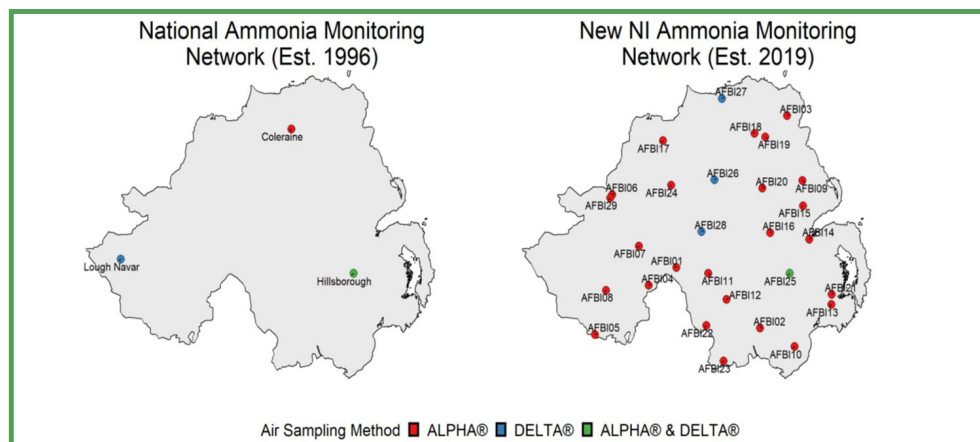
Northern Ireland presented multiple ongoing strands of research at the Joint Committee Engagement Event on Air Pollution in March 2021. These include the aims of sharpening inventories, modelling and gathering data, designing and testing new mitigations and to “make ammonia visible”.

DAERA has funded research to improve accuracy of emissions inventory, cost mitigation and inform an ammonia reduction strategy. This work has been undertaken by the Agri Food and Bio-science Institute (AFBI), UKCEH and Rothamsted Research.

A monitoring station at the AFBI Hillsborough has been operational since March 2019. This monitoring site is strategically positioned to be in proximity to major farm ammonia sources and capture ammonia emissions transported by the prevailing wind from Hillsborough Farm.

This allows the demonstration of cause and effect between local agricultural management practices that incur ammonia emissions (e.g. slurry spreading and store mixing), weather conditions and local atmospheric ammonia concentrations. For example, researchers have found that warmer temperatures increase the emission potential from slurries, and ammonia levels build up under calm conditions, whereas the emitted plumes of ammonia are dispersed and diluted in windy conditions. It is hoped to keep the site operational in the long term to determine the effect of ammonia mitigation strategies as they are adopted on the farm. The data from this monitoring project are publicly available to raise awareness about how and why on-farm activities and local weather conditions influence ammonia concentrations in the air.

The project also involves an extension to the existing National Ammonia Monitoring Network in Northern Ireland (three sites). 28 monitoring sites are now established to investigate patterns in ammonia concentrations in the air across the province and to more rigorously ground-truth modelled ammonia concentration estimates and provide independent verification of the ammonia concentration modelling approach.



The new monitoring sites were located to achieve representative coverage across locations from areas of high ammonia concentrations to those with background concentrations (i.e. low emission areas). Sites were also required to provide representative coverage of all major agricultural sectors (cattle, pigs, poultry, sheep and mixed farming). Some sites were located close to or within designated nature conservation sites such as Special Areas of

Northern Ireland Ammonia Network monitoring sites © UKCEH / AFBI

Conservation (SAC) or Areas of Special Scientific Interest (ASSI). Some sites were co-located with other existing UK environmental monitoring sites (e.g. COSMOS soil moisture network or UWMN Uplands Water Monitoring Network).

Also as part of the DAERA-commissioned scientific research programme on ammonia, AFBI, working in collaboration with Rothamsted Research and UKCEH have been quantifying the effect of a suite of potential ammonia reduction strategies of relevance to the Northern Ireland agricultural sector which were recommended by the independent Expert Working Group on Sustainable Land Management in their 2017 report. The impact of these reduction strategies on ammonia emissions from Northern Ireland agriculture, and the resultant atmospheric ammonia concentrations and total nitrogen deposition has now been accurately quantified, as well as the assumed uptake rates.

The modelled Northern Ireland-wide scenario was developed around what were considered to be realistic uptake rates for the individual reduction measures in a 5-10 year period. The application of the reduction strategies, at the noted uptake levels resulted in a 25% reduction in agricultural ammonia emissions across Northern Ireland.

Catchment Sensitive Farming in England to Incorporate Air Quality Advice

The Catchment Sensitive Farming project has incorporated air quality into its advice in order to reduce agricultural ammonia emissions and achieve the aims of the 25- Year Environment Plan.

Catchment Sensitive Farming (CSF) is a joint project between Natural England, the Environment Agency & Defra, which aims to reduce diffuse water and air pollution from agriculture in England. It is an advice-led initiative launched in 2006 enabling action by farmers to reduce agricultural pollution with the then primary objective to encourage voluntary action to help achieve the Water Framework Directive, National Emission Ceilings Directive and SSSI targets. CSF has been working in specific Priority Catchments where agriculture is having the most significant impact on rivers, lakes and estuaries. Programme evaluation has demonstrated the effectiveness of CSF's approach in reducing pollutant loads and improving water quality.

The UK government recently published its Air Quality Delivery Strategy 2018-21, outlining its proposals for introducing air quality into Phase 4 of Catchment Sensitive Farming (CSF) and for integrating it with the existing water quality work. Defra's 25 Year Environment Plan, published in 2018, makes a commitment to "meeting legally binding targets to reduce emissions of five damaging air pollutants; this should halve the effects of air pollution on health by 2030". As part of this, the Plan introduces a commitment to publish a Clean Air Strategy. This was published in January 2019 and includes a number of proposals aimed at reducing agriculture's ammonia emissions including the expansion of CSF advice to cover air quality from the end of 2018.

Air quality advice is being delivered within the existing areas covered by CSF, i.e. the High Water Priority Areas. Selecting areas to work in based on water catchments and selecting holdings to work with based on risk to water are not an immediately logical basis for targeting air quality advice. The pilot work carried out in Cumbria, Shropshire and Dorset, however, has shown that air quality advice is a logical add-on to water quality advice and so targeting work in this way provides a simple means of delivering air quality advice to 60% of the agricultural land area using existing staff resources.



Targeting Action

Nitrogen Futures Report – Spatial Targeting and putting the right measures in the right place

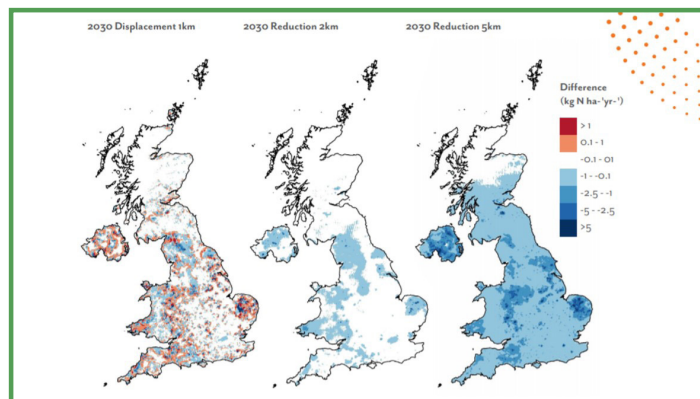
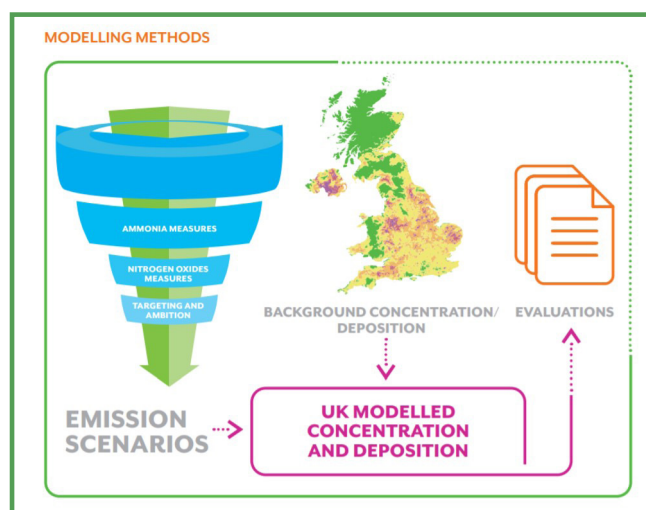
The Nitrogen Futures Report demonstrates the importance of spatially targeting emission reduction measures in addition to UK-wide regulations. Spatial targeting involves a focused approach to reducing emission levels near sensitive habitats to decrease nitrogen deposition and damage to these habitats. The scenarios developed by the project were used to predict atmospheric emissions, concentrations and deposition of nitrogen at UK nature protected sites, at a 1 km² grid resolution. The predictions were analysed for the UK as a whole and for England, Scotland, Wales and Northern Ireland separately.

Specific case studies for each country were further explored to illustrate how the national results can be applied in practice at local level. The analysis included indicative costs of the measures, wider environmental benefits and possible trade-offs resulting from each scenario. Nitrogen Futures used updated models with increased resolution, accounted for both nitrogen oxides and ammonia, at UK and international level to produce an innovative piece of evidence.

Scenarios included bundles of mitigation measures with different levels of ambition for reducing emissions. The project also looked at the short term measure of displacing emission sources which involves moving the emitting activity away from the sensitive area. Displacement strategies need careful consideration to avoid increasing air pollution in certain areas despite the quick improvement in air quality near the excluded area. In real terms, these approaches do not reduce emissions or help meet national air quality targets.

The Nitrogen Futures project aims to compare current and possible future emission reduction policies to help maximise the benefits to ecosystems and the people that live near them. It is a partnership undertaken between DEFRA, the devolved administrations, the country nature conservation bodies and JNCC.

The scenarios were used to predict atmospheric emissions, concentrations and deposition of nitrogen at UK nature protected sites, at a 1 km² grid resolution. The predictions were analysed for the UK as a whole and for England, Scotland, Wales and Northern Ireland separately. Specific case studies for each country were further explored to



illustrate how the national results can be applied in practice at local level. The analysis included indicative costs of the measures, wider environmental benefits and possible trade-offs resulting from each scenario. Nitrogen Futures used updated models with increased resolution, accounted for both nitrogen oxides and ammonia, at UK and international level to produce an innovative piece of evidence.

The project found that reducing emission levels from sources near sensitive habitats is the most effective way to decrease nitrogen deposition and damage to habitats. Nitrogen Futures shows that in many cases supplementing national measures with spatial targeting measures can produce the greatest

cost-benefit. In the example below of the project results, the maps show the difference in nitrogen deposition to woodland habitats, where these exist, when different spatial targeting measures are applied on top of national commitments for 2030. This example looks at Emission Displacement Zones (EDZ) and Emission Reduction Zones (ERZ) of different buffer widths around protected areas. The results show that implementing Emission Reduction Zones with a 5km buffer around a woodland will be the most efficient way of decreasing N deposition into this habitat. The results also show that using Emission Displacement Zones will contribute to the increase of nitrogen in other areas (areas in red). This is most visible in Northern Ireland and near the border between England and Wales and in Norfolk. For this reason, we need to be very careful when thinking about using displacement alone as a strategy.

Targeting Action

LIFE Celtic Rainforest Project

Working in conjunction with UKCEH and NRW, Snowdonia National Park Authority is creating Site Nitrogen Action Plans (SNAPs) for Celtic Rainforest woods to identify air pollution sources and implement strategic actions to combat this.



The LIFE Celtic Rainforests project is in the process of producing SNAPs in relation to the Atlantic oak woods (Figure 1), and other native woodland types, located in western parts of Wales. Their aim is to identify key sources of atmospheric pollution which pose a threat to these precious but sensitive habitats, and strategic actions that can be implemented on a local, regional and national level to combat the threat. Whilst largely located in areas considered to have good air quality, the non-vascular plant (lichen and bryophyte) communities (Figure 2) which are one of the key features of the forests are hyper-responsive to changes in air quality, which is why the project identified the need for SNAPs as a tool to help shape future management decision which have the potential to adversely impact on the target habitats. (Gethin Davies, SNPA).



Figure 1. Quercus petraea sessile oak, a key species of the Celtic Rainforests of Wales © NRW

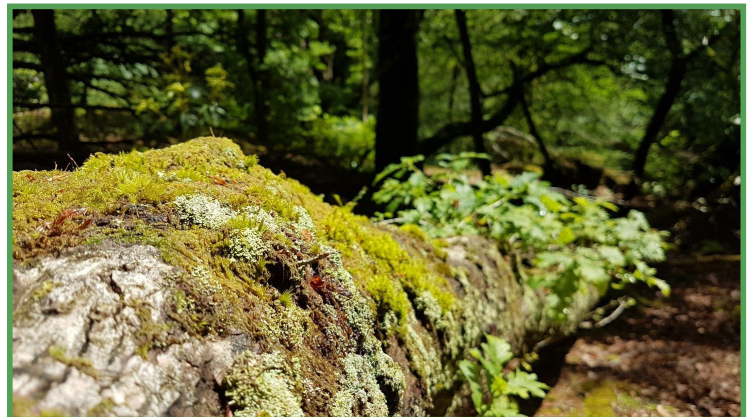


Figure 2. Lichen and bryophyte communities on sessile oak Quercus petraea are vital to the high diversity in the Celtic Rainforests of Wales © NRW

Targeting Action

Area Statements and Air Quality in Wales

A new place-based approach to the sustainable management of natural resources in Wales.

As a society, we all need to work together in ways that we've never done before, adopting a more joined-up approach in order to find solutions to a range of complex challenges that we, and our natural environment, now face.

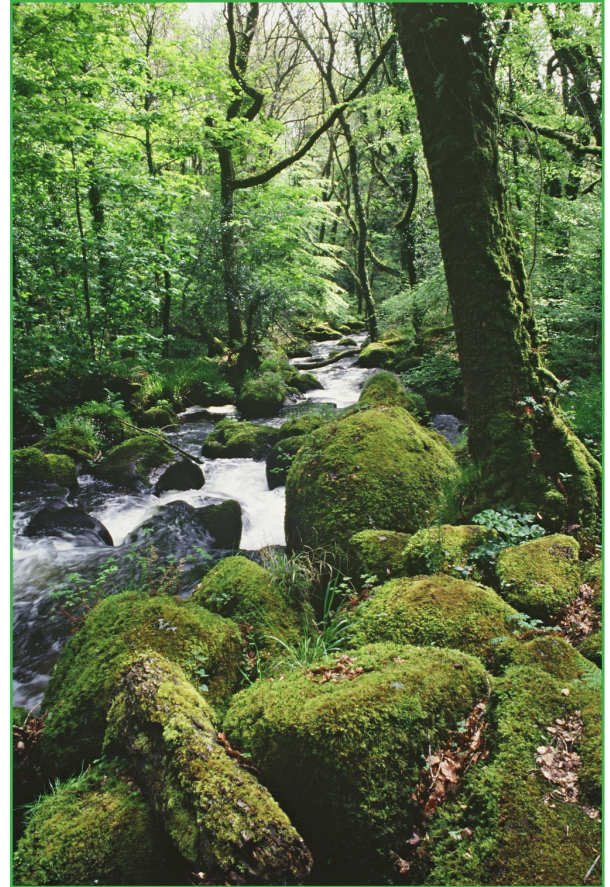
Led by NRW, a series of innovative Area Statements have been developed covering seven separate and diverse parts of Wales. Viewed together, the seven Area Statements are a collaborative response to the Natural Resources Policy, published by the Welsh Government in 2017, which sets out the key challenges and opportunities for the sustainable management of Wales' natural resources for the benefit of future generations.

Each Area Statement outlines the key challenges facing that particular locality and what NRW, partners and stakeholders can do to meet those challenges. They provide a place-based statement of intent and a local evidence base, which together with a local People and Places Team, support partnership working to meet these challenges.

Stakeholder engagement to inform area statements identified air quality as an issue in all six terrestrial areas and each of these area statements identifies geographically specific opportunities to improve air quality. Increasing the green infrastructure across Wales and giving greater access to green space is seen as key to reducing the health impacts of air quality, alongside wider nature-based solutions, improving land management practices and woodland creation.

The South-Central Wales Area Statement identifies air quality as one of 5 key themes for the area. The most densely populated part of the country, traversed by the M4 corridor, and impacted by changes in agricultural practices, industry and wildfires; air quality is high on local stakeholders' agenda. Local operational teams are working in partnership with Cardiff Council and Public Service Boards to integrate nature-based solutions to improve air quality into existing clean air, transport and climate plans and interventions.

In conjunction Area Statements, the Wales Environmental Information Portal is designed to communicate the local evidence base which has informed the Area Statements. Still in development, it aims to provide public access to maps on a wide range of topics to support partnership working. NRW are working to add summary information and a data catalogue to expand the information available. For instance, NRW has produced a map layer which shows the ammonia sensitivity of each SSSI in Wales. The map layer shows whether the SSSI contains features that are very sensitive ($1\mu\text{g}/\text{m}^3$), sensitive ($3\mu\text{g}/\text{m}^3$) or not sensitive to ammonia. The layer includes ancient woodlands where there is robust evidence of the presence of lichens and bryophytes. (Joanna Lane, NRW).



Ancient woodland © Natural England/Peter Wakely

Looking ahead - priority work areas

The IAPG are looking forward to continuing enhanced UK joint working on evidence projects in 2021-22 and to continue to deliver the research framework. UK and CNCB priorities are aligning as we work together to help restore nature, adapt and mitigate climate change and pursue nature-based solutions to facilitate green recovery.

Membership of the IAPG

The IAPG involves specialist staff from the four UK CNCBs and JNCC

JNCC – Susan Zappala, Emily Forbes and Alexandra Cunha

Natural England – Alastair Burn, Holly Jenkinson and Lydia Knight

Northern Ireland Environment Agency – Keith Finegan, Hayley McKeown, Áine O'Reilly

Natural Resources Wales – Khalid Aazem and Simon Bareham (Chair)

NatureScot – Sue Marrs and Mike Shepherd

Special thanks go to the bulletin organiser, Matt Livesey and the designer, Maddy Long



Rainbow over Moninea Bog © Hayley McKeown, NIEA