



Photo: Emma Donaldson

# The Substantive Right to a Healthy Environment: A review of definitions, standards and enforcement mechanisms

**Advisory Report**  
June 2023

# Acknowledgements

This report was compiled by Benjamin Brown, Policy & Advocacy Officer at the Environmental Rights Centre for Scotland, on behalf of the Scottish Environment LINK governance group.

Contributions were made by Fidra, Friends of the Earth Scotland, Nourish, RSPB Scotland, and Stop Climate Chaos Scotland. ERCS would also like to thank Prof Elisa Morgera from the Strathclyde Centre for Environmental Law and Governance, Simon Birkett from Clean Air in London, and ERCS trustees Lloyd Austin and Prof Campbell Gemmill for their contributions and comments during the drafting of this report.

## Who we are

**Scottish Environment LINK** is the forum for Scotland's voluntary environment community, with over 40 member bodies representing a broad spectrum of environmental interests with the common goal of contributing to a more environmentally sustainable society. We are a Scottish Charity (SC000296) and a Scottish Company Limited by guarantee (SC250899), core funded by Membership Subscriptions and by grants from NatureScot, Scottish Government and Charitable Trusts.

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**The Environmental Rights Centre for Scotland (ERCS)** was registered as a Scottish Charitable Incorporated Organisation (SC050257) on 3 July 2020.

Our vision is of a Scotland where every person's right to a healthy environment is respected, protected, and fulfilled. Our mission is to assist everyone, especially people who face the biggest barriers, to exercise their rights in environmental law and to protect the environment.

We do this through:

- > **Awareness-raising of legal rights and remedies** and supporting equitable participation in environmental decision-making
- > **Advice, assistance and representation** to increase access to justice and holding public authorities and polluters to account on the environment
- > **Advocacy in policy and law reform** to improve environmental law
- > **Strategic public interest litigation** to tackle systemic environmental problems.

ERCS understands environmental law to include law relating to land-use planning, climate change, pollution control, environmental health, the conservation of biodiversity, and any other field (e.g. cultural heritage, transport, energy) to the extent that it impacts on the natural environment and/or the right to live in a healthy environment.

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# Acronyms and abbreviations

AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
BII	Biodiversity Intactness Index
CAFS	Clean Air for Scotland
COMEAP	Committee on the Medical Effects of Air Pollution
ERCS	Environmental Rights Centre for Scotland
ESS	Environmental Standards Scotland
EU	European Union
FOES	Friends of the Earth Scotland
FSS	Food Standards Scotland
GBF	Kunming-Montreal Global Biodiversity Framework
HPMA	Highly Protected Marine Area
HRHE	Human Right to a Healthy Environment
ICESCR	International Covenant on Economic, Social and Cultural Rights
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LEZ	Low Emission Zone
MPA	Marine Protected Area
NDC	Nationally Determined Contribution
NZET	Net Zero, Energy and Transport
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PHS	Public Health Scotland
PM	Particulate Matter
HPS	Health Protection Scotland
REACH	Registration, Evaluation, Authorisation and Restriction of Hazardous Chemicals
SCCS	Stop Climate Chaos Scotland
SEPA	Scottish Environmental Protection Agency
TRAP	Convention on Long Range Transboundary Air Pollution
UK	United Kingdom
UN	United Nations
UNECE	United Nations Economic Commission on Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VOC	Volatile Organic Compound
WHO	World Health Organisation
WFD	Water Framework Directive

## Executive summary

The Scottish Government has committed to passing a Scottish Human Rights Bill by May 2026. This will include incorporating both the substantive and procedural elements of the right to a healthy environment.

Securing an enforceable right to a healthy environment recognises the interdependence between human rights obligations and international environmental law obligations. We need human rights law to reduce environmental injustice and close protection gaps in Scotland and abroad.

The substantive element of the right to a healthy environment has six interdependent environmental features which need standalone protection: clean air, safe climate, access to safe water and adequate sanitation, healthy and sustainably produced food, non-toxic environments, and healthy biodiversity and ecosystems.

To inform the development of the Bill, this report reviews the most appropriate definitions, standards and enforcement mechanisms for each feature. Only by drawing on the guidance of UN Special Rapporteurs, international guidelines and best practice can Scotland achieve the highest standards for each feature; and only by committing to improved monitoring and enforcement mechanisms can we hope to address the triple planetary crisis of climate breakdown, biodiversity loss and increasing pollution of our air, land and water.

To this end, we provide a set of recommendations for each feature and end with a set of guiding principles on how to embed a rights-based approach and implement human rights obligations to the enjoyment of a clean, healthy and sustainable environment.

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# 1 Introduction

## 1.1 The right to a clean, healthy and sustainable environment

On 28 July 2022, the UN General Assembly declared access to a clean, healthy and sustainable environment as a universal human right, and that environmental damage has negative implications for the effective enjoyment of all human rights, for present and future generations.<sup>1</sup> This builds on decades of interpretation by binding human rights tribunals and authoritative human rights bodies.

The Scottish Government has committed to passing a Scottish Human Rights Bill by May 2026. This will bring four UN human rights treaties and the right to a healthy environment into Scots law for the first time. Scottish Environment LINK welcome the government's commitment to incorporate recommendation 2 of the National Taskforce for Human Rights Leadership Report:

***'To include the right to a healthy environment with substantive and procedural elements into the statutory Framework.'***<sup>2</sup>

If incorporated well, it will place Scotland as a global leader in environmental rights.

Securing an enforceable right to a healthy environment recognises the interdependence between human rights obligations and international environmental law obligations. We need human rights law to reduce environmental injustice and close protection gaps in Scotland and abroad.

The substantive and procedural elements of the right are equally important. The procedural element is already enshrined in the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the Aarhus Convention).<sup>3</sup> The UK is a party to the Convention but is non-compliant with its access to justice requirements. Reforms are urgently required to ensure access to justice and effective remedies are fair, equitable, timely and not prohibitively expensive, so that everyone can exercise their environmental rights and ensure environmental laws are enforced.<sup>4</sup>



## 1.2 The substantive element of the right to a healthy environment

The UN Special Rapporteur on Human Rights and the Environment, Prof David Boyd, outlines the substantive element of the right as comprising six interdependent environmental features:



Clean air



Safe climate



Access to safe water & adequate sanitation



Healthy and sustainably produced food



Nontoxic environments in which to live,  
work, study, and play.



Healthy biodiversity and ecosystems.<sup>5</sup>

On behalf of Scottish Environment LINK governance group, ERCS facilitated a group of experts to further define the substantive element as it relates to Scotland. The purpose of this report is to review and identify the appropriate definitions, standards and enforcement mechanisms for each of these features and make recommendations to inform the development of the Human Rights Bill.



## 2 Clean air

### 2.1 Definitions

This report supports the definition of clean air adopted in the Clean Air (Human Rights) Bill, interpreting clean air as: **air that does not contain banned pollutants or pollutants, concentrations or emissions above agreed limits or levels of exposure.**<sup>6</sup>

Nine air pollutants in the UK are currently subject to legal limits:

- Sulphur dioxide
- Nitrogen oxides
- Particular matter (PM10, PM2.5 and PM1)
- Ozone and volatile organic compounds
- Toxic Organic Micro-Pollutants
- Benzene
- 1,3-Butadiene
- Carbon monoxide
- Lead and heavy metals.

However, the Clean Air (Human Rights) Bill provides an extended typology with a complete list of pollutants relating to local and atmospheric pollution. While this Bill was introduced in the House of Lords and does not apply to Scotland, its provisions remain relevant and can be easily transposed to the Scottish context. It provides the strongest and most comprehensive definition proposed under UK law, and a full table defining safe limits for particulate matter (PM) concentrations is appended to the Bill.<sup>7</sup>

### 2.2 Standards

Air pollution is a major cause of premature deaths and diseases and the largest environmental health risk in Europe.<sup>8</sup> For the right to clean air to be fulfilled, robust regulations and standards must be in place that meet the most recent WHO guidelines, prevent pollutants from exceeding dangerous levels, and ultimately aim to eliminate harmful emissions at source.<sup>9</sup> The Clean Air (Human Rights) Bill proposes that, when setting standards, the government should:

- (a) take into account the best available scientific knowledge and guidance on ambient air pollutants from the World Health Organization (WHO);*
- (b) take advice from Public Health England and epidemiologists about the effects of pollution on public health;*
- (c) take into account the best available scientific knowledge and guidance on indoor air pollutants from the WHO and the International Organization for Standardization (ISO);*
- (d) take into account the best available scientific knowledge and guidance on atmospheric pollutants from the United Nations Economic Commission for Europe (UNECE);*
- (e) consult and seek advice from scientists on the effects of air pollution on the environment;*
- (f) apply the precautionary principle; and*
- (g) include a public consultation in accordance with the Aarhus Convention.’<sup>10</sup>*

Additional relevant consultative bodies for Scotland include the UK's Committee on the Medical Effects of Air Pollution (COMEAP) and Public Health Scotland (PHS).

## Outdoor air pollution

The Air Quality (Scotland) Amendment Regulations 2016 incorporated the WHO guideline value for PM<sub>2.5</sub> of 10µg m<sup>3</sup>, as an annual mean, into domestic legislation. The regulations require local authorities to take action to reduce PM levels in areas where this is exceeded. However, in 2021, the European Court of Justice judged that, across the UK, breaches of air quality limit values for nitrogen dioxide had been 'systematic and persistent' between 2010 and 2017.<sup>11</sup> Environmental Standards Scotland (ESS) has since conducted an investigation into air pollution in Scotland to address these outstanding issues. Their report concluded that while there has been some incremental improvement, ongoing non-compliance with NO<sub>2</sub> limits is not tenable and requires a strengthening of Air Quality Action Plans (AQAPs) prepared by government and local authorities.<sup>12</sup>

The Scottish Government's Air Quality Improvement Plan<sup>13</sup> was prepared in response to ESS's improvement report. While the Net Zero, Energy and Transport (NZET) Committee have found that the Plan is largely adequate, more work is needed to develop aspects of monitoring, governance and enforcement of air quality laws. In correspondence with the Committee, ESS have reiterated the need to fully address all their recommendations, including the need for local authorities to introduce specific and measurable timescales for achieving compliance with clean air standards, and speeding up the process for reviewing and updating AQAPs.<sup>14</sup>

AQAPs could be updated to accelerate a modal shift to public transport and active travel in line with the Scottish Government's commitment to achieving a 20% car km reduction. This could be achieved by expanding free or low-cost public transport, promoting simplified/integrated ticketing, improving active travel infrastructure, re-designating parking spaces to increase cycle storage and limit private vehicle use, and extending Low Emission Zones (LEZs) across Scotland. So that low-income people are not penalised, charges placed on the most polluting vehicles in LEZs could be used to provide financial support for low-income households to switch away from petrol and diesel vehicles.

While clean air policies tend to concentrate on pollutants emitted from vehicles and industry in built-up urban areas, the spreading of manure, slurries and fertiliser on agricultural land causes distinct pollution concerns – especially around the release of ammonia which is a growing contributor to air pollution in both rural and urban areas. A recent study found that farming is now responsible for more than one quarter of particle emissions in UK cities.<sup>15</sup> However, as the Clean Air for Scotland 2 (CAFS2) strategy itself observes, with the exception of large pig and poultry units, there are currently no regulatory mechanisms in place in the UK to tackle at source the release of most agricultural ammonia emissions.

Dedicated policies must urgently bring these pollutants within the scope of regulatory enforcement and restrict activities that cause their release. Greater attention is also needed to understand and address the impact of other pollutants such as microplastics, fibres, and brominated flame retardants, which fall outside the scope of WHO standards. Given the interdependency of the six substantive features, these policy developments would also improve the standards of healthy and sustainably produced food, healthy biodiversity and ecosystems, and non-toxic environments.

## Indoor air pollution

New standards must also be introduced to address indoor air pollution, which is an area of growing concern.<sup>16</sup> PM 2.5 emissions from wood and coal burning fires and stoves, nitrogen oxides from gas boilers and other pollutants including carbon monoxide, formaldehyde and Volatile Organic Compounds (VOCs) require greater monitoring and specific measures to improve ventilation that fall outside the scope of existing clean air legislation.

## International responsibilities

The UK is a party to the UN Convention on Long Range Transboundary Air Pollution 1979 (TRAP). Under international law, States can be held responsible for human rights violations if infringement activity occurs in a territory under their effective control. According to the OHCHR's Guiding Principles on Business and Human Rights:

*'States' international human rights law obligations require that they respect, protect and fulfil the human rights of individuals within their territory and/or jurisdiction. This includes the duty to protect against human rights abuse by third parties, including business enterprises... States may breach their international human rights law obligations where such abuse can be attributed to them, or where they fail to take appropriate steps to prevent, investigate, punish and redress private actors' abuse.'*<sup>17</sup>

Clarity is needed on whether limits of air pollution would only apply to residents in Scotland, or also account for the cross-border impacts of Scotland's consumption emissions.

## 2.3 Enforcement Mechanisms

The UN Special Rapporteur's thematic report on clean air identifies seven steps necessary for member states to protect the clean air component of the right to a healthy environment: monitoring air quality and impacts on human health; assessing sources of air pollution; making information publicly available, including public health advisories; establishing air quality legislation, regulations, standards and policies; developing air quality action plans at the local, national and, if necessary, regional levels; implementing air quality action plans and enforcing the standards; and evaluating progress and, if necessary, strengthening plans to ensure that the standards are met.<sup>18</sup>

Similarly, the WHO Global Air Quality Guidelines 2021 highlight the need for 'the existence and operation of air pollution monitoring systems; public access to air quality data; legally binding, globally harmonized air quality standards; and air quality management systems.'<sup>19</sup>

While Scotland has made progress on reducing ambient atmospheric pollution concentration levels and regulated pollution emissions, it has fallen short in tackling emissions from agriculture, domestic combustion, and transport. Individuals can only exercise their right to breathe clean air if the Scottish Government acts on multiple fronts to address these deficits.

Measures to tackle air pollution in Scotland are codified in existing legislation and associated policies, including the Environment Act 1995, the Clean Air (Scotland) Act 2000, the Air Quality (Scotland) Amendment Regulations 2016, the Planning (Scotland) Act 2019 (which requires that the National Planning Framework must have regard to Scotland's national strategy for the improvement of air quality) and CAFS2.

The proposals in CAFS2 for enhanced monitoring of air pollution through traffic data, remote sensing, and low-cost sensors at a local level are welcome. However, CAFS2 has failed to fully respond to the recommendations from the review of the first CAFS.<sup>20</sup> Of particular concern is the lack of clarity on monitoring on the implementation of engine limits to restrict traffic pollution in LEZs, the particulate load from electric vehicles, the release of ammonia from agriculture, and muirburn (the practice of burning vegetation as a habitat management technique).

There is an overall need for improved monitoring and reporting, especially in rural areas, and for the establishment of a dedicated, nation-wide monitoring body. SEPA is required to undertake pollution prevention and control through an integrated approach: considering emissions to air, water and land in the monitoring and regulation of pollutants from industrial sites.<sup>21</sup> However, a lack of reliable data on air quality will weaken efforts to meet WHO guidelines. This is especially the case since Scotland no longer has access to EU wide comparative data, limiting the evidence base for policy decisions. Increased transparency, and public access to ambient air quality data, can stimulate greater accountability and responsiveness over time.

The Human Rights Bill could build on CAFS2 by advancing a human rights-based approach that clarifies relationships between rights holders and duty bearers (public bodies, and private bodies with public responsibilities). The Clean Air (Human Rights) Bill is currently undergoing passage through the House of Lords<sup>22</sup> and would establish the right to breathe clean air in England and Wales. It provides a robust legislative template for Scotland to follow in pursuit of environmental and public health objectives.

## 2.4 Recommendations



The Scottish Government should build on the UN Special Rapporteur's thematic report on clean air,<sup>23</sup> the WHO air quality guidelines,<sup>24</sup> the Health and Environment Working Group's review of CAFS<sup>25</sup> and ESS's investigation into air pollution in Scotland,<sup>26</sup> taking steps to:

- **Keep pace with the revised 2021 WHO guidelines on PM2.5 and PM10, ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide, and respond to emerging evidence on air pollution risks.** Scottish standards were in line with WHO guidelines at the time they were made but are now outdated. Similarly, evidence is growing on the health risks posed by indoor air pollution, and pollutants that fall outside the scope of WHO standards including microplastics, fibres and brominated flame retardants. Consultation with bodies such as Public Health Scotland, and COMEAP can ensure appropriate policies are developed to uphold the right to clean air.
- **Expand and increase air quality monitoring and reporting and introduce an appropriate monitoring body.** Special efforts should be made to expand coverage to rural areas. New measures should ensure that coverage for other pollutants such as ozone, nitrogen dioxide and sulphur dioxide match PM monitoring, since they have received less attention and lower levels of monitoring to date. There is also a need to scope how the government should account for extra-territorial emissions.
- **Increase public access to air quality data,** through sharing datasets with global and open access databases such as the WHO Global Ambient Air Quality Database and OpenAQ.<sup>27</sup>
- **Update and strengthen Air Quality Action Plans prepared by local authorities.** Plans should include specific and measurable timeframes for local air quality objectives. Their contents should be reviewed and scrutinised by environmental and public health experts, with local authorities held to account if plans are out of date or not acted upon.<sup>28</sup>
- **Expand and implement policies to remove the most polluting vehicles and ensure a modal shift to public transport and active travel, in line with the Scottish Government's commitment to a 20% car km reduction.** Policies such as free or low-cost public transport, improved active travel infrastructure, and support for low-income households to substitute petrol and diesel cars with cleaner alternatives can assist this process.



## 3 Safe climate

### 3.1 Definitions

This report derives its understanding of a safe climate from the Intergovernmental Panel on Climate Change's (IPCC) definition of climate risk:

**'The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems. In the context of climate change, risks can arise from potential impacts of climate change as well as human responses to climate change.'**<sup>29</sup>

The latest IPCC report has confirmed that deep, rapid and sustained reductions in greenhouse gas emissions are necessary to ensure climate risks are minimised, since every increment of global warming will intensify multiple and concurrent hazards, adverse impacts, and climate related losses and damages. It also notes that adaptation gaps remain and will continue to grow at current rates of implementation.<sup>30</sup>

The right to a safe climate should be understood as a constituent part of climate justice, defined by Mary Robinson, the former UN High Commissioner for Human Rights, as:

**'Justice that links development and human rights to achieve a human-centred approach to addressing climate change, safeguarding the rights of the most vulnerable people and sharing the burdens and benefits of climate change and its impacts equitably and fairly. Climate justice is informed by science, responds to science and acknowledges the need for equitable stewardship of the world's resources.'**<sup>31</sup>

In the Special Rapporteur's report on a safe climate, he observes that the historic inclusion of human rights in the Paris Agreement cemented the principle that human rights should be at the heart of all climate action, including legislation, mitigation, adaptation, finance, and loss and damage.<sup>31</sup> It is therefore imperative that climate policy reflects these principles in both its design and implementation.

## 3.2 Standards

### Emission reduction and decarbonisation

Article 2 of the Paris Agreement 2015 committed world governments to limiting temperature increases to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increases to 1.5°C above pre-industrial levels.<sup>33</sup> The IPCC's *Special Report on Global Warming at 1.5 Degrees* stressed that pathways limiting global warming to 1.5°C with no or limited overshoot require 'rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems'.<sup>34</sup> Standards should therefore be designed to drive systems change and reorganisation of the economy at a structural level, with the aim of ending reliance on fossil fuels and equitably reducing energy demand.

Fiscal and regulatory measures are required to embed the polluter pays principle whilst taking precautions to ensure costs are not passed on to workers or low-income consumers.<sup>35</sup> The development of Just Transition Plans in consultation with workers in high carbon industries and communities impacted by pollution could help to minimise disruption and ensure broad public buy-in. Key just transition principles identified by climate NGOs and trade unions include public ownership of energy, clear accessible pathways out of high carbon jobs, and investment in domestic manufacturing and assembly of renewable energy infrastructure.<sup>36</sup>

There is also a need to measure embedded consumption emissions and ensure these are included in emissions targets. The Climate Change (Scotland) Act 2009 s.38(18) requires the Climate Change Plan to 'set out the Scottish Ministers' proposals and policies for taking, or supporting, action to reduce emissions of greenhouse gases (whether in Scotland or elsewhere) which are produced by or otherwise associated with the consumption and use of goods and services in Scotland.' There is scope to build on this commitment by linking targets with coordinated policies that consider impacts across global supply chains. Scotland should follow the precedent set by Sweden, which in 2022 became the first country in the world to introduce consumption-based emissions targets, accounting for the carbon and material footprint of goods and services consumed by its citizens.<sup>37</sup>

Current standards for carbon credit and offsetting schemes have been shown to under-deliver on promised greenhouse gas reductions with verification processes failing to address leakage (where deforestation is not avoided, only displaced); additionality (overlooking alternative development trajectories); permanence (that carbon stored in trees is only there temporarily); and measurement (the practical difficulties of accurately measuring carbon stored in forests).<sup>38</sup> The priority must therefore be to stimulate real and lasting emissions cuts in industry, along with changes to carbon-intensive consumption habits of higher income households.

### International responsibilities

The principle of common but differentiated responsibilities is a fundamental tenet of global climate action.<sup>39</sup> As a nation that has benefited from colonial wealth transfers and is responsible for a greater proportion of historical fossil fuel consumption, Scotland has a responsibility to accelerate the pace of decarbonisation and scale up financial and technical support to more vulnerable countries.<sup>40</sup>

As a devolved nation, some relevant policy levers on taxation and energy reside with the UK government. However, the Scottish government is able to use its existing powers to strengthen domestic policies and use fiscal levers to make polluters pay and advance climate justice.<sup>41</sup> The Scottish Government should also maximise pressure on Westminster to ban new offshore oil and gas licencing, setting a clear end date for the exploration and production of new oil and gas.

Recognising the right to a safe climate must correspond with increased support to aid the resettlement of climate migrants and defend their freedom of movement. A Global Compact on Refugees, affirmed by an overwhelming majority in the UN General Assembly in December 2018, recognised that 'climate, environmental degradation and disasters increasingly interact with the drivers of refugee movements'. Yet, the response from governments to date has been inadequate, with little effort to prepare for these seismic changes. The Scottish Government should further develop the human rights-based approach articulated in the Sendai Framework for Disaster Risk Reduction, and the Guiding Principles on Internal Displacement.<sup>42</sup>

## Adaptation

The Second Scottish Climate Change Adaptation Programme 2019–24 outlines the Scottish Government's approach to adaptation and resilience to climate impacts.<sup>43</sup> However, in its evaluation of the progress on climate adaptation in the natural environment, built environment and health, infrastructure, and international and supply chain impacts, the UK Climate Change Committee concluded that the plan lacked quantifiable indicators for climate resilience, clear ownership for outcome delivery, and any coherent monitoring framework.<sup>44</sup> Special consideration should be given to climate-proofing water conservation and management in Scotland, with effective risk planning for future droughts and floods. Learning from Climate Ready Clyde highlights the importance of early intervention and identifying place-based priorities in order to address inequalities and build community resilience.<sup>45</sup>



### 3.3 Enforcement Mechanisms

Article 13 of the Paris Agreement stipulates that the UK government is required to monitor and report greenhouse gas emissions under UNFCCC Enhanced Transparency Framework and Global Stocktake Report.<sup>46</sup> The UK's Nationally Determined Contribution, submitted under the Paris Agreement and amended at COP27 in Sharm-El Sheikh, outlines policy measures and targets to reach net zero.<sup>47</sup> In Scotland, statutory climate targets are enshrined in the Climate Change (Scotland) Act 2009, and the Climate Change (Emissions Reduction Target) (Scotland) Act 2019, which commit the Scottish Government to net zero emissions by 2045, and interim targets of 75% and 90% reductions in emissions by 2030 and 2040 respectively, against a 1990–95 baseline.

Scotland's statutory framework also requires the publication of a Climate Change Plan every five years, which must be prepared with reference to a set of statutory Just Transition and Climate Justice principles. Targets must apply to multiple sectors including energy (including transport), industrial processes and product use; land, land-use change and forestry; and waste. However, as they stand, the current mitigation policies of the Scottish and UK governments remain insufficient to avert dangerous levels of warming.<sup>48</sup> The Climate Change Committee, an independent statutory body, is tasked with the periodical review of the UK and Scotland's policies against climate targets and proposes recommendations to strengthen them. It has criticised the failure to meet existing targets, stating that:

***'Underlying progress in reducing emissions in Scotland has largely stalled in recent years. Since the Scottish Climate Change Act became law in 2009, the Scottish Government has failed to achieve 7 of the 11 legal targets.'***<sup>49</sup>

SEPA is responsible for the enforcement of legislation aimed at preventing or limiting emissions of greenhouse gases, including the Energy Saving Opportunity Scheme Regulations 2014, the Greenhouse Gas Emissions Trading Scheme Order 2020/Greenhouse Gas Emission Trading Scheme Regulations 2012, the Fluorinated Greenhouse Gas Regulations 2015, and the Air Navigation (Carbon Offsetting and Reduction Scheme for International Aviation) Order 2021. However, the climate governance regime cuts across policy areas (including transport and agriculture) and requires a complete overhaul as current enforcement mechanisms and penalties are insufficient to act as effective deterrents to polluters.<sup>50</sup>

Through its commitment to establishing a Wellbeing Economy, the Scottish Government should develop new indicators to assess economic, social and environmental wellbeing. These could support the government to drive down material and energetic throughput in the economy and restrict the growth of environmentally harmful sectors.<sup>51</sup> Scotland's proposal for a Future Generations Commissioner, similar to the Welsh Senedd, could also play a role in assessing new policies according to how they impact on the right to a safe climate.

## 3.4 Recommendations



The Scottish Government should draw on the UN Special Rapporteur's thematic report on safe climate,<sup>52</sup> the recommendations of the UK Climate Change Committee<sup>53</sup> and policy prescriptions of Stop Climate Chaos Scotland and Friends of the Earth Scotland/Platform,<sup>54</sup> taking steps to:

- **Ensure emissions reduction targets are mainstreamed across all departments of governments and policymaking arenas.** Legal mandates can ensure climate tests are incorporated into public spending decisions at a national and local level, and devolved fiscal powers are used to accelerate decarbonisation.
- **Set a clear end date for domestic fossil fuel production and develop Just Transition Plans for Scotland's oil and gas industry.** Scotland's energy transition should be designed in a just and equitable way in consultation with workers and communities.
- **Develop a coordinated long-term plan for reducing consumption-based emissions.** Build on Scotland's commitment to reduce consumption emissions, as set out in s.38(18) of the Climate Change (Scotland) Act, by introducing defined targets and actions to reduce consumption-based emissions and fully account for the environmental impact of goods and services consumed in Scotland.
- **Regulators must ensure that industry avoids double counting in monitoring the reduction of greenhouse gas emissions.** There must be transparent reporting methods open to public scrutiny, with real emission cuts prioritised over carbon credits and offsets.
- **Revise the climate change adaptation strategy in line with recommendations of the UK Climate Change Committee.** Future adaptation strategies must increase the use of participatory planning, develop quantifiable indicators for climate resilience, establish clear ownership for outcome delivery, and adopt a coherent monitoring framework.
- **Demonstrate international and diplomatic leadership** through maximising pressure on the UK government to accelerate a North Sea oil and gas phaseout, pledging increased grant-based Loss & Damage finance, engaging with international initiatives such as the Beyond Oil & Gas Alliance and Fossil Fuel Non-Proliferation Treaty, and enshrining the rights of climate migrants and refugees in Scotland's legal framework.



## 4 Access to safe water and adequate sanitation

### 4.1 Definitions

This report supports the definition adopted by the UN, interpreting the right to safe water and adequate sanitation as:

**'The right of everyone to sufficient, safe, acceptable and physically accessible and affordable water for personal and domestic uses... [and] the right of everyone to have physical and affordable access to sanitation, in all spheres of life, that is safe, hygienic, secure, and socially and culturally acceptable and that provides privacy and ensures dignity.'**<sup>55</sup>

This right includes both access to safely managed drinking water services – defined as services that are located on premises, available when needed and free from contamination; and adequate sanitation – having access to facilities permitting the safe disposal of human waste and maintaining hygienic conditions.<sup>56, 57</sup>

Our interpretation of this right also includes bathing water and assesses the right to safe water and adequate sanitation as it relates to the quality of Scotland's lochs, rivers, and seas. There is therefore significant overlap with the substantive features of non-toxic environments and healthy, biodiversity and ecosystems. This section focuses on Scotland's freshwater, with marine environments addressed more fully in section seven on healthy biodiversity and ecosystems.

### 4.2 Standards

#### Drinking water

WHO guidelines for drinking-water quality provide an international reference point for the establishment of standards for water safety according to aesthetic, chemical, microbiological and radiological parameters.<sup>58</sup> The Public Water Supplies (Scotland) Regulations 2014 ensures the production of an adequate and high-quality supply of water, regulating acceptable levels of certain characteristics, elements and substances allowed in drinking water. Usually this is a maximum level but occasionally a minimum is also set (e.g. pH – which should be in the range of 6.5–9.5).

#### Sanitation

The discharge of untreated sewage into Scotland's waterways via combined sewage overflows is a danger to human and ecosystem health, exposing swimmers and recreational water users to disease and damaging the conditions required for wildlife to thrive. Upgrades to sewage treatment and wastewater infrastructure and strengthened limits and penalties under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 are necessary to limit sewage pollution.

Scotland should adhere to the WHO's Recreational Water Quality Guidelines 2021, which sets out water quality standards in relation to faecal organisms, algal blooms, and other microbial hazards.<sup>59</sup> 'Bathing waters' designation helps to protect bathers from health risks such as sewage pollution, because designated areas are subject to monitoring for cyanobacterial blooms, microalgae, marine phytoplankton, and other waste. However, the requirements for designation in Scotland make it very difficult to obtain.<sup>60</sup>

## International responsibilities

The embedded water used to produce goods consumed in Scotland has a disproportionate impact on water security elsewhere in the world. Over 40% of Europe's water footprint lies outside its borders, and over 60% of the UK's water footprint is from unsustainable sources.<sup>61</sup>

The Glasgow Declaration for Fair Water Footprints provides a basic template to address the embedded water of goods and services across global supply chains and ensure companies do not contribute to greater water insecurity. The declaration includes commitments to ensure zero pollution; sustainable water withdrawals; full access to water supply, sanitation, and hygiene; protection and working with nature; and effective planning for drought and floods. The aims are to address this through proposing stewardship schemes and minimum standards that are adhered to by governments and multinational companies.<sup>62</sup> Although an important initiative, international and legally binding commitments and monitoring frameworks are needed to incentivise higher environmental standards across global supply chains.

### 4.3 Enforcement Mechanisms

Water quality in Scotland is regulated via the Water Environment and Water Services (Scotland) Act 2003, the Water Environment (Controlled Activities) (Scotland) Regulations 2011 and the Public Water Supplies (Scotland) Regulations 2014. The Bathing Water (Scotland) Regulations 2008 set out the legal regime for the designation of bathing waters at rivers, lochs, and coastal areas. The Water Framework Directive (WFD) sets out statutory objectives for river basin management, based on ecological assessments and economic judgements. The WFD addresses diffuse pollution from agriculture and wastewater discharges; barriers to fish migration; modification of waterbodies; invasive non-native species, and pressure on water flows and levels (e.g. rates of abstraction).

SEPA's River Basin Management Plan 2021–2027 typifies Scotland's prevailing regulatory approach. SEPA monitors the environment to assess the condition of water quality, water resources, physical condition and fish migration, and its priority catchment initiative supports land managers to maintain compliance with regulatory standards and 'go further where possible'.<sup>63</sup> The plan pledges to build partnerships with businesses, land managers, organisations and voluntary groups. However, a growing body of evidence indicates that this approach is not working. For example: sewage spills have increased by 40% in the past five years, and 80% of Scottish coasts tested have high concentrations of microplastics.<sup>64</sup> SEPA has also expressed reluctance to 'name and shame' polluters, further weakening their powers to stimulate environmental improvements.<sup>65</sup> This highlights the need to improve accountability and transparency in the design and implementation of management plans.

An additional concern is that the current water testing regime is inadequate. An investigation by Surfers Against Sewage found that 59% of sickness reports in England were from bathing waters classified as 'excellent'. Their report raises concerns that limited spot sampling during the bathing season alone and historic data provides little assurance about the quality of the water, and no indication of water quality in real-time.<sup>66</sup> Although the report refers to England, a similar governance regime operates in Scotland. Under the Water Environment (Controlled Activities) (Scotland) Regulations 2011, discharges must be authorised by SEPA under General Binding Rules, registration, or licencing. Despite this, raw sewage was released into Scottish waters at least 12,000 times in 2020, and only 3% of release points are monitored.<sup>67</sup> The Water Quality (Sewage Discharge) Bill introduced in Westminster could provide a template for new legislation adapted to the Scottish context.<sup>68</sup> In addition to more widespread monitoring, further research is needed on the impact of viruses, pharmacological products, endocrine disruptors, and microplastics within waterbodies.

## 4.4 Recommendations



The Scottish Government should draw on the UN Special Rapporteur's thematic report on the global water crisis,<sup>69</sup> taking steps to:

- **Increase the frequency and extent of water quality monitoring.** SEPA must be resourced to maintain an accurate database of water quality across Scotland and should increase transparency through an open data portal.
- **Make it easier to gain bathing waters designation.** The excessive requirements for awarding this designation should be removed so that more areas are monitored appropriately to encourage and support safe recreational access to Scotland's rivers, lochs, and seas.
- **Ensure SEPA makes full use of its powers to monitor, regulate, and sanction companies** through enforcement notices, fines, and criminal liability. Currently such powers are not fully utilised to prevent the discharge of sewage, microplastics, nitrates, and other polluting substances into waterways and seas. Mechanisms must be introduced to check and oversee appropriate use of enforcement actions, with the option to grant increased powers if necessary.
- **Increase investment to upgrade infrastructure and improve wastewater treatment capacity** to change how sewage and wastewater are managed, and to prevent the use of combined sewage overflows discharging sewage into rivers lochs and seas.
- **Address Scotland's global water footprint** through the monitoring and verification of sustainable water use across global supply chains and strengthened environmental regulatory standards in trade and procurement policy.



## 5 Healthy and sustainably produced food

### 5.1 Definitions

The right to food is enshrined in Article 11 of the International Convention on Economic, Social, and Cultural Rights (ICESCR), which guarantees the right to available, accessible, adequate and culturally acceptable food.<sup>70,71</sup> However, while subsequent elaborations, including by the UN Special Rapporteurs on the Right to Food give further consideration to both health and sustainability,<sup>72</sup> there has been a tendency – given the severe, persistent and widespread household food insecurity still affecting so many people across the world – to foreground the dimensions of accessibility and availability.

In addition, over the last 45 years the damage caused by the global food system to nature, climate and health has become more acute, widespread and visible. It is therefore essential to restate that the right to healthy and sustainably produced food is integral to delivering the right to a healthy environment.<sup>74</sup>

This report supports Nourish Scotland's understanding of the right to healthy and sustainably produced food as food produced in a system where:

- **Everyone has reliable access to a sufficient quantity of affordable, nutritious food**
- **Food is grown, produced and distributed with care for the soil, climate and all the living world**
- **Food growers, producers, distributors and consumers share control over the food system**
- **Scotland grows more of what we eat and eat more of what we grow.<sup>75</sup>**

The working definition of 'good food' adopted by Sustain is complementary, highlighting how food must be produced, processed, distributed and disposed of in ways that:

- ***'Contribute to thriving local economies and sustainable livelihoods – both in the UK and, in the case of imported products, in producer countries***
- ***Protect the diversity of both plants and animals and the welfare of farmed and wild species***
- ***Avoid damaging or wasting natural resources or contributing to climate change***
- ***Provide social benefits, such as good quality food, safe and healthy products, and educational opportunities.<sup>76</sup>***

## 5.2 Standards

The UN Special Rapporteur's report on the right to healthy and sustainably produced food highlights the need to transform food systems so that they reduce greenhouse gas emissions and enhance carbon sinks, improve air and water quality, reduce water use, restore soil health, protect and revitalise biodiversity, decrease the use of pesticides, fertilisers and antibiotics and reduce the risk of zoonotic diseases.<sup>77</sup>

The Scottish Government's vision for Scottish agriculture sets an ambition of Scotland becoming 'a global leader in sustainable and regenerative agriculture'.<sup>78</sup> However, more work is needed to scope a robust definition of agroecology or regenerative farming and explain how this would apply to Scotland in relation to animal welfare, insect populations, microbiology, soil health, the discharge of effluents, and pollution from livestock. The *Farm for Scotland's Future* report 2023 identifies improved soil management, reduced use of slurry and agrochemicals, increased tree cover, the restoration and expansion of hedgerows, expanded field margins, and increased freshwater features such as ponds and ditches as vital steps to improve sustainability and prevent wildlife collapse in Scotland's arable and livestock systems.<sup>79</sup>

Agricultural standards should aim to exceed the targets included in the EU's Farm to Fork strategy by reducing chemical inputs – with a target of a 20% reduction in nitrogen fertiliser, 50% in pesticides, and 50% in antimicrobials; and increasing the areas of farmland under organic standards to 25% by 2030. There is scope to replicate best practice standards, such as the EU Directive on the Sustainable Use of Pesticides which aims to prioritise Integrated Pest Management and ensure synthetic pesticides are only used as a last resort.<sup>80</sup>

Scotland's livestock are responsible for 50% of Scotland's methane emissions and are the biggest contributors to ammonia pollution producing 82% of all UK ammonia emissions in 2016 (largely from excess protein in livestock diets, and the management of manure).<sup>81</sup> The Scottish Government should therefore support farmers to reduce reliance on livestock, and develop a strategy aiming to reduce meat consumption by at least 20% by 2030, as recommended by the UK Climate Change Committee.<sup>82</sup>

Attaining higher environmental standards should not compromise the right to food enshrined in ICESCR. Healthy and sustainably produced food must be made affordable, and the Scottish Government must ensure that additional upfront costs arising from improved farming practices are not borne disproportionately by small-scale producers or low-income households. Robust policy measures are required to incentivise a shift away from input intensive agricultural monocultures producing food of low nutritional value.

### International responsibilities

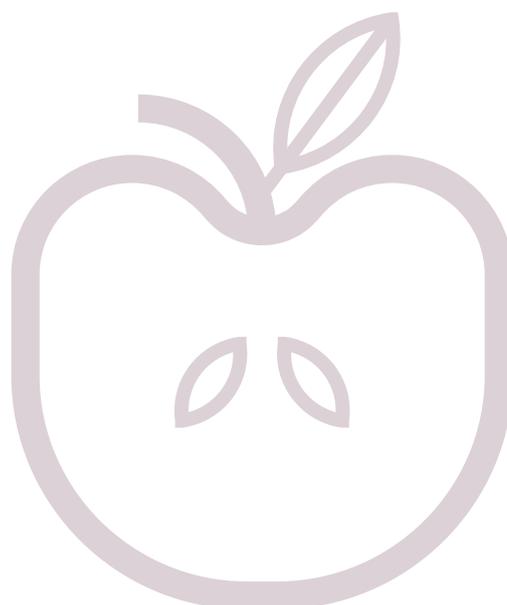
Food and farming regulations must also be reformed to consider the extra-territorial impacts of food consumed in Scotland, replicating best practice from the EU and elsewhere. For example, traceability requirements in a new EU deforestation law (passed December 2022) ban the sale of beef and soybeans linked to deforestation in the Amazon.<sup>83</sup> There is an opportunity for Scotland to devise equivalent regulations, strengthening supply chain accountability and sustainability.

### 5.3 Enforcement Mechanisms

The right to food is recognised in Article 11 of ICESCR which will be incorporated in the Human Rights Bill. Other relevant legislation includes the Food (Scotland) Act 2015, and the Good Food Nation (Scotland) Act 2022, which mandates Ministers and local authorities to create Good Food Nation Plans considering outcomes in relation to social and economic wellbeing, the environment, health, and economic development.<sup>84</sup> The Scottish Food Commission will be established under the Good Food Nation (Scotland) Act 2022 as an independent statutory body and is mandated to monitor and assess progress towards realisation of the right to food including the scrutiny of food plans produced by local authorities. As well as expediting the establishment of this commission, its powers could be strengthened to enforce the duty to organise an effective system of distribution and consumption to meet nutritional needs and sustainable production practices.

There is also an opportunity to strengthen enforcement through cross-referencing to the Natural Environment, Land Reform and Agricultural Bills currently under consideration by the Scottish Parliament. For example, in improving access to land for household and community growers, redirecting agricultural subsidies and strengthening payments to support nature friendly, agroecological and organic farming. In addition, there is scope to drive up standards and improve diets through public procurement: for example, by using the Community Wealth Building Bill to strengthen links with local and sustainable suppliers and to improve the quality of meals in public institutions such as schools and hospitals. The Public Health Promotions Bill also presents an opportunity to improve guidance on healthy and sustainable diets, considering the introduction of measures to encourage a reduction in meat consumption and restrict advertising for environmentally damaging or unhealthy foods.

Food Standards Scotland (FSS) is the public body that regulates food in Scotland and, under the Food (Scotland) Act 2015, is mandated to protect the public from health risks associated with food consumption; improve the extent to which members of the public have diets conducive to good health; and protect the other interests of consumers in relation to food.<sup>85</sup> The role of FSS, in tandem with the Scottish Food Commission, will be important in ensuring public health and sustainability objectives are achieved in Scotland's food system.



## 5.4 Recommendations



The Scottish Government should draw on the UN Special Rapporteur's thematic report on healthy and sustainable food<sup>86</sup> and recommendations of Scottish Environment LINK's Farm for Scotland's Future campaign,<sup>87</sup> taking steps to:

- **Significantly reduce chemical inputs in Scottish agriculture, prioritising agro-ecological methods such as Integrated Pest Management, and using synthetic pesticides only as a last resort.** Scotland should aim to exceed EU targets of a 20% reduction in nitrogen fertiliser, 50% in pesticides, and 50% in antimicrobials; and increasing the areas of farmland under organic standards to 25% by 2030.
- **Redirect agricultural payments and subsidies to reward nature-friendly farming and fishery practices and make payments conditional on environmental stewardship.** Payments must be based on the principle of public funds for public goods, supporting the maintenance of wildlife habitats, the promotion of agroforestry, and the creation of rural jobs, with an emphasis on supporting small-scale producers.
- **Support a shift towards nutritious, plant-based diets** through a reduction in meat consumption of at least 20% by 2030. This could be achieved through curbs on advertising, reforms to agricultural subsidies and public procurement, and developing just transition policies to support farmers and crofters wishing to diversify from livestock.
- **Use the purchasing power of public procurement to drive up standards and support local, sustainable suppliers.** The Scottish Government has already committed to Community Wealth Building. It could ensure public institutions such as universities, schools, hospitals and prisons review procurement policies to increase the proportion of local and/or organic food in canteens, shops and cafes, and work to strengthen ties with suppliers who abide by stringent environment conditions.



## 6 Nontoxic environments in which to live, work, study, and play

### 6.1 Definitions

This report supports the definition of non-toxic environments adopted by the UN Special Rapporteur as: **spaces free from pollution and of exposure to hazardous chemicals or substances.**

This right responds to:

*'Ongoing toxification of people and the planet, which is causing environmental injustices and creating "sacrifice zones", extremely contaminated areas where vulnerable and marginalized groups bear a disproportionate burden of the health, human rights and environmental consequences of exposure to pollution and hazardous substances.'*<sup>88</sup>

Duty bearers should uphold this right by acting to prevent pollution, eliminating the use of toxic substances and rehabilitating contaminated sites.

### 6.2 Standards

#### Preventing pollution

Scotland's waterways including rivers, inland lochs, and seas, are regularly exposed to contamination from sewage, wastewater, plastics, chemicals, and diffuse pollution, with implications for human and ecosystem health. Agriculture causes major impacts through the release of ammonia and nitrates, sewage sludge spreading,<sup>89</sup> and chemical leaching; while petrochemical production has been linked to both harmful emissions and the release of microplastics into terrestrial and marine environments. In Scotland, the high concentration of nurdles (plastic pellets) in the Firth of Forth, close to the Grangemouth petrochemical complex, provides a well-documented example.<sup>90</sup> Litter and fly tipping creates an additional source of pollution in both marine and terrestrial environments.

When it comes to pollution, prevention is better than the cure: it is better to reduce the absolute levels of pollution than to commit to cleaning it up after it happens. There is an opportunity for Scotland to adapt or replicate standards from the Convention for the Protection of the Marine Environment of the Northeast Atlantic (OSPAR Convention) 1992, which aims to prevent and eliminate pollution from land-based sources; pollution by dumping or incineration; and pollution from offshore sources. The OSPAR Convention adheres to five principles: ecosystem approach; precautionary principle; polluter pays principle; best available techniques; and best environmental practices, and conducts regular assessments of marine environments to minimise pollution from radioactive discharges, hazardous substances, and the offshore oil and gas industry.<sup>91</sup>

The principle of extended producer responsibility, and the introduction of bans on products (e.g. on single use plastics and vapes) that do not meet high environmental standards, can help to alleviate pollution. Water and soil quality should be regularly tested, and restrictions introduced on the discharge of effluents.

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## Eliminating toxic substances

Scotland should aim to keep pace with EU regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).<sup>92</sup> There is scope to replicate REACH in gathering information on the properties of various chemical substances, in order to allow for their safe handling, and to register the information in a central database. Scotland should also abide by the WHO air quality guidelines (discussed in section 2), the International Code of Conduct on Pesticide Management,<sup>93</sup> and the Globally Harmonised System of Classification and Labelling of Chemicals.<sup>94</sup>

New regulations are needed to eliminate the growing presence of per- and polyfluoroalkyl substances (PFAS), endocrine disruptors, microplastics, neonicotinoid pesticides, polycyclic aromatic hydrocarbons, pharmaceutical residues and nanoparticles in land and marine environments.

## Rehabilitating toxic environments

Contaminated land at refuse dumps, landfill, and former industrial sites must be subject to remediation and made safe for redevelopment, with regular testing to ensure hazardous substances are eliminated and do not breach the Control of Substances Hazardous to Health 2002 regulations.

In Scotland, there is a need to understand how communities with different levels of economic and political power are situated in proximity to contaminated or derelict land and can influence planning decisions. This is especially important in planning new industrial developments and securing sufficient and appropriate sites for Gypsy/Travellers<sup>95</sup> so as not to repeat the patterns of environmental injustice.

## International responsibilities

There is also a need to consider how regulations relate to imports (including toys, cosmetics, food packaging, electronics, and furnishings) produced in countries where regulatory standards are lower (e.g. permitting the use of chemical flame retardants) and exports (e.g. e-waste that is offshored to West Africa), with the aim of driving up standards internationally through progressive trade policy and restricting the flow of toxic products.

## 6.3 Enforcement Mechanisms

Relevant legislation includes Control of Substances Hazardous to Health 2002, the Waste (Scotland) Regulations 2012, the Control of Major Accidental Hazard Regulations 2015, and the forthcoming Circular Economy (Scotland) Bill. The 2010 Zero Waste Plan sets out measures and targets to reduce waste and increase recycling in Scotland by 2025.

Scotland is also party to various international treaties and conventions regulating chemicals and heavy metals, including the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal 1989, Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade 1998, Stockholm Convention on Persistent Organic Pollutants 2001, and Minamata Convention on Mercury 2013. These seek to ban, minimise or regulate the use of hazardous substances that pose a threat to human and environmental health. The Aarhus Convention's Kyiv Protocol on Pollutant Release and Transfer Registers requires Parties to collect and publish information on pollution from industrial facilities. This information must be gathered annually, made available in user-friendly ways to the public for free, and must include at least the 86 pollutants covered by the Protocol.<sup>96</sup>

The Health and Safety Executive is the UK's national regulator with responsibility for the regulation and enforcement of workplace health, safety, and welfare, while SEPA maintains responsibility for regulating pollutants and hazardous substances in Scotland more broadly. The Office for Nuclear Regulation bears responsibility for safety at nuclear sites. The Scottish Government, SEPA and Scottish Water should aim to increase monitoring for hazardous chemicals in high-risk areas, including sensitive environmental sites, military sites, airfields, and industrial sites, with data made publicly available and easily accessible. Monitoring and enforcement capabilities could be strengthened to accelerate the remediation of contaminated and derelict land and address the lack of transparency in data sharing.



## 6.4 Recommendations



The Scottish Government should draw on the UN Special Rapporteur's thematic report on non-toxic environments,<sup>97</sup> Fidra's recommendations on pollution prevention<sup>98</sup> and Scottish Environment LINK's briefing on chemical pollution,<sup>99</sup> taking steps to:

- **Eliminate the use of toxic substances and ensure products are safe by design.** Prioritise prevention and precaution in the use and disposal of chemicals and hazardous substances, commencing efforts to phase out or ban toxic and hazardous chemicals from consumer products for all non-essential uses (with a special focus on PFAS, endocrine disrupting chemicals, and other persistent chemicals), chemical fertilisers, pesticides and herbicides from agriculture (see section 5), and disposable and single-use plastic products.
- **Maintain or exceed standards set by EU REACH in the regulation of hazardous chemicals** and develop a transparent and effective monitoring and alert system.
- **Ensure regulatory agencies adhere to principles set out in the OSPAR Convention** to prevent and eliminate pollution from land-based sources; pollution by dumping or incineration; and pollution from offshore sources.
- **Improve the process for permitting, inspection and monitoring of radiation and hazardous substances, and enhance transparency and traceability requirements.** The Scottish Government, SEPA and Scottish Water should increase monitoring for radiation and hazardous chemicals in high-risk areas, including sensitive environmental sites, military sites, airfields, and industrial sites. Data should be both publicly available and easily accessible.
- **Review and manage the spreading of sewage sludge on agricultural land.** Implement recommendations of the Sludge Review and enforce the Safe Sludge Matrix through mandatory regulations and rigorous enforcement by SEPA. There is a need to assess the environmental contamination risks and impacts on human and animal health, update regulations and guidance, and ensure they are properly monitored and enforced.
- **Develop regional plans to rehabilitate and remediate contaminated environments.** Land and marine sites should be restored to health and made safe for both humans and wildlife, in line with ecosystem restoration obligations (see section 7) and operationalisation of the polluter pays and extended producer responsibility principles.



## 7 Healthy biodiversity and ecosystems

### 7.1 Definitions

**Biodiversity refers to the genetic, phenotypic, phylogenetic, and functional variability of living organisms (plants, animals, fungi, and various living microbes), as well as their function and distribution. Ecosystems refer to how this community of living organisms interacts with non-living components of the environment (energy, air, water, mineral soil).<sup>100</sup>**

Biodiversity and ecosystem health can be assessed based on the extent to which ecosystems retain their natural function and so have the capacity to deliver a range of benefits, and the extent to which their capacity to deliver benefits can be sustained under human and environmental pressures, including habitat loss and climate change.<sup>101</sup>

The UN Special Rapporteur on Human Rights and the Environment, John Knox, underscored the dependence of human rights on biodiversity,<sup>102</sup> and the human right to a healthy environment and a human rights-based approach are included in the Kunming-Montreal Global Biodiversity Framework 2022 (GBF) – guiding action at all levels to conserve, restore and sustainably use biodiversity.<sup>103</sup> The Stockholm Environment Institute’s conception of a ‘safe operating space’ where humanity can thrive without transgressing nine planetary boundaries – concerning climate change, chemical pollution, ocean acidification, stratospheric ozone depletion, nitrogen and phosphorus cycles, freshwater use, atmospheric aerosol loading, biodiversity loss, and land use change – also provides a useful formulation for considering biodiversity and ecosystem health.<sup>104</sup>

### 7.2 Standards

The Biodiversity Intactness Index (BII) measures the change in abundance of biodiversity in a given place following human activities on land, with 100% indicating that nature is fully intact. Research from the Natural History Museum and the RSPB compared biodiversity intactness in the UK with other nations and territories. Out of 240 countries/territories, Scotland is ranked at 28th from the bottom with a BII of 56% (240 is the country/territory with the highest biodiversity intact and 1 is the lowest).<sup>105</sup> Whilst this largely shows historical losses in nature, biodiversity continues to decline in Scotland.<sup>106</sup> This must be used as a wake-up call to drive up standards and measure progress towards ecosystem restoration.

To understand and implement measures to reverse the deterioration of biodiversity and ecosystem functions and services, the Global Assessment Report from the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) identifies a series of indicators for freshwater, marine and terrestrial environments which relate to ecosystem extent and condition, species extinction risk, the biotic integrity of ecological communities, biomass and species abundance, nature for indigenous peoples and local communities.<sup>107</sup>

The Scottish Government has committed to protect at least 30% of Scotland's land and seas for nature by 2030, and highly protect 10%.<sup>108</sup> Scottish Environment LINK outlines the standards necessary for Scotland to deliver this target in a way that meaningfully contributes to reversing biodiversity loss.<sup>109</sup> They are calling for progress towards nature's recovery to be tracked by looking at improvements in species abundance and distribution, extinction risk, and habitat quality and extent.<sup>110</sup> Overall, there is a need for the Scottish Government to develop a more robust definition of what counts as 'favourable conservation status' and 'good ecological condition', with a focus on international best practice.

In addition, Scotland must ensure that protections are effective through adequate management and monitoring, with management plans designed to stimulate nature recovery, and develop a long-term vision to increase restoration of Scotland's land and marine ecosystems beyond the 30% minimum threshold. As well as increasing the percentage of protected areas, commitments to the establishment of nature networks and habitat corridors must be realised through reforms to aquaculture and agriculture (discussed in section 5) and greening urban areas.

The Ocean Recovery Plan developed by LINK Marine Group outlines steps the Scottish Government can take to ensure healthy, well-managed seas by 2030, 'where wildlife and coastal communities flourish and ecosystems are protected, connected and thriving'.<sup>111</sup> These include strengthening Marine Protected Areas to 30% of Scotland's waters, with bans on extractive activity and the implementation of management measures to recover marine features; introducing binding targets to end overfishing and the discard of bycatch, alongside better vessel licencing and monitoring to increase transparency; and an increased public budget to develop ocean recovery plans.

## International responsibilities

Scotland is already party to a number of international treaties including the GBF, which enshrines 23 international targets to halt and reverse nature loss by 2030, as well as the Ramsar Convention (on the protection of wetlands), the Bern Convention (on the conservation of European wildlife and natural habitats), Bonn Convention (on migratory species), the OSPAR Convention (on the marine environment), and the Convention on the International Trade in Endangered Species.

Commitment to sustainable sourcing policies can supplement domestic action and help to halt and reverse degradation of terrestrial and marine environments elsewhere in the world.<sup>112</sup> This requires greater supply chain transparency, monitoring, and trade controls to prohibit the import of environmentally damaging products.

## 7.3 Enforcement Mechanisms

The UN Special Rapporteur's thematic report on a healthy biosphere identifies nine steps necessary for member states to protect biodiversity and ecosystem health: monitor and report on state of biodiversity and threats to biodiversity; adopt and implement national biodiversity plans; mainstream biodiversity into other policy areas (e.g. health and finance); create protected areas and establish other effective conservation measures; establish rules to ensure the sustainable use of biodiversity; enact legislation to protect threatened species; restore degraded ecosystems; prevent the spread of invasive species; and provide incentives for conservation and sustainable use.<sup>113</sup>

Both international treaties and domestic regulation have a role to play in enforcing standards. The Wildlife and Countryside Act 1981, Nature Conservation (Scotland) Act 2004 and Marine (Scotland) Act 2010 are the core statutes relevant to the implementation of the international agreements referred to above. Other relevant legislation includes the Natural Heritage (Scotland) Act 1991, the Environment Act 1995, the National Parks (Scotland) Act 2000, the Wildlife and Natural Environment (Scotland) Act 2011, the Marine Strategy Framework Directive and the National Planning Framework 4 – which will determine decisions around planning and support the establishment of national nature networks to connect nature-rich sites, restoration areas, and other environmental projects through a series of areas of suitable habitat, habitat corridors and stepping-stones.

The Scottish Government's Biodiversity Strategy 2022 pledges to make Scotland nature positive (i.e. halting and reversing species extinction and the degradation of ecosystems) by 2030, with restored and regenerated biodiversity and ecosystems across the country by 2045.<sup>114</sup> Importantly, statutory targets for nature recovery as well as a framework for monitoring, enforcing and reporting on those targets, are due to be introduced as part of Scotland's Natural Environment Bill. It is crucial that these emulate the goals and targets in the GBF for the Scottish context. This should include detailed metrics of biodiversity restoration with targets for species and habitats; targets to address biodiversity decline including for changing use of land and sea, tackling species exploitation and pollution control; and a route map to improve Scotland's BII.

There is also an opportunity to better regulate destructive practices such as muirburn, burning peatlands, and the mass trapping and culling of wildlife through additional legislation including the Grouse Moor Reform (Scotland) Bill, the Wildlife Management and Muirburn (Scotland) Bill and the Land Reform (Scotland) Bill, which includes new guidance on matters relating to the use, management and ownership of land. Robust monitoring of species and habitats could help to track progress towards ecosystem recovery and inform management strategies, in conjunction with stronger enforcement, fines and penalties against actors who violate wildlife laws and regulations. The forthcoming Agriculture Bill presents an opportunity to redirect agricultural subsidies to support nature friendly farming practices and improve provisions for nature recovery.

Relevant public bodies include NatureScot, the agency with overall responsibility for Scotland's natural, genetic and scenic diversity; Forestry and Land Scotland, who are responsible for managing Scotland's national forest estate and Scottish Forestry, responsible for forestry policy, support and regulation; the National Parks Authorities, who have jurisdiction to manage activities in the Cairngorms and Loch Lomond & Trossachs national parks; and the wildlife crime unit of Police Scotland, who are responsible for combatting illegal activity relating to the theft or harming of animals, plants, and habitats.



## 7.4 Recommendations



The Scottish Government should draw on the UN Special Rapporteur's thematic report on a healthy biosphere,<sup>115</sup> the IPBES Global Assessment Report,<sup>116</sup> the GBF<sup>117</sup> and Scottish Environment LINK's proposals for nature protection and restoration,<sup>118</sup> taking steps to:

- **Introduce ambitious nature recovery targets to achieve the restoration of biodiversity by 2045.** Statutory targets should implement the objectives of the GBF for Scotland and be accompanied by robust measures to ensure adequate monitoring and implementation.
- **Place protected areas at the heart of a wider programme of ecosystem restoration and species recovery.** This should meet commitments to protect at least 30% of Scotland's land and seas by 2030, with highly protected area designation for at least 10% in order to minimise ecosystem disturbances and permit recovery.
- **Expand nature networks and habitat corridors** through the introduction of nature-friendly farming and fisheries practices (discussed in section 5), greening urban areas, and better regulating destructive practices such as muirburn, burning peatlands, and the mass trapping and culling of wildlife.
- **Expand and increase ecosystem monitoring and reporting, with better use of enforcement powers by environmental regulators.** Robust monitoring of species and habitats can help to track progress towards ecosystem recovery and inform management strategies. Stronger enforcement, fines and penalties against actors violating environmental laws and standards would deter malpractice.
- **Strengthen the involvement of local communities in the stewardship and management of Protected Areas.** The Scottish Government should prepare and implement management plans for all protected areas in consultation with local communities, and under conditions that ensure community benefits. Areas reserved for nature must be balanced with community access to greenspace, and the cultivation of sustainable livelihood opportunities in rural areas.

## 8 Guiding principles and concluding remarks

Protecting the environment contributes to the fulfilment of human rights, and protecting human rights contributes to safeguarding the environment. Using a rights-based approach is imperative to ensure benefits are maximised for individuals and communities who are most vulnerable to the impacts of environmental harm and have least access to environmental services, in Scotland and abroad.

To ensure that measures and resources address the legacy of environmental injustice in Scotland and promote climate justice, it is essential that we address the gaps in systematic data gathering and comprehensive analysis as set out in the action on the right to a healthy environment in Scotland's second National Human Rights Action Plan 2023–2030 (SNAP 2):

***'Carry out a human rights review of collated baseline data on air, land and water pollution impacts and severe weather events. To address the disproportionate impact of environmental harms on marginalised places and people whose rights are most at risk, prioritise focus on: (a) areas of highest deprivation and/or at higher risk; (b) the impact of environmental hazards on health outcomes; and (c) the extent to which mitigation and adaptation measures are prioritised for areas of highest deprivation. Use findings to inform national decision-making to help better realise the right to a healthy environment.'***<sup>119</sup>

This report has sought to identify the most appropriate definitions, standards, and enforcement mechanisms for the six substantive features of the right to a clean, healthy, and sustainable environment. Simultaneously, the recommendations reinforce the need to strengthen our procedural rights and improve the three tiers of environmental governance: independent oversight, effective executive (including regulatory) controls, and robust judicial routes to remedy.<sup>120</sup>

Finally, the following principles, adapted from the UN Special Rapporteurs on Human Rights and the Environment and the Framework Principles on Human Rights and the Environment,<sup>121</sup> are offered as cross-cutting guidance on how to implement human rights obligations relating to the enjoyment of a clean, healthy and sustainable environment.



## Guiding principles



- **Embed the five environmental principles** when establishing the definitions and highest standards of the substantive features to ensure policy coherence and coordination across all sectors. The principles are provided for by the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021<sup>122</sup> and are that protecting the environment should be integrated into the making of policies, precaution, prevention, rectification at source, and the polluter should pay.
- **Ensure full compliance with the Aarhus Convention** on access to information, public participation in decision-making and access to justice in environmental matters.<sup>123</sup>
- **Ensure access to effective remedies against public bodies and private actors.** This should include non-judicial and judicial routes to remedy.
- **Ensure that environmental standards are non-discriminatory, non-retrogressive and otherwise respect, protect and fulfil human rights, including those of children.**<sup>124</sup> Upholding the right could be included within the duties of a Future Generations Commissioner, Wellbeing and Sustainable Development Commissioner or similar role.
- **Establish effective monitoring, regulatory and enforcement capabilities.** To meet the high standards advised by global scientific bodies such as WHO, IPBES and IPCC, and achieve regulatory alignment with the EU, Scotland's environmental regulators must be equipped with sufficient resources and personnel to maintain accurate records of environmental data and endowed with powers to effectively sanction public and private actors.
- **Ensure adequate provision for access to environmental information and effective public oversight.** There must be enhanced transparency and public awareness of the performance of public bodies and polluters in reducing harmful emissions.

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