

Defining Rewilding for Scotland's Public Sector



AGRICULTURE, ENVIRONMENT AND MARINE

Defining Rewilding for Scotland's Public Sector



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Prepared by the James Hutton Institute for the Scottish Government

July 2023

Acknowledgements:

We would like to thank all participants to the workshop on rewilding on 17th April 2023 which contributed to this report: please see Annex 1 for a full list of their names and details. Thanks to our colleagues Antonia Boyce and Naomi Beingessner (James Hutton Institute) for assisting in the workshop facilitation, and for Antonia Boyce and Annie McKee (James Hutton Institute) for commenting on the draft report.

The views expressed in this report are those of the researchers and do not necessarily represent those of the Scottish Government or Scottish Ministers.

List of acronyms

BES	British Ecological Society
CEM	Commission on Ecosystem Management
CEO	Chief Executive Officer
CIEEM	Chartered institute of Ecology and Environmental Management
CNP(A)	Cairngorms National Park (Authority)
eNGO	Environmental non-governmental organisation
HIE	Highlands and Islands Enterprise
GEF	Global Environment Facility
IUCN	International Union for Conservation of Nature
JMT	John Muir Trust
LLTNPA	Loch Lomond and Trossachs National Park Authority
NGO	Non-governmental organisation
RESAS	Rural & Environmental Science and Analytical Services
RTG	Rewilding Thematic Group (of the International Union for Conservation of Nature's Commission on Ecosystem Management)
SEPA	Scottish Environment Protection Agency
SER	Society for Ecological Restoration
SG	Scottish Government
SWT	Scottish Wildlife Trust
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation

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Foreword

I am pleased to introduce this research identifying a formal definition of ‘rewilding’ suitable for reference by the Scottish Government and wider public sector.

Our vision is to empower communities to benefit from the opportunities presented by nature restoration and the journey to net zero, as part of our work towards a [Just Transition](#). This vision supports the wider goals of the Scottish Government, including commitments set out in the [2022-23 Programme for Government](#).

Rewilding is a new term increasingly used within conservation, which is now being discussed in Scotland and used by some within the context of green land investment activities. However, to date, there have been a range of different understandings of the term ‘rewilding’ and its meaning, which has led to challenges.

By engaging with debates around rewilding, considering its use and relevance in a Scottish context, and reflecting the views of a range of stakeholders, this report makes an important contribution to a shared understanding of rewilding and its definition.

I endorse the new definition of rewilding for use by the Scottish Government and the wider Scottish public sector.

The new definition and key research findings will be used to inform policy development in this area, and are intended to offer a practical reference point for policy makers and wider stakeholders.

Professor Mathew Williams, Chief Scientific Adviser (CSA) Environment, Natural Resources and Agriculture, Scottish Government.

July 2023



Highlights

What is the purpose of this report?

In the last 10 years it has become increasingly common to hear the term 'Rewilding' mentioned in Scotland, especially within the media and by some land managers. However, the term and its definition remain contested and it has not been universally adopted. The Scottish Government commissioned this research to investigate views on the term 'rewilding' and whether it is suitable for adoption in Scotland's public sector.

What did we do?

We conducted an evidence review of key 'Rewilding' concepts and definitions relevant for use in Scotland, followed by a deliberative workshop with public sector representatives. The work was carried out in Spring 2023.

What did we learn in the evidence review?

Interpretations vary, but most experts agree that rewilding means working to restore ecosystem function, resulting in autonomous (self-sufficient) natural processes that require relatively little human intervention. Rewilding may involve introducing species, to replace those lost due to human impacts. Many also associate rewilding with the exclusion of human activity, which can be controversial. However, in recent debates over rewilding, those who endorse rewilding have often been keen to emphasise that it can involve and/or benefit society. 'Restoration' is a closely related term with slightly less emphasis on achieving natural autonomy and less controversial associations.

In recognition of these debates, in 2017 the Commission for Ecosystem Management of the International Union for Conservation of Nature (IUCN) authorised a [Rewilding Thematic Group \(RTG\)](#) to 'synthesize and streamline' the theory on rewilding. The resulting definition and principles are a key reference point. Another group relevant to Scotland is the [European Rewilding Network](#).

Rewilding practices in Scotland, as well as the wider UK, reflect and contribute to the European and international debates on rewilding. Rewilding initiatives vary in their setting, scope and visions of 'wildness'. Many plan to engage with local communities or other groups in society, or produce some kind of benefit for society, ranging from inspiration to investments in local areas. Initiatives are mainly led by individual site managers; the term 'rewilding' is not widely adopted by either the public sector or not-for-profit organisations working for nature conservation in Scotland. For these groups, restoration is a more dominant and preferred term.

What did we learn in the workshop?

In the workshop, there was some support for the International Union for the Conservation of Nature (IUCN) Rewilding Thematic Group's definition and

principles; but also some caution and concerns. These primarily focused on: the potential lack of attention given to societal issues in the process of rewilding, for example community empowerment, rights and justice; and the accessibility of the statement's language, as it uses scientific terms that may be unfamiliar to a non-specialist audiences. Therefore, proposing a new definition was recommended.

Whilst many workshop participants were positive about clarifying the meaning of rewilding, at least a third of workshop participants voiced doubts about the need to refer to rewilding. This relates to the lack of clear policy drivers for using the term, but also the varied interpretations and emotions it can provoke. Some workshop participants felt that other terminology and framings may be useful depending on the situation and audience. No one term or concept is 'best': rewilding must be seen as part of a continuum of landscape management approaches to support the well-being of Scotland's nature and society.

What recommendations do we make?

- Based on the evidence review and the workshop findings, we propose this new definition for Scotland:

“Rewilding means enabling nature's recovery, whilst reflecting and respecting Scotland's society and heritage, to achieve more resilient and autonomous ecosystems.

Rewilding is part of a set of terms and approaches to landscape and nature management; it differs from other approaches in seeking to enable natural processes which eventually require relatively little management by humans.

As with all landscape management, rewilding should be achieved by processes that engage and ideally benefit local communities, in line with Scotland's Land Rights and Responsibilities Statement, to support a Just Transition.”

- This definition is intended to be positive, accessible, and compatible with international and European expert positions. The first sentence can be used by itself as a shorter definition if conciseness is needed.
- For more information, we recommend consulting the IUCN Rewilding Thematic Group's ten [guiding principles for rewilding](#) in conjunction with the [Scottish Land Rights and Responsibilities Statement](#).
- We suggest further attention to articulating when and how public sector actors should refer to rewilding, alongside guidance on communication. All positions and guidance on rewilding may need to be revisited in future, to reflect evolving debates and emerging practices.
- Lastly, rewilding should always be seen as part of a wider set of landscape and nature management terms and practices. The choice of terminology and design of approaches will depend on specific contexts, to reflect the overall goal of managing nature and landscapes in support of a Just Transition.

1. Introduction

This chapter summarises the context that has informed the work reported here, and the structure of the report. The purpose of this work has been to propose a definition of rewilding that is suitable for use by Scotland's public sector.

Background to this report

In the last few years it has become common to hear rewilding mentioned in Scotland's media, as a label for some types of nature-oriented land management. However, rewilding is a very new term: a decade ago the term was rarely used anywhere in Scotland. As a result, there is not always a clear or shared understanding of what it implies. A shared understanding of the term could help Scotland's public sector to navigate the ongoing debate and practices linked to this term.

This report is part of wider research commissioned by the Scottish Government into the socio-economic impacts of 'green' land investment in rural Scotland, which included a task on rewilding. The purpose of this task is to propose a working definition of 'rewilding' that is suitable for use by the public sector in Scotland.

To achieve this, the authors of this report carried out an evidence review of key 'Rewilding' concepts and definitions with a specific focus on the Scottish context. This informed the design of a deliberative workshop, to which we invited representatives from Scotland's public sector together with other experts, to discuss how to define rewilding.

Structure of this report

The chapter that follows describes the methodology used by this study, which involved an evidence review, followed by a workshop informed by that review. Chapters 3 and 4 then set out the main findings of the evidence review and workshop in detail. This is followed by a chapter which proposes a definition of rewilding for Scotland's public sector. Lastly, Chapter 6 sets out the conclusions, and identifies implications and recommendations for future activities and use of the term 'rewilding' – and other related terms – for the well-being of nature and society in Scotland.

The references section provides further sources of information (academic papers, books, reports, webpages) that are cited in the main text in the form "(Smith et al, 2022)". Additionally, weblinks are embedded in the text for organisational websites. The report is followed by annexes which provide more information on workshop participants and the methodology, and excerpts from others' illustrations of how rewilding can be related to other concepts.

2. Methodology

Our methodology comprised two stages. Firstly, we undertook a literature review: a range of academic and non-academic sources were used to understand evolving definitions and debates around rewilding, and any existing uses of the term by the public sector. Secondly, we carried out a workshop with 26 governmental, academic and public sector stakeholders to debate and identify a suitable definition of 'rewilding' for use by the Scottish public sector.

Literature review methodology

In January to March 2023 we reviewed the academic and grey literature on rewilding to identify key sources and themes in the evolving cross-disciplinary debate.

The review of academic sources was based on searching for 'rewilding' as a keyword on Web of Science and Google Scholar, and by following patterns of citations. Over 100 papers were reviewed: Chapter 3 references sources that are particularly influential, recent and relevant to Scotland. We also consulted webpages by proponents of rewilding, and webpages and media websites where rewilding is discussed. The search for these webpages was carried out using 'rewilding' as a keyword in Google, and in Google News.

To understand the ways in which the public sector in Scotland refers to and understands the term 'rewilding', a key word search was carried out across the domain "gov.scot" and for several Scottish statutory and public sector organisations: Nature Scot, Cairngorms National Park Authority, Loch Lomond and the Trossachs National Park Authority, Highlands and Islands Enterprise, the Scottish Environment Protection Agency, Scottish Land Commission, South of Scotland Enterprise, Scottish Enterprise and Marine Scotland. We also looked for uses of the term by the public sector in other UK administrations. The results of this search demonstrated that the term is generally very rarely used, so we also looked at the use of related terms, notably 'restoration' and 'regeneration'.

Workshop methodology

Following the evidence review, we designed a workshop to debate and identify a definition of rewilding suitable for Scotland's public sector. The workshop had a particular focus on exploring the suitability of the International Union for the Conservation of Nature (IUCN)'s Rewilding Thematic Group's proposed definition (see Chapter 3). The workshop was held online, on 17th April 2023.

There were 26 participants in addition to the facilitators. Invitations had been targeted at Scotland's public sector, and especially those agencies and departments whose work relates to nature management, ranging from teams

working on biodiversity policy through to heritage, land use and land reform. A number of other participants were also present from academia, environmental non-governmental organisations (eNGOs) and other UK public sector administrations. The full list of participants and their affiliations can be found in Annex 1.

The workshop began with a presentation from the co-chairs of the International Union for the Conservation of Nature (IUCN) Rewilding Thematic Group, communicating the definition of 'rewilding' that they have produced, and the steps taken to produce this, followed by a wider discussion. Participants were then grouped into small groups in separate 'virtual rooms', each with a facilitator, and asked to discuss three questions:

1. Is the IUCN definition suitable for Scotland? (Why? Why not? How adapt?)
2. Are other concepts seen as related, or preferred? (Why? When?)
3. Why and when it may be useful to refer to rewilding?

The full workshop agenda can be found in Annex 2.

3. Literature review: main findings

This chapter sets out the findings of an evidence review on ‘Rewilding’ with particular attention to uses of the term relevant to Scotland. The review finds the term is being used quite variably, though always with a focus on restoring ecological processes. It may be associated with ideas of reintroduction of large animals, and exclusion of people, but these are not always part of rewilding visions; indeed many who argue for rewilding argue that it can involve and benefit people. There has been recent work to synthesise uses and debates over rewilding. Perhaps because rewilding evokes so many ideas, and can be emotive, the public sector in Scotland has not made much reference to the term.

This review describes the origins of ‘rewilding’ before focusing on key themes and practices relevant to the context of Europe, the UK and Scotland. The second part of the review outlines pre-existing references to rewilding by Scotland’s public sector, and also their use of related terms such as restoration.

An evolving international discourse on ‘rewilding’

Rewilding is a term that has been used increasingly often in the last 20-30 years, in Scotland, the UK and internationally. This section briefly reviews the origins of the term and the current international discourse relating to it.

The ‘origins’ of rewilding

Early concepts of rewilding, emerging in the 1990s, were associated with ideas of ‘wilderness’ in North America, and the desire to return large areas of land to the condition in which it had been prior to significant human intervention. Although definitions vary, it is generally accepted that rewilding means working to restore ecosystem function, resulting in autonomous natural processes that require relatively little human intervention. The term is often associated with species reintroduction, and the reduction or even exclusion of human presence and activities.

The term rewilding first came to be used around 1990 and is associated with North American conservationists (Jørgensen, 2015). In large North American landscapes, such as the Yellowstone National Park, the impact of humans was perceived by these conservationists as detrimental, but also relatively recent and reversible. They therefore sought to protect and manage these places as ‘wilderness’ so that they would regain all components of the ecosystems¹ that existed before significant human impact (Soulè & Noss, 1998). Achieving this might involve species reintroductions, as many large

¹ An ecosystem is a complex of living organisms, their physical environment, and all their interrelationships in a particular unit of space (Encyclopedia Britannica, 2023).

mammals had been made extinct by humans by the early Holocene², which significantly altered the functioning of ecological systems. For example, where top predators are removed from an ecosystem, reduced predation pressures can lead to significantly greater herbivore populations, with consequent impacts on grazed species. By restoring these lost interactions, rewilded landscapes are expected to house more complex, resilient and self-sustaining ecosystems (Perino et al., 2019).

- What is always distinct about rewilding is the aim of achieving dynamic systems that are – eventually – entirely autonomous and self-governing (Jepson, 2016).

Rewilding also has two other strong associations (Pettorelli et al., 2019):

- Firstly, the introduction of species – usually large herbivores and carnivores – to replace ‘keystone’ species driven extinct by humans. These may not be exactly the same species as existed in prehistory, as many of these are now extinct, but should perform similar functions in the ecosystem (Bakker & Svenning, 2018). Passive ‘hands off approaches’ may be sufficient, in other words waiting for natural recolonisation, or where plant species still exist in the seed bank, where mobile animals exist elsewhere. In other cases, active management such as species translocations³ may be initially needed.
- Secondly, rewilding is associated with the exclusion or avoidance of significant human presence in landscapes, in order to remove negative impacts from human activity – though also less benefits to humans from those activities. Removing or avoiding human impacts extends also to an eventual lack of input or management by humans.

Rewilding is therefore potentially both an inspiring and a provocative idea for those who identify and work for nature management, as well as wider society.

Rewilding versus restoration

This section explores the differences between rewilding and restoration. All rewilding is restoration but not all restoration is rewilding. Both imply (re)creating components of dynamic ecosystems. However, restoration implies a higher level of ongoing human management, while rewilding is usually associated with more minimal human intervention to steer the ecosystem, also resulting in more unpredictable outcomes. The current United Nations (UN) Decade on Restoration marks the acceptance and current prominence of the latter term.

² The Holocene began after the last ice age, about 10,000 years ago, and continues today (Encyclopedia Britannica, 2022).

³ Translocation refers to the intentional human-mediated movement of species from one site to another term. It is an overarching term that encompasses the reintroduction of extinct species, reinforcement of small populations, or introduction of new species. Seddon (2022) provides more information on the role of translocations in rewilding.

Rewilding is related to a set of academic and practical activities labelled restoration ecology or ecological restoration. This field became established by the 1990s, similar to but slightly preceding rewilding. The most common and authoritative definition of restoration comes from the [Society for Ecological Restoration](#) (SER, 2004), which defines it as “*the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed*”.

This sounds very similar to rewilding, since there is a shared focus on returning or referring to a (undefined) past state. However, restoration does not tend to have associations with human removal and separation from ecological systems. Nor does it imply that future human management will be quite so minimal or unnecessary. Rewilding is thus typically seen as a less ‘interventionist’ branch of restoration (Bullock et al., 2022).

Rewilding is also seen as a more radical version of restoration. For example, rewilding that introduces novel species and embraces unexpected outcomes has the potential for novel unpredictable ecosystems (Biermann & Anderson, 2017). For some environmentalists this vision of autonomous and dynamic nature is attractive and inspiring. However, for others it is a concern, as this means there may be unforeseen interactions with and consequences for society. Additionally, some commentators have raised the concern that rewilding – and indeed, the very idea of wilderness – can reinforce an unhelpful and unjust dualism between humans and nature (Cronon, 1996). All these concerns are more muted when restoration is invoked. As a result of these concerns, and the conceptual ‘fuzziness’ around rewilding, some ecologists and conservationists have argued that rewilding is best avoided in favour of restoration (Hayward et al., 2019).

Restoration is integral to tackling the twin crises of climate change and biodiversity loss. In 2021, the United Nations (UN) ‘[Decade on Restoration](#)’ was launched by its Environment Programme and Food and Agriculture Organisation, to run 2021-2030. The UN defines restoration as “*the process of halting and reversing degradation, resulting in improved ecosystem services and recovered biodiversity*”. This follows on from the UN Decade of Biodiversity, suggesting a shift in emphasis towards ecological functions redolent of rewilding. Restoration is described as helping to end poverty, combat climate change, as well as prevent mass extinctions. This initiative has been embraced by Global, European and British rewilding movements (Martin et al., 2021b), who argue that rewilding is integral to achieving these aims. The UN’s literature defines restoration quite expansively, noting that it is not always possible or desirable to return ecosystems to their ‘original state’ – with the right choice depending on the situation. This is mirrored by its range of examples and restoration ‘flagships’. Most countries worldwide, including Scotland as part of the UK, are part of the UN. Although the announcement of the Decade on Restoration does not immediately and directly change many practices, it brings attention and legitimacy to attending to ecological processes and functions resonant with rewilding (Jepson, 2022). Additionally, UN resolutions influence resource flow, for example through the

Global Environment Facility⁴. Therefore restoration is becoming a more influential framing concept in global conservation and nature management.

Evolving ideas and practices

Although rewilding is still a 'marginal' term within nature management and conservation, many are concerned by its associations with human exclusion and species reintroduction. The resulting debates, alongside changing practices, have led to rewilding being referred to in a variety of ways, often with stronger emphasis on the potential for societal benefit and agency in rewilding.

Since the early 1990s, rewilding has become a more common term in international discourses over land and natural resource management.

Many rewilding initiatives are in the Global North. The most high profile example, widely viewed as a success (for example, Ripple & Beschta, 2012), was the 1995 reintroduction of wild wolves in the US Yellowstone National Park. The wolves' predation on deer and elk populations led to reduced grazing pressures with wide ranging consequences, including: regeneration of trees, stabilised riverbanks, and increased populations of fish, beavers and other wildlife. A small number of examples can also be found in the Global South, such as the introduction of giant tortoises – as a replacement for species now extinct – to suppress prolific weeds and enhance dispersal and germination of the key tree species in Mauritius (Griffiths et al., 2010).

The growing set of practices reflects varying ideas of rewilding. A key difference between different approaches is whether species are actively (re)introduced or more 'passive' approaches are to reinvigorating ecosystems, related to varied commitment to recreating past states (Seddon, 2022). As a result, proponents of rewilding have offered many definitions of rewilding – at least 14, according to the analysis of Hayward et al. (2019). This report does not list them all, but sources such as Hayward et al. (2019) and (Pettorelli et al., 2019) provide a more in-depth review of definitions and their underlying themes.

Although rewilding is a label that has become much more commonly used in the last 10 years, it is by no means supported by all those who identify as working to conserve or manage nature. The wider conservation sector has – and still – tends to focus on achieving specific goals for biodiversity, species abundance or habitat restoration, rather than ecological functions *per se* (Holmes et al., 2020). As such, rewilding is still relatively 'marginal' and is not

⁴ The Global Environment Facility, also referred to as GEF, is a multilateral environmental fund that provides grants and blended finance for projects related to a variety of environmental challenges in developing countries, and serves as the financial mechanism for the major international conventions including the UN Convention on Biological Diversity and the UN Framework Convention on Climate Change. See the [Global Environment Facility website](#).

a dominant influence on nature management and conservation practices (Lorimer et al., 2015; Wynne-Jones et al., 2020).

Concerns and responses

There are many reasons why rewilding ideas and practices may not (yet) be dominant. This may relate to some of the associations that rewilding has, leading it to be perceived as unpalatable or impractical:

- Firstly, where many parts of the world have high human population density, expectations that humans will be physically excluded from landscapes are seen as unworkable and unfair (Ward, 2019). For example, where some people's livelihoods directly depend on harvesting non-domesticated plants and animals, lost access to those resources may be unjust.
- Secondly, reintroducing large mammals – especially carnivores – can cause risks to those living or working nearby, including disease transmission, unwanted changes to landscape structure, or direct attacks to humans, livestock, or pets (Bruskotter et al., 2017; Jordan et al., 2020).

In countries with a history of colonial settlement and forced relocations, these ideas are especially troubling (Ward, 2019). The very idea of rewilding and wilderness is seen to reflect western ideas of colonial nature-culture separation (Ward, 2019) whilst rewilding interventions may mirror and reinforce the effects of past injustices, affecting some of those in rural communities who are already least privileged.

In response, many have defended rewilding as misunderstood or misrepresented. Prior and Ward (2016) argue that rewilding is not endlessly flexible, as it always emphasises non-human autonomy; and that wilderness management is not 'anti-human'. Other proponents of rewilding have argued that it *is* compatible with tackling major societal challenges. Svenning (2020) argues that initiatives for rewilding must be sited and designed in response to 'societal dynamics', whilst its success will help tackle major challenges such as climate change mitigation. Despite concerns about neocolonialism, some have argued rewilding may even help to right past injustices associated with colonialism – which was generally associated with 'dewilding' (Arnds, 2020).

Recognition of these concerns has also influenced the debate over the meaning and implications of rewilding. Varied and nuanced understandings of rewilding now exist. Jørgensen (2015) has examined how use of the term has changed since the 1990s and describes the variation and shifting references as representing great 'plasticity' (taking on different meanings according to context and purpose). As an example of the evolving and varied views held by rewilders, Holmes et al. (2020) surveyed understandings of rewilding by those who advocate and work for it across Europe. They found that one set of actors envisioned the '*radical transformation*' of rural landscapes, and another set '*focused on pragmatism*', and used the term more flexibly in pursuit of restoring aspects of natural systems in different places. Interestingly, all respondents shared the view that humans are part of nature,

which contrasts with the ‘original’ view of rewilding. Even more strikingly, a study of discourses around rewilding in Scotland (Martin et al., 2021a) showed that many now even associate rewilding with ‘repeopling’ and benefits to local rural economies, though Martin questioned to what extent expectations would be reflected by practices.

In summary, there are now many ideas of and claims made for rewilding. This reflects diverse and evolving views of rewilding by its advocates. It may also reflect what Martin et al. (2021a) call ‘reflexive control of the narrative - in other words, those choosing to refer to rewilding are often well aware of potential concerns raised by the term, so are careful to caveat or alter it to reduce controversy. More ‘pragmatic’ visions of rewilding may be more inclusive of people, yet also seem to blur into other concepts including restoration. As a result, although much debate has considered what belongs inside the definition of rewilding, it may be as useful to consider how rewilding relates to a wider family of approaches in nature and landscape management. There is also a clear need to appraise future practices.

Proposals by the Rewilding Thematic Group of the International Union for the Conservation of Nature’s Commission for Ecosystem Management

A Rewilding Thematic Group (RTG) was established by the IUCN Commission for Ecosystem Management in 2017, to navigate debates and current practice in order to develop a unified and cohesive position on rewilding. The group members have collaboratively produced a definition and principles of rewilding with a global remit, that are intended to streamline and unify current understandings. This section describes their work and the resulting definition and principles.

In response to growing use of the term ‘rewilding’, and debates over its definition, in late 2017 the International Union for the Conservation of Nature (IUCN) Commission for Ecosystem Management (CEM)⁵ set up a Rewilding Thematic Group (RTG)⁶. Its goal is to “*synthesise and streamline the theory and practice of rewilding... to develop a more unified and cohesive rewilding approach that is both science-based and community-focused*”. The work of this group is notably separate from a pre-existing thematic group on restoration, but with rewilding understood as part of a framework of other

⁵ The International Union for Nature Conservation (IUCN) has both governmental and civil society members, and describes itself as ‘the global authority on the status of the natural world and the measures needed to safeguard it’. It is perhaps most famous for its ‘red list’ of endangered and threatened species, but it also develops policy and guidance on many conservation topics and activities. The Commission for Ecosystem Management (CEM) is one of seven expert commissions in which individual scientists and other experts voluntarily collaborate to reflect and produce new guidance.

⁶ The Rewilding Thematic Group (RTG) was originally called the Rewilding Task Force, so both terms may be used in documents. More information can be found on the [IUCN CEM Rewilding Thematic Group webpage](#).

concepts in ecosystem management, ranging from nature-based solutions to protected areas management.

The Rewilding Thematic Group reviewed the literature, surveyed practices and experts in rewilding and restoration, and reviewed the position of key organisations. This fed into a period of deliberation during 2018-19, resulting in a definition of rewilding and ten principles for its implementation. These principles represented the dominant points of view of most participants in the process. The group's Rewilding definition and principles are presented in a [2021 note](#) and [briefing](#) (IUCN (2021); IUCN CEM RTG (2021)). This work is peer reviewed in Carver et al. (2021) and complemented by a book setting out current theory, practice and debate (Hawkins et al., 2023).

Current work is ongoing to discuss and develop these principles more widely as official IUCN policy, so the definition and principles may still evolve. As of early 2023, the Rewilding Thematic Group's definition and principles provide an authoritative reference point in terms of how rewilding should be understood and used. The definition is copied below, and the principles follow in Box 1. The RTG intends the definition and principles to be globally relevant, but expects that adaptation may be needed for specific contexts or non-specialists.

“Rewilding: the process of rebuilding, following major human disturbance, a natural ecosystem by restoring natural processes and the complete or near complete food-web at all trophic levels as a self-sustaining and resilient ecosystem using *biota*⁷ that would have been present had the disturbance not occurred. This will involve a paradigm shift in the relationship between humans and nature. The ultimate goal of rewilding is the restoration of functioning native ecosystems complete with fully occupied trophic levels that are nature-led across a range of landscape scales. Rewilded ecosystems should - where possible - be self-sustaining requiring no or minimum-intervention management (i.e., *natura naturans* or “nature doing what nature does”), recognising that ecosystems are dynamic and not static.”

⁷ Biota means the animal and plant life of a particular region, habitat, or geological period.

Box 1. Principles to guide rewilding initiatives

1. Rewilding uses wildlife to restore food webs and food chains.
2. Rewilding plans should identify core rewilded areas, ways to connect them, and ensure outcomes are to the mutual benefit of people and nature.
3. Rewilding requires local engagement and community support.
4. Rewilding focuses on the recovery of ecological processes, interactions and conditions based on similar healthy ecosystems.
5. Rewilding recognizes that ecosystems are dynamic and constantly changing.
6. Rewilding should anticipate the effects of climate change and act as a tool to mitigate its impacts.
7. Rewilding is informed by science and considers local knowledge.
8. Rewilding recognizes the intrinsic value of all species.
9. Rewilding is adaptive and dependent on monitoring and feedback.
10. Rewilding is a paradigm shift in the co-existence of humans and nature.

Source: International Union for Nature Conservation (IUCN, 2021). See also Carver et al. (2021) and IUCN CEM RTG (2021) for more detailed discussion that contextualises and clarifies each principle – note the order and wording of principles varies between different sources, with the IUCN 2021 providing the most accessible entry point.

Rewilding in the Scottish Context

This section reviews understandings and practices that are specifically relevant to or influential on Scotland, narrowing down from the European, to the UK, and finally the Scottish context. In both the UK and Scottish context we consider separately if and how rewilding is referred to by the public sector.

Rewilding discourse and practices in Europe

Generally, European rewilding is a future-oriented approach, prioritising economic and social opportunities and aiming to address climate change. There is a lack of public sector guidance or reference to rewilding at the European level. However, the European Commission has recently proposed legally binding targets for EU nature restoration, which may have implications for rewilding.

Whilst the discourse around rewilding is international – and indeed many of the sources referenced above are based in or studying European systems – there are differences in how it is understood in different regions. Holmes et al. (2020) refer to North American rewilding being more focused on ‘purity’, in other words reinventing past ecosystems; whereas European rewilding has generally been more ‘future oriented’, accepting that systems of the distant past cannot and should not be entirely recreated.

European landscapes reflect a long history of human activity and influence; and many of their valued attributes result or depend on continued human activity (Vos & Meeke, 1999). Additionally, as Europe is relatively densely populated, there is little prospect of reserving huge areas without any human presence or influence. The [European Landscape Convention](#) frames landscapes as places arising from close interaction between people and nature, and commits signatories (including the UK administrations) to maintaining this heritage in collaboration with communities.

Proponents of rewilding in Europe emphasise “*moving up the scale of wildness within the constraints of what is possible*” (Schepers & Jepson, 2016). There is stronger acceptance of human activity as being integral - and unavoidable - in shaping European landscapes. With interpretation of becoming “wilder”, the ‘re-’ prefix may even be misleading (Wynne-Jones et al., 2018).

Jones & Comfort’s (2020) detailed commentary on rewilding in Europe finds there is a common focus on (a) claiming economic and social opportunities from rewilding and (b) the role of rewilding in counteracting climate change. Practices labelled as rewilding mostly date from the last 15 years, and have typically been led by specialist environmental Non-Governmental Organisations. Initiatives describing themselves as rewilding date from the turn of the millenium, with Schepers and Jepson (2016) reporting rewilding initiatives dating from 2008, in the Netherlands, Sweden and the UK.



Box 2. The example of Oostvaardersplassen

Oostvaardersplassen, in the Netherlands, is the site of one of the most famous rewilding projects, whose philosophy of letting nature take its course predates the rewilding label (somewhat ironically, given it is created from land reclaimed from the sea). It is a relatively isolated 56 kilometre square site managed by the Staatsbosbeheer (state forestry service). The original management goal was to promote bird life. As with some other – but not all – rewilding initiatives, it has evolved from previous site management that predates the use of the term ‘rewilding’ but shared some similar aspects. From the 1970s, species such as geese colonised the area, whilst from the 1980s Heck cattle and Konick horses were introduced as replacements for extinct browsing herbivores (animals that feed on high-growing, generally woody plants such as shrubs). This was followed later by red deer and foxes, whose populations were then allowed to fluctuate naturally.

There have been recent controversies over animal welfare at this site, a situation described as “ecologically and ethically untenable” (Kopnina et al., 2019). Animal starvation and suffering occurs, to some extent, in all natural systems, but watching the suffering of animals is not attractive and has generated public protests in recent years. This has prompted a shift to a more interventionist management regime.

Notwithstanding these controversies, this project has inspired many with an interest in nature and rewilding, helped by the 2013 film [De nieuwe wildernis](#). Visitor access has been facilitated in certain locations, but with no permanent human habitation or extractive uses allowed. Over the years it has attracted much ecotourism, and it is advertised on the Dutch Tourism website.

The State Forestry’s [website on Oostvaardersplassen](#) is not available in English but various academic and media analyses of Oostvaardersplassen are available online (including in Kopnina et al., 2019; Vera, 2009; Weston, 2022).

Box 2 describes Oostvaardersplassen, a famous example, whose work started in the 1970s and which now uses the rewilding label. The work in Oostvaardersplassen was relatively ecocentric in its focus, with human benefit framed mostly in terms of tourism and visitor inspiration. Other European rewilding initiatives that have started more recently have often tended to plan more human involvement and/or benefits. For example, in the same country, the [Gelderse Poort](#) river restoration project – planned with guidance by the leaders of Rewilding Europe – describes itself as reducing flood risks and providing enhanced ‘quality of life’ for local residents.

The example of Oostvaardersplassen helped stimulate the creation of the NGO ‘[Rewilding Europe](#)’ in 2011, which has a mission to make Europe a

'wilder place', with “more space for wildlife and natural processes”. This organisation operates out of the Netherlands but is linked to 10 ‘large’ landscape rewilding initiatives across Europe, including one in Scotland (see Figure 1). They do not provide a single definition, but provide a set of principles, summarised in Box 3 on the next page. Rather than providing strict criteria in scientific language, the wording reflects a desire to engage and inspire, particularly appearing to promote intellectual freedom and emotional benefits – for example that rewilding can provide ‘hope’, and ‘thinking creatively’ is needed. Their practices and communication material appear to strongly emphasise the return of charismatic wildlife⁸ – mostly herbivores, but also some carnivores such as wolves and lynx (see Figure 1).

The European Commission does not provide any official guidance on rewilding. A review of member states’ positions, if any, is beyond the scope of this report, but (Jones & Comfort, 2020) have observed that there is a general lack of statutory guidance, with rewilding advocacy groups therefore being the main voice in communication on this subject. In 2022, the European Commission proposed legally binding targets for EU nature restoration. Details of this proposed “Restoration Law” may still change⁹, but when adopted it is expected to create significant obligations on its members states, to improve both the condition and extent of degraded habitats. This may drive more attention to and resources for rewilding across Europe. However, it is notable that the language and framing of this law is restoration, and rewilding is not mentioned once.

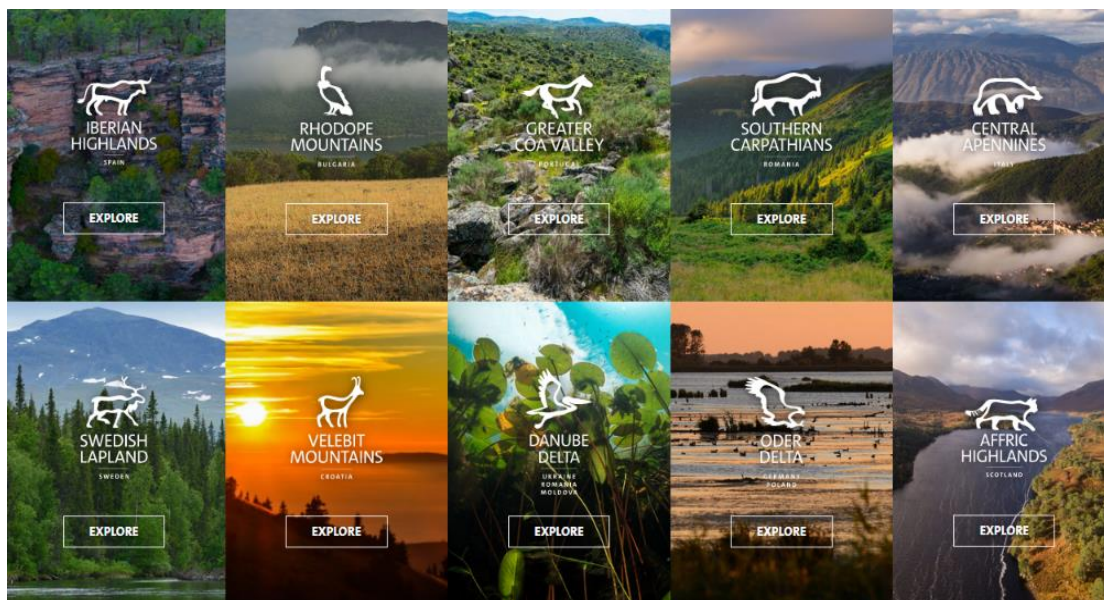


Figure 1 A screenshot of the initiatives supported by Rewilding Europe
<https://rewildingeuropa.com/landscapes/>

⁸ Charismatic animals are those deemed beautiful, impressive, or endangered (Albert et al., 2018).

⁹ This [European Parliament webpage](#) provides details of the proposed Nature Restoration Law.

Box 3. Summary of principles for rewilding by the European rewilding network

- Providing hope and purpose
- Offering natural solutions and thinking creatively
- The ecosphere is based on relationships
- Letting nature lead
- Complimentary conservation/protecting the best, rewilding the rest
- Working at nature's scale
- Long-term focus/taking the long view
- Building nature-based economies
- Recalling ecological history and acting in context
- Evidence-based adaptive management
- Seek public/private collaboration
- Working together for the good of ourselves and nature

Source: Table 1, Jepson (2022)

[Rewilding Principles](#) (Rewilding Europe)

Rewilding discourse and practices in the UK

There are several initiatives across the UK that have been described as 'rewilding'. These include Wild Ennerdale, the Cambrian Wildwood, the Carrifan Wildwood and Knepp estate. These initiatives cover a range of practices, and also vary in how far local communities or other groups are able to be involved in or benefit from the initiatives.

Within the UK, rewilding practices have evolved in connection with European practices, although the typical scale of interventions has been much smaller (Jones & Comfort, 2020). The NGO '[Rewilding Britain](#)' was set up in 2015 with plans to establish at least three major 'pilot projects', to demonstrate workable models. However, at that point there were few rewilding projects underway and little evidence on their consequences (Wentworth & Alison, 2016). In the absence of explicit, purposeful rewilding projects, Rewilding Britain identified several projects across the UK as having 'elements' of rewilding, including: Wild Ennerdale, in the Lake District; the Cambrian Wildwood, in mid to west Wales; and the Carrifan Wildwood in the Scottish Borders. These are described in Box 4.

Box 4. Examples of rewilding in the UK

The [Cambrian Wildwood](#) in mid-Wales is run by a small charity, with a vision of restoring natural habitats and reinstating native animals ranging from red squirrels to, eventually, wild boar. It has included significant efforts to connect and respond to local communities and cultures. It has been studied by Wynne-Jones et al. (2018), whose work highlights how different groups in society may relate differently to rewilding. Urban residents have generally reported positive views of the initiative, but many rural residents and especially sheep farmers objected, feeling that their identity and livelihoods could be threatened.

Another example is the [Wild Ennerdale project](#) in the English Lake District. This is a partnership venture between the public sector, a large NGO and United Utilities. Since 2003 some major management changes – principally reduced sheep grazing, diversified tree planting and river restoration – have led to recolonisation by many terrestrial and aquatic species. This relatively remote valley has produced many gains for biodiversity and ecosystem recovery, but is not a vision embraced by all people living and working in the Lake District (Convery & Dutson, 2012).

Rewilding is often associated with large, sparsely populated upland areas but the [Knepp project](#) in West Sussex, which started about two decades ago, offers a contrasting example of carrying out rewilding in a lowland area, on what had been a mixed farm (Tree, 2017; Weston, 2022). Knepp Estate's owners now describe themselves as 'rewilding pioneers', with the site hosting a variety of rare species, whilst providing a variety of recreational opportunities. Species have been introduced to replace extinct prehistoric herbivores, including: longhorn cattle, Tamworth pigs, Exmoor ponies, and red and fallow deer. The owners describe this type of land management as more economically viable, due to lower management costs and more tourism benefits, than when it was run as a farm. It is also described as offering opportunities to reflect on human relationships with nature (Overend & Lorimer, 2018). The site illustrates the idea of trying to introduce wildness but not to restore the ecosystem that existed at a particular point in time. It still involves some degree of intervention or control, and its owners expect that this will always be the case (Dempsey, 2021).

Rewilding is often – though not always – associated with large, sparsely populated upland landscapes. These offer relatively large areas for intervention, whilst also sustaining relatively few profitable land management options (mainly upland hill farming or game-keeping) which are influenced by policy priorities and subsidies. In these settings, rewilding may offer more diverse economic opportunities than existing uses of land that are focused on farming and/or game-keeping. However, for existing beneficiaries of those activities – and for those attached to the landscapes associated with them – rewilding can feel linked to rural decline or land abandonment. Lack of control

can also in itself feel threatening (Dempsey, 2021). Previous approaches to land and nature management have been shaped by ‘modernist’ expectations of rational prediction and control that are engrained within western culture (for example, Adams, 1997). Accepting limited agency over natural processes is not a small challenge, especially given that unintended consequences – ranging from increased risk of carnivore attacks through to altered flood regimes – may not be socially accepted.

There have been attempts to modify communication and practices to respond to these concerns, by softening and altering the rewilding vision (even at the risk of antagonising those passionate rewilding advocates who follow a ‘purer’ vision of wilding). As such, Wynne-Jones et al. (2020) judged the version of rewilding emerging in Britain as trying to move beyond “*binary divisions of nature and culture*”. However, the relative newness of Knepp estate and other rewilding initiatives in the UK means that definitions and practices are far from stable or unified.

Those who describe themselves as environmental experts and professionals recognise and are reacting to this fluidity. A position paper on rewilding has been issued by the Chartered Institute of Ecology and Environmental Management (CIEEM England Policy Group, 2020). CIEEM describes itself as the professional membership body for ecologists and environmental managers. Its England Policy group defines rewilding as “*a form of ecological management which aims to allow for recovery by restoring natural processes and then the natural succession of habitats and species to occur*” (CIEEM England Policy Group, 2020). They view rewilding as part of a wider “conservation toolkit” for use alongside traditional nature management techniques, which is expected to lead to more “hands off” approaches than other techniques. The group further recommends that the approach for any site is developed only after an Ecological Impact Assessment¹⁰ and “*according to a strategic plan*”. We are not aware that CIEEM as a whole, nor its Scottish National Section, have debated or endorsed a similar position.

Rewilding in the UK public sector outside of Scotland

The UK administrations generally do not use the term ‘rewilding’; instead using terms such as nature restoration or recovery and regeneration. For example, England and Wales have produced Nature Recovery Plans. There is no notable use of the term elsewhere in the UK public sector, however related ideas are conveyed by the use of terms and phrases such as ‘restoration’ and ‘reinstating natural processes’.

Across the UK, public sector organisations make little or no reference to rewilding. In 2016, a policy briefing for the UK Parliament (Wentworth &

¹⁰ An Environmental Impact Assessment (EIA) is a means of drawing together, in a systematic way, an assessment of the likely significant environmental effects arising from a proposed development. The [Scottish Government’s EIA webpage](#) provides more information.

Alison, 2016) stated that no UK policy references rewilding, and 7 years later we do not believe this has changed – though as we note in the following section, there have been recent references by NatureScot and the Cairngorms National Park Authority (CNPA).

Rewilding is not in the formal text of any policy, so not a direct subject of concern for the UK-level or devolved level statutory agencies linked to environment and nature management. For example, England has committed to establish a '[Nature Recovery Network](#)' which, amongst other goals, aims to provide "*restored wildlife-rich habitats, corridors and stepping stones*", and is generally framed in terms of landscape and natural resilience rather than biodiversity, and does not use the term rewilding. In early 2023 Natural England set up a '[Species Reintroduction Task Force](#)', to advise government on existing and potential species translocations, but without explicit reference to rewilding.

Instead, references to nature restoration or recovery are more common, or regeneration in urban areas. Both the [English](#) and [Welsh](#) governments have Nature Recovery Plans which frequently reference 'restoration' in relation to specific degraded habitats. This is true in more informal communications as well as formal statements and commitments. For example, a January 2023 blog post, by Natural England's CEO (Juniper, 2023), discusses '*A resolution to restore*' arising from the United Nations Biodiversity Conference (COP15) in December 2022.

The 2016 briefing for the UK parliament did not provide a single definition of rewilding but focused on "reinstating natural processes". It was felt this could positively complement some existing conservation practices – similar to the CIEEM position of rewilding as part of a toolkit, outlined above. It was seen to potentially offer a low cost approach to delivering some biodiversity goals and ecosystem services, such as flood prevention, carbon storage and recreation. However, for a few specific settings – for example in chalk grassland, where a specific grazing and cutting regime is recommended – it was judged inappropriate, and there were also concerns about animal welfare and existing land users.

Rewilding discourse and practices in Scotland

This section describes Scottish environmental NGOs' use of the term 'rewilding', rewilding initiatives occurring in Scotland, and, briefly, media discourse. We find that rewilding is not a term used by many environmental non-governmental organisations (eNGOs), though a few are oriented around it or refer to it. For those that do refer to it, emphasising benefits to people and communities is important. Proponents of rewilding also refer to these benefits, sometimes defensively. Tensions around community engagement and the ambiguity of rewilding are evident in the Scottish media, shaping rewilding descriptions and claims.

This section focuses on the use of the term 'rewilding' in Scotland, before considering its use specifically by the public sector in Scotland.

The position of environmental Non-Government Organisations

Firstly, some conservation and environmental non-governmental organisations (eNGOs) in Scotland do reference rewilding but it is far from a unifying or common term. [Scottish Environment Link](#) is the forum for Scotland's voluntary environment community, representing over 40 NGOs. It defines and uses the term 'restoration' Scotlink (2022), but does not appear to mention rewilding. Similarly, some of the major eNGOs such as Royal Society for the Protection of Birds (RSPB) Scotland and the National Trust for Scotland do not mention rewilding. The main references to rewilding by the long-established eNGOs are by the [Scottish Wildlife Trust](#), and the [John Muir Trust](#). References to rewilding by these organisations highlight people as part of rewilding, and the societal benefits it can deliver (see Box 5 for more information).

Although major eNGOs have not widely adopted the term, many of these organisations do carry out or support work with similar aims, often labelled in terms of restoration. For example, Jones and Comfort (2020) describe how the partnership [Cairngorms Connect](#), whilst not framed primarily in terms of rewilding, has a focus on restoring long-term ecological processes. Additionally, professionals and ecological experts – some of whom may be employed by these NGOs – recognise the term as relevant, as seven years ago it was discussed by part of the British Ecological Society (BES Scottish Policy Group, 2016). The record of this debate stated that the main difference between rewilding and restoration, is that restoration sets out to achieve an end, whereas with rewilding there is no defined end point, which presents a challenge for management, policy support and community involvement. Since then, there has been no further development of a definition or guidance on its use by this group.

Box 5. References to rewilding by Scottish eNGOs

[The Scottish Wildlife Trust](#)

Rewilding is not central to how the Scottish Wildlife Trust (SWT) describes its work and mission, but is mentioned in several places on its website, and is used as a tag to categorise articles and webpages, for example on beaver reintroductions. A review of these articles suggest it is associated with beaver reintroductions, flood plain restoration and a few specific sites. Nearly ten years ago, a speech by its former Chief Executive Jonny Hughes defined rewilding as restoring ecosystem health for healthy and resilient ecosystems whilst generating socio-economic benefits for local communities (Hughes, 2014). Hughes stated that he was comfortable using the term rewilding to refer to ecosystem restoration and the reintroduction of keystone species, as long as “there is a place for people” (Hughes, 2014). Not only were people central to this conceptualisation, but rewilding was explicitly argued to be compatible with current economic systems, if urbanisation and technological developments in food production led to natural decline in agricultural land use.

[The John Muir Trust](#)

The John Muir Trust (JMT) describes itself as ‘a leading voice for the UK’s wild places’ and provides a definition of rewilding as “inspiring and engaging people to restore natural processes” (John Muir Trust, 2015). Its text not only highlights ecosystem restoration but the role of people in working for it, and also the reintroduction of former native species. In their recent [Rewilding Position Statement](#) (John Muir Trust, 2023) they state they prefer to use terms such as “repair”, “restore” and “protect” rather than rewilding. It emphasises a non-interventionist goal, in other words protecting and restoring the land to a point at which it will be able to self-repair; after which natural processes take over. Acknowledging that tensions could exist with agricultural land use, the position statement states rewilding is not suitable for areas such as ‘prime agricultural land’ but that nature-friendly farming is possible. They state that rewilding can and should be compatible with job creation, nature-based tourism, education and health and well-being.

In the last three decades, some smaller specialist eNGOs have been set up to promote rewilding. Perhaps the earliest organisation to explicitly adopt the term is Trees for Life, which was established in 1993 to achieve “*a revitalised wild forest in the Scottish Highlands, providing space for wildlife to flourish and communities to thrive*”. Human activity is accepted by this organisation “*as part of an intricate system in which everything is connected*” (Carver & Convery, 2021; Trees for Life, 2023). The organisation’s website emphasises the need for people to “enable”, “gain from” and “enjoy” rewilding. As their name suggests, the organisation’s aims are strongly associated with tree-

planting, especially to save and extend caledonian pinewood remnants, but they have also been discussing proposals to reintroduce beavers, red squirrels and lynx.

This and some other eNGOs – and private sector organisations as discussed below – are part of a [Scottish Rewilding Alliance](#) and often also closely connected with Rewilding Europe. It is notable that some organisations such as the RSPB are in the Rewilding Alliance, even though they do not prominently use rewilding in their own communication and presentation of work. The Alliance has, again, a vision of rewilding that is inclusive of people and especially local communities: *“Our goal is a flourishing ecosystem, supporting self-sustaining nature-based economies which secure a future for local communities”*.

These networks help to motivate influence and communicate visions of rewilding. For example, Trees for Life has launched the [‘Affric Highlands’](#) initiative, which centres on working with local landowners and communities to restore Caledonian pinewood. This is featured on the Rewilding Europe webpages. Specific activities range from tree-planting to peatland and riparian (river bank) restoration. The aims of the Affric Highlands Project are defined as *“restoring native woodland and peatland and improving wildlife habitats, while providing economic and community benefits”* (Ross, 2021). This is matched by pictures that accompany the project description by Rewilding Europe; whilst the first shows an imagined landscape filled with animals, further down the page is a photo of people walking through woodland. Additional work to make rewilding more prominent comes from [Scotland: The Big Picture](#). This organisation was set up in 2008 and is wholly focused on advocacy and communication about rewilding. It defines rewilding as *“an evolving process of nature recovery that leads to restored ecosystem health, function and completeness”*. Rewilding is framed as an approach vital to tackling climate change and biodiversity loss, but the organisation also states that rewilding will present *“new opportunities for sustainable business, strong communities and public wellbeing”*. Thus, there is active work to develop and share visions of rewilding, driving public familiarity with the term, even if many ecologists and environmental groups prefer not to use the term.

Rewilding led by private individuals and companies

NGO-led initiatives such as Affric Highlands are perhaps the exception rather than the rule: many ‘rewilding’-titled initiatives in Scotland are driven by site and estate managers in tandem with, or in connection with, new interest groups and companies.

Nearly all these rewilding initiatives, regardless of who they are led by, emphasise benefits for people, though this ranges from indistinct references to benefiting the public, through to more direct benefits for local people. For example, the Chief Executive of Trees for Life, Steve Mickelwright, stated in a 2021 interview that the Highlands have a huge potential to help nature to return and *“so help people thrive”* (Ross, 2021b). The vision for the Bunloit

Estate – part of Highlands Rewilding as described below - includes both “*rewilding and repopulation*” (Ross, 2021a), through building new homes and businesses. Few proponents of rewilding go so far as promising development of buildings or infrastructure: if achieved this will be quite distinct.

The recent creation in 2019 of Highlands Rewilding presents a vision of rewilding purposively oriented to be compatible with financial markets. As a for-profit organisation, the organisation’s work is intended to be financially self-sustaining, principally achieved by the sale of carbon credits. Highlands Rewilding’s vision is to “*rewild and repeople*” the Scottish Highlands, to be achieved by increasing carbon sequestration, growing biodiversity and creating green new jobs. They describe rewilding as “*a progressive approach to nature conservation that revitalises forest, peatlands and pastures, providing space for wildlife and flora to flourish and communities to thrive*” (Lloyd, 2023). Community involvement, ethically profitable land management, innovative financing and land reform are areas central to the organisation’s conceptualisation of rewilding. Crowd-funding supported by extensive media campaigning, as well as private investments, have enabled them to buy two sites, at Bunloit and Beldorney, with the purchase of a third site – Tayvallich Estate in Argyll – currently underway.

Other initiatives may rely more on tourism for financial viability and human benefit. For example, the 100 square kilometre [Alladale estate](#) in the Scottish Highlands is described as being managed by a private land owner whose vision is of repopulating the area with forests, vegetation and wild animals. Its website describes providing accommodation to enable visitors to “*reconnect with nature*”. Its owner reportedly sees the reintroduction of wolves to Britain as a “*duty*”, stating that they would improve biodiversity, balance the ecosystem and increase tourism. This vision of wildness focuses on humans in terms of reinvigorating human relationships with nature.

Media discourse on rewilding in Scotland

Articles in Scottish newspapers and social media commentary both reflect on and help publicise these and other land management practices associated with rewilding. Many have pointed out the potential conflicts with local community needs or interests. The downsides may seem particularly obvious where carnivore reintroduction may be sought (as in Alladale) but initiatives with apparently ‘softer’ visions have also been criticised as examples of ‘green lairds’, since they do not fully involve and empower communities. Highlands Rewilding’s land purchases have been subject to particular scrutiny (for example, Thomson, 2023). Views vary both within and beyond communities local to its purchases: some celebrate public benefits and opportunities for local community involvement, whilst others are unhappy with anything not completely community-led.

This media discourse also highlights – and potentially reinforces – the sense of flexibility or ambiguity associated with the term. For example one article that references rewilding in a Scottish context states that the definition of

rewilding is “*elusive*”, and describes rewilding practices as ranging from the reintroduction of extinct megafauna, to planting wildflowers on city roundabouts (Dodds, 2021). However, it is also important to note that some sites are labelled as examples of ‘rewilding’ by the media, even if site or estate managers do not use the term, instead describing themselves in terms of working for regeneration, restoration or preservation. For example, the Glenfeshie estate featured heavily in Dodds (2021) and has similar sounding aims to some self-proclaimed rewilding initiatives, but as of March 2023 its website describes its activities in terms of regeneration without mentioning rewilding (Glenfeshie, 2021). In other cases, project and site managers may be doing similar things but without the rewilding label being applied to them.

What is shared by all of these initiatives is the aim of granting nature more autonomy, to some extent. That said, this is sometimes coupled with attempts to measure and quantify it, to help demonstrate or even monetise its benefits. For example, the [Natural Capital Laboratory](#) set up at Birchfield near Loch Ness, is intended to help develop monitoring methods and evidence to understand and demonstrate landscape change. Measurement and monitoring are often associated with a culture of control (Waylen & Blackstock, 2017). This approach to predicting – and potentially trading – aspects of the ecosystem functions is notable if rewilding is understood as reinvigorating nature’s autonomy and unpredictability.

So, rewilding is not necessarily a straightforward vision to promote and achieve. Firstly, the mix of activities and justifications by such initiatives present an “*awkward juxtaposition*” (Wynne-Jones et al., 2020). For example, claims or efforts that rewilding supports direct benefits for people and/or is compatible with economic development or markets may be in tension with other motivations for and visions of rewilding. Secondly, rewilding generates controversy, perhaps more due to concerns of exclusionary control of land, though concerns over reintroduced species may also play a part. Its proponents may experience personal discomfort in publicly defending and negotiating their visions. Communities and also other land managers may oppose or contest rewilding (Dolton-Thornton, 2021).

Rewilding is still a young concept, and the few practical initiatives we have are relatively new. Martin (2021a) has noted an increasing rhetorical trend to link rewilding with people – even re-peopling – but she questions the practical consequences, if any, for how sites are managed. Recently she has pointed out that practices of community engagement are variable and face a number of barriers. These barriers relate to rewilders’ non-negotiable commitments to conservation goals, patterns of land ownership and questions over public versus local interest (Martin et al., 2023). An important question for the future will be to examine the extent to which this community engagement rhetoric is reflected by practice.

In summary, in Scotland we now see a range of initiatives, that vary both in how they label themselves, what they seek to achieve, and how actively they seek to engage or influence a wider media discourse. To summarise:

- Rewilding is not a dominant concept for eNGOs who have traditionally been associated with conservation and environmental management; but is a motivating vision for some private site owners, who share a commitment to re-enabling nature's autonomy, to varying extents.
- The potential societal benefits and involvement of people are increasingly emphasised – again, to varying extents, but sometimes extending even to repopulating areas of land and providing new built infrastructure.
- Reintroductions of animals are a less prominent or publicised part of rewilding visions.
- The extent to which the process and outcomes of rewilding initiatives will deliver against the claims made by those managing them is as yet unproven, as most are very new.

References to rewilding in Scotland's public sector

For the most part, 'rewilding' is not a term used by Scotland's public sector. This section outlines a limited number of references to rewilding, including by NatureScot and the Cairngorms National Park Authority, with both organisations keen to emphasise human involvement with rewilding processes. Across other Scottish public sector organisations, it is more common to refer to terms such as 'restoration' and also 'regeneration'.

In this section we first describe where and how rewilding has been referred to by the Scottish public sector, before briefly reviewing the use of related terms, such as 'restoration' and also 'regeneration'.

[NatureScot](#) appears to be the only public sector organisation in Scotland that provides a definition of rewilding. The most prominent and expansive discussion of rewilding is in NatureScot's recent report 'Case Studies in Large Scale Nature Restoration and Rewilding' (Underwood, 2022). This report defines rewilding as a "*long-term aim*" to increase or maintain biodiversity, in conjunction with decreasing human impacts through species restoration and ecological processes (Underwood, 2022). The report emphasises the idea that some level of human intervention is essential to fix human-made ecosystem breakdown. The definition is accompanied by a brief history of the term, from its roots in America using the '3Cs' – core areas, corridors and carnivores - to the scepticism that has arisen due to a prevalent association of rewilding with displacement of people. However, it is recognised that this scepticism exists in duality with the assumption that harmony between humans and nature can and will exist. The report reflects concerns about rewilding, stating that it is a 'controversial' term and acknowledging the view,

held by some, that it has “*lost its original meaning*” (Underwood, 2022). This report also defines ‘restoration’ as a similar, more established concept.

There are also some NatureScot webpages that refer to rewilding. These include a press release for a ‘rewilding centre’ (NatureScot, 2020a), a project update on ‘community rewilding’ (NatureScot, 2020b) and professional advice on landscape-scale nature restoration (NatureScot, 2023) that mentions rewilding whilst strongly emphasising the benefits to individuals and communities. A reoccurring theme is connecting people with nature in such a way that improves their quality of life; specifically by involving people in rewilding, empowering communities to rebuild nature locally, and job creation especially through an increase in tourism (NatureScot, 2020a).

The [Cairngorms National Park Authority](#) (CNPA) has a [2019-2024 park plan](#) that stresses that rewilding has many definitions and holds different meanings for different people (CNPA, 2019). The document characterises rewilding as a process which bring benefits to people and wildlife and ‘*allows natural processes to flourish alongside productive land management*’ (CNPA, 2019 pg 10). Its conceptualisation appears more explicitly anthropocentric (people-centred), highlighting that rewilding is an activity that benefits people, at a local level as well as on a larger scale. It also emphasises ideas and approaches including the building of “*nature-based economies*” that will support “*resilient communities*”. The plan includes several examples of the Authority’s aims, which they classify as rewilding, including ‘*more sustainable land management, species recovery*’ and ‘*re-connecting people with nature*’.

The term rewilding is also mentioned within a Trees for Life case study on the [Highland and Islands Enterprise](#) website (HIE, 2023). In this case, rewilding is associated with the creation of green jobs and a centre is being built with the purpose of community engagement. Within these sources there is an emphasis on managing nature both with and for society. This may be considered consistent with the idea of ‘nature-based solutions’, a term which is sometimes used by the same organisations, for example CNPA (2021)¹¹, through not always explicitly connected to restoration. A NatureScot webpage links green infrastructure with rewilding, stating that community events to create green infrastructure, such as path improvements or tree-planting, can give people the skills and confidence to rewild their own communities (NatureScot, 2020b).

Policies focused on Scotland’s heritage, and [Historic Environment Scotland](#), do not refer to rewilding. The Historic Environment Policy for Scotland (Historic Environment Scotland, 2019) as well as the Scottish Historic

¹¹ A full discussion of Nature Based Solutions is beyond the scope of this review, but they are relatively-well accepted and internationally-recognised concept in nature management, supported in Scotland. They are defined in the Cairngorms National Park Partnership Plan 2022-27 as ‘*actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefits*’ (CNPA, 2022 pg 94).

Environment Forum (2016) highlight landscapes as “living history” whose built and natural features provide a range of tangible and intangible values for Scotland’s society and economy. These indicate that any landscape management initiatives, however framed, should take into the account the legacy and ongoing values arising from human activities in landscapes.

Restoration is a more commonly used term within the public sector in Scotland. For example, in the draft [Scottish Biodiversity Strategy](#), circulated for consultation last year (Scottish Government, 2022c), restoration – of nature, peatlands and/or habitats – is mentioned nine times, but rewilding not at all. Similarly, there were multiple references to ‘nature restoration’ in the Scottish Government’s consultation paper on ‘[Land Reform in a Net Zero Nation](#)’ with no mention of rewilding (Scottish Government, 2022a). In August 2022 the Scottish Government and NatureScot published the latest round of the “[Nature Restoration Fund](#)” (Scottish Government, 2022b), launching a new round of initiatives that will use this label in future years.

NatureScot clearly defines restoration as “a process of assisting the recovery of ecosystems that have been degraded, damaged or destroyed” (Underwood, 2022 pg 19). Both in this source and in a related webpage (NatureScot, 2023) rewilding is framed as a branch of restoration, with ‘ecosystem regeneration’ as the expected outcome. The terms are used rather interchangeably, but with restoration favoured. The [Loch Lomond and the Trossachs National Park Authority](#) (LLTNPA) and Cairngorms National Park Authority also commonly refer to restoration, especially of peatlands, woodlands, and waterbodies (CNPA, 2021; LLTNP, 2022). In their [Future Nature Routemap](#), the Loch Lomond and the Trossachs National Park Authority state that they prefer to use restoration for what some might call rewilding, to ensure there is no doubt over ‘the importance and role of people in the landscape’ (LLTNPA, 2023).

The concept of regeneration seems more notable than restoration for the [Scottish Environment Protection Agency](#) (SEPA), which has a ‘Regenerative Routemap 2022-2024’, which sets out their intentions to achieve net zero and regenerative actions to repair the environment (Badger & Deasley, 2022). Restoration is less prominent on SEPA’s webpage and materials, due to its differing focus, though it is mentioned in relation to river corridor restoration (SEPA, Undated), reflecting the language and concepts of water ecology and the Water Framework Directive (for example, SEPA, 2021). Where ‘restoration’ is used, the benefits that nature restoration will offer to public well-being are again highlighted.

In summary, the Scottish public sector makes little reference to rewilding, but where it is used it there has been a distinct effort to emphasise the centrality of human communities and individuals in the process of rewilding. In this sense, its use of the term is broadly in line with established definitions, including that provided by the International Union for the Conservation of Nature (see Chapter 3). In contrast to ‘rewilding’, ‘restoration’ is more visibly

endorsed and supported by the public sector in Scotland, at least those branches focused on designing and implementing environmental policy. This is presumably because restoration (and other terms such as regeneration), lack the connotations of human exclusion that rewilding can create.

We note a number of academics and commentators have recommended policy areas that could be adapted to help support rewilding (see Box 6).

Summary of evidence review findings

1. Rewilding is contested within and beyond academia. There is debate between its proponents on its definition, though they agree that it aims to achieve autonomous natural processes. The number of definitions is itself critiqued for making the concept practically useless. There are also debates triggered by concerns that it tends to exclude or cause risks for people, especially in communities local to rewilding initiatives.
2. In recognition of these debates, a Rewilding Thematic Group was set up by the International Union for Nature Conservation. It has recently proposed a definition and ten principles to guide rewilding, which offer a useful reference point. In Europe, the European Rewilding Network portrays rewilding as a 'pragmatic' endeavour, in which people cannot and should not be excluded.
3. In the last decade some site owners across the UK and in Scotland have labelled their management philosophy in terms of rewilding, often linked with the European Rewilding Network. These are often, but not always, in upland areas, and nearly always emphasise some sort of human benefit, varying from inspiration through to tangible financial benefits. However, in Scotland (as for other UK administrations) rewilding is a term rarely used by the public sector. Nor is it used by most non-governmental organisations concerned with nature conservation or the environment. So far, most initiatives are in their early stages and so there is not yet much evidence of their effects.

Box 6. Commentary on supporting rewilding through public policy

Academics and other commentators have suggested priority policy areas to change in order to support and enable rewilding. Many but not all of these commentators have focused on UK-level policy. Their points highlight: the relevance of nature conservation and environmental policies; agricultural policy; Scotland's Land Use Strategy; and inheritance tax rules. They also suggest that existing strategic planning supported by policy can offer learning about how to agree visions and pathways to rewilding in specific landscapes.

Over 10 years ago, Brown et al. (2011) advocated for the formal adoption of rewilding as “one aim of environmental policy”, noting that “wild land” was already recognised by both Scottish Government policy and eNGOs. Jepson (2022) recommended that environmental policy – and institutions more generally – should innovate to allow for nature recovery, moving away from ‘defensive’ approaches that are focused on the protection of designated species and sites.

In an overview of policy changes, Pettoirelli et al. (2018) agree that nature conservation policies are too statically focused on endangered species and habitats, and that a review of agriculture and land-use policies presents an opportunity to support rewilding. A discussion within the British Ecological Society (BES Scottish Policy Group, 2016) suggested that “rewilding could be incorporated into something based on the general principles of the LUS [Land Use Strategy], [especially] if the latter was being used to investigate what was feasible at different scales”. In a review of rewilding in England, Sandom (2018) identified agricultural policy and conservation policy as potential barriers to rewilding. Sandom also identified Inheritance Tax Relief for land used for agriculture but not other purposes as a further barrier – an issue which also applies in Scotland.

Schulte to Bühne et al. (2022) points out that interpretations of different versions of rewilding – for example the degree of human involvement expected, the space needed, has implications for precisely what is trying to be achieved, and so appropriate policy support. MacMillan (2020) suggests that strategic planning with local stakeholders – what he calls ‘indicative rewilding strategies’, inspired by Indicative Forestry Strategies – may help identify the potential and pathways for rewilding in particular places.

Most of these recommendations focus on how policy can support rewilding, rather than vice versa. However, as Jepson (2022) points out, reinvigorating natural processes may be key to maintaining and improving nature's resilience in the face of climate change and other pressures; which is essential to achieve broad conservation aims and also ecosystem services that are vital for society.

4. Workshop: main findings

This section focuses on the themes and findings of an online deliberative workshop with public sector representatives held in April 2023. The workshop focused on discussing and defining rewilding for Scotland's public sector. The main findings were: the work by the IUCN CEM Rewilding Thematic Group is useful but some adaptation is required for Scotland's public sector; communication on rewilding can be challenging with different societal groups; and it will be useful to give more attention to how rewilding relates to existing terms and policy processes.

The main themes discussed in the workshop are outlined below.

Suitability of the International Union for Nature Conservation's (IUCN) Rewilding Thematic Group's definition of rewilding for Scotland

There was general cautious interest in the work and outputs of the IUCN Rewilding Thematic Group (RTG) work, but not unanimous support. In summary, the RTG definition was seen to need adaptation, whilst its principles to guide rewilding were supported but seen as requiring strengthened attention to social issues.

Figure 2 shows the results of a poll given to participants early in the workshop, after they had heard the presentation of the RTG's work by its co-chairs. During the discussion that followed, attendees identified several concerns or ideas for how a definition might be made more suitable for Scotland.

The group accepted the definition's emphasis on restoring the autonomy of ecological processes – what one participant referred to as '*managed demanaging*'. However, several attendees felt that the definition and principles could be strengthened. There were two main areas of concern: attention to social issues, and attention to

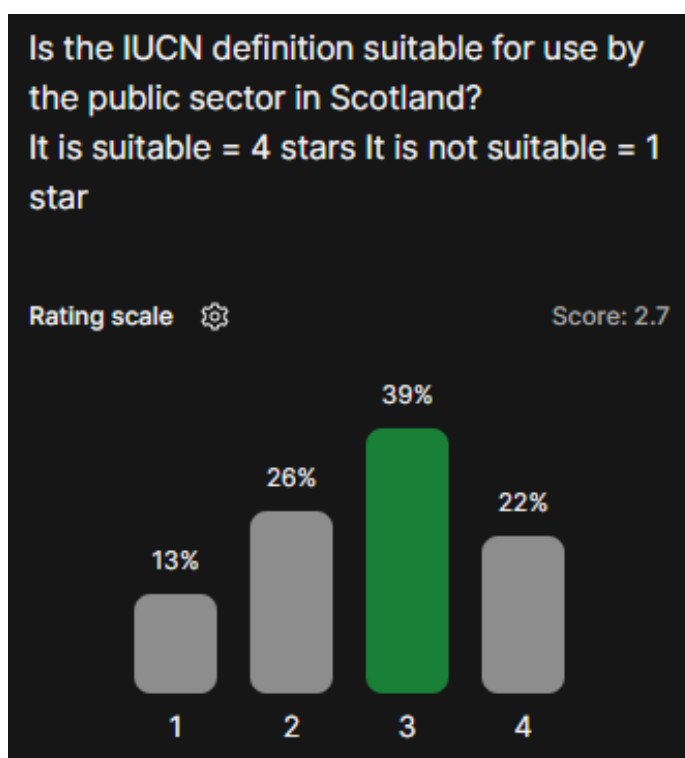


Figure 2 Workshop participants' ratings of the suitability of the IUCN Rewilding Thematic Group's definition of rewilding for the public sector in Scotland.

accessibility. These are described below.

- Firstly, several participants strongly felt there was a need to strengthen attention to social aspects and issues. This point was made both by some of the academic experts and by some of the participants who work with rural communities, land-managers, and other stakeholder groups. The principles offered by the RTG do acknowledge the need to work with people and consider society. However, a few participants felt attention to these issues was relatively 'superficial', i.e. in not fully reflecting opportunities for empowerment, and so recommended more attention and prioritisation. Rewilding proposals that seek to truly engage with, empower and benefit local communities or other stakeholder groups require commitment, and may encounter tensions and challenge visions of rewilding in ways that are not easily resolved. One participant noted that other IUCN-related work, for example on Nature-Based Solutions, was more convincingly felt to reflect issues of rights and justice. This is an important point in the context of Scotland's goal for a [Just Transition](#), and long-standing concerns around access and rights to land (for example, Warren, 2002). Other participants noted that Scotland already has its own commitments and guidance that relate to working for society, and especially for working with local communities. These apply to rewilding, as for any approach to land and landscape management.
- Secondly, several workshop participants suggested that the language of the IUCN Rewilding Thematic Group's definition may not be accessible to non-specialist audiences, for example as it uses several scientific terms such as 'trophic' and 'biota'. This point was made both by those who have contact with rural communities and other stakeholder groups, and also by those participants whose own backgrounds did not involve specialist environmental science training. This was agreed to be an important point for a definition that should be used and understood by individuals who do not have specialist ecological backgrounds. Additionally, those who worked with rural communities identified that some of the language within the RTG definition could be emotive and potentially provocative to some groups. Any use of the term rewilding is likely to inspire different reactions amongst different members of the public, ranging from inspiration and interest through to fear or hostility. It may be inevitable that the term 'rewilding' is associated with certain ideas, but any definition should not add to its controversy, as this prevents constructive communication.

It may therefore be useful to propose a specific definition for use in Scotland that is written in more accessible language, and that also places a greater emphasis on social issues. It was recommended that any use of the term in Scotland should allow opportunities for society to benefit from rewilding, and it should be clear that rewilding does not automatically preclude human presence in landscapes.

Two additional recommendations were made, to inform a definition:

- Firstly, any adjustments or new definitions should be confident, rather than defensive or apologetic. One participant suggested this, and several agreed. A useful definition of rewilding was felt to be one that asserted and bounded the possibility of rewilding, to inspire and guide action, without highlighting and encouraging debates over the more controversial aspects of rewilding.
- Secondly, several participants noted that Scotland already has commitments to working with and for communities affected by land management, especially under the [Land Reform Act](#) and [Land Use Strategy](#). These commitments and their supporting guidance, such as the [Scotland's Land Rights and Responsibilities Statement](#), should be referred to, and should not be duplicated in any new definitions or guidance on rewilding.

What other terms are seen as related or useful?

Workshop participants referenced several related and useful terms, including: 'restoration', 'regeneration', and the idea of 'enhancing' nature. These terms were felt to be useful, and to share rewilding's emphasis on encouraging and strengthening natural processes. They do not have the potentially provocative connotations of 'rewilding' noted above, which can complicate communication with some members of the public.

One participant noted that for most people the term 'wilderness' implies the absence of people and infrastructure, so can implicitly seem quite negative, or focused on emptiness. By comparison, these other terms may be more positive. For example, regeneration is associated with regenerative farming and agricultural land, a process which clearly involves a high degree of human activity and benefit.

However, the group agreed that many of these approaches had much in common, and what mattered was the ethos of supporting both nature and societal well-being. This was a relevant challenge for all parts of Scotland's land and landscapes; but the approaches and labels used were expected to vary in different situations. One participant pointed out that there had been a strong tradition on managing for nature in designated protected areas, but that strengthening natural processes was needed in all settings, from upland peatlands and agricultural land, to urban places such as city centres.

Several workshop attendees expressed interest in having an overview of the 'spectrum' of terms and concepts, to understand which are appropriate to select in particular contexts. The choice of terminology was expected to reflect situation, intention and also the stakeholder groups engaged or affected by a proposal. Several agreed that language must always be carefully chosen to reflect the audience one wishes to communicate with: what is engaging and motivating for one group may be alienating to others.

When or how is it useful for Scotland’s public sector to refer to rewilding?

Most workshop participants felt there was not at present a strong need to refer to rewilding. There were several reasons for this. One important reason is that no Scottish policy documents or duties presently refer to rewilding. Indeed, there had been a deliberate decision not to refer to it within the recent [Scottish Biodiversity Strategy](#). Additionally, some felt that there are no areas of land in Scotland that are large enough to allow autonomous ecological processes, so could not imagine a strict definition of rewilding ever being applicable.

For other participants, the connotations of rewilding meant that it is a term they were very reluctant to use. Points they raised included:

- Firstly, the focus on a return to a past state – which (rightly or wrongly) is associated by many with the ‘re’ in ‘rewilding’ – was felt to be unhelpful and inappropriate. Prehistoric landscapes simply cannot be recreated in modern Scotland, especially given climate change.
- Additionally, some noted that the idea of ‘wilderness’ in Scotland is often applied to landscapes that are actually rather unnatural (for example, reflecting the results of muirburn¹²) and potentially associated with past injustices and the Highland Clearances. As such, rewilding was referred to by one participant as a ‘disruptive’ concept, likely to be associated by some audiences with the exclusion or removal of people from landscapes, and with the introduction of large mammals such as wolves.
- The public should not be understood as unvarying: different sectors of society, communities and individuals can all hold different and potentially plural ideas about rewilding. That said, those with experience of working with land-managers and rural communities felt rewilding would provoke emotional and divisive responses from at least some of those that they had to work with; for this reason, they strongly preferred not to use the term.

Some of the workshop participants – but not all – did feel that a unified reference point might still be useful, to help respond to other organisations and groups using the term. Because rewilding is occasionally mentioned in the media and by other groups and organisations, many who hear the term may feel some level of familiarity with it. This familiarity may engender more interest in discussing rewilding, than if other terms were used that sound more specialist or obscure. However, several other participants who work with communities and land-managers did not feel so confident that rewilding would be helpful in this way. They expected that the term rewilding would generate negative emotive reactions – for example, by land managers who

¹² Muirburn is the intentional and controlled burning of moorland vegetation to encourage new growth (either heather or grassland) for the management of moorland game and wildlife or for improving the grazing potential of the moorland for livestock or deer. See [Wildlife management: A Consultation](#) (Scottish Government, 2022) for more information.

fear loss of existing livelihoods, rural communities who oppose reintroductions of large mammals – and so they generally preferred to use terms that did not have ‘baggage’ (in other words, terms that did not already have strong preconceptions and were less likely to generate emotional reactions).

There was stronger interest in understanding the ‘spectrum’ of relationships between rewilding and other terms and concepts (see above). There was also interest in highlighting any implications for existing designations, goals or activities, for example how it would relate to or affect [UNESCO Biosphere Reserve](#) goals (such as in the South of Scotland), which encourage a living and working countryside. One participant suggested reviewing the [Global Biodiversity Framework \(GBF\)](#) for references to rewilding.

Conclusion

This chapter has summarised the findings of an online deliberative workshop with public sector representatives held in April 2023, which focused on discussing and defining rewilding for Scotland’s public sector.

As outlined above, the definition of rewilding that has been proposed by the International Union for Nature Conservation’s Rewilding Thematic Group was very helpful for informing a discussion of rewilding, but attendees felt that it requires adjustment for use by the public sector in Scotland. A new definition is needed that emphasises the term’s central meaning of creating autonomous natural processes, is written in accessible language, and which attends to social benefits and issues.

Any use of the term rewilding is likely to inspire different ideas and reactions amongst different members of the public. This is unavoidable and there may be times when it is better to use different terms that do not provoke such strong associations. To aid communication, it may be useful for future work to further explore perceptions of rewilding across Scottish society.

The workshop did not provide clear insights as to when it may be useful for Scotland’s public sector to refer to rewilding; to explore this, it may be worth carrying out future work to establish links with pre-existing policy priorities and processes, and to clarify relationships with other terminology.

5. Discussion: A definition of rewilding for Scotland's public sector

This chapter proposes a working definition of rewilding provided by the report's authors. The definition is intended to be positive and accessible. It is relevant both within the Scottish context and in relation to international work to develop and define rewilding.

This chapter builds on the literature review and workshop findings to propose a working definition of rewilding for use by Scotland's public sector. The definition is intended to be positive and accessible, and is relevant both within the Scottish context and in relation to international work to develop and define rewilding.

This chapter also outlines the basis of the proposed definition, and considers its potential use in relation to the wider context of 'rewilding' guidance and principles, and its relationship with other terms and concepts.

A proposed definition of rewilding for Scotland's public sector

The below definition is designed so that the first sentence can be used by itself, whilst the additional sentences emphasise points that are particularly relevant in a Scottish context:

"Rewilding means enabling nature's recovery, whilst reflecting and respecting Scotland's society and heritage, to achieve more resilient and autonomous ecosystems.

Rewilding is part of a set of terms and approaches to landscape and nature management; it differs from other approaches in seeking to enable natural processes which eventually require relatively little management by humans.

As with all landscape management, rewilding should be achieved by processes that engage and ideally benefit local communities, in line with Scotland's Land Rights and Responsibilities Statement, to support a Just Transition."

This definition is intended to be positive, accessible, and also compatible with the definition and principles of the International Union for Conservation of Nature (IUCN)'s Rewilding Thematic Group and the main other international group relevant to Scotland, the European Rewilding Network.

Basis of this Definition

The definition proposed above takes into account the following points from the evidence review and workshop:

- Rewilding should be understood as part of a family or spectrum of approaches to landscape and nature management;
- What sets rewilding apart from other approaches is its strong emphasis on restoring ecosystem functioning and achieving relatively autonomous natural processes;
- Rewilding *can* be associated with reintroducing plants and animals, and/or restricting people's access to landscapes, but this should not be assumed;
- Rewilding processes and goals should support a Just Transition, so must engage with and reflect the concerns of society, especially local communities;
- To promote accessibility, a definition should be short, positively phrased and also avoid use of specialist terms;
- However, the definition should be compatible with and used in reference to current internationally endorsed definitions and expert guidance on rewilding.

This definition is proposed by the report authors; it has not been directly endorsed by workshop participants.

Supporting the definition through principles to guide rewilding

This definition should be used in reference to and within the context of wider guidance and principles for 'rewilding', as outlined in Chapter 3. The IUCN Rewilding Thematic Group and European Rewilding Network have both set out principles and further guidance on rewilding (see Table 1). This should be consulted in conjunction with existing guidance on the Scottish Land Rights and Responsibilities Statement (Scottish Government, 2022d). This guidance is complementary in its focus on how to engage and work with communities in land management and decision-making.

Table 1 groups these two sets of principles into five key themes, which are each a necessary part of working and planning for rewilding:

1. aspire for autonomous natural processes;
2. plan in terms of spatial context;
3. learn from the past but also look forwards;
4. work with and for people; and
5. manage adaptively.

Table 1. Thematic summary of principles to guide rewilding from the IUCN Rewilding Thematic Group and the European Rewilding Network

Key themes	IUCN Rewilding Task Force	European Rewilding Network
1. Aspire for autonomous natural processes	Rewilding focuses on the recovery of ecological processes, interactions and conditions based on reference ecosystems	Letting nature lead
		The ecosphere is based on relationships
2. Plan in terms of spatial context	Rewilding employs landscape-scale planning that considers core areas, connectivity, and co-existence	Working at nature's scale
		Complimentary conservation/protecting the best, rewilding the rest
3. Learn from the past to plan forwards	Rewilding should anticipate the effects of climate change and where possible act as a tool to mitigate impacts	Long-term focus/Taking the long view
	Rewilding utilises wildlife to restore trophic interactions	Recalling ecological history and acting in context
4. Work with and for society	Rewilding requires local engagement and support	Building nature-based economies
		Seek public/private collaboration
		Working together for the good of ourselves and nature
		Providing hope and purpose
5. Learn and manage adaptively	Rewilding is adaptive and dependent on monitoring and feed back	Evidence-based adaptive management
	Rewilding is informed by science, traditional ecological knowledge (TEK), and other local knowledge	Offering natural solutions and thinking creatively

Sources of information: for the Rewilding Thematic Group, Carver et al. (2021); IUCN (2021); IUCN CEM RTG (2021) and for the European Rewilding Network, [Rewilding Principles](#). Principles from both are phrased as in Table 1 in Jepson (2022) but with a different ordering.

Rewilding's relationship with other terms and concepts

Many of the themes and principles in Table 1 are not unique to rewilding. For example, the need to enable adaptive management is widely supported across the environmental management literature (for example, Williams & Brown, 2014). This highlights commonalities with other approaches to landscape management, beyond the focus on achieving autonomous or self-sufficient natural processes. The workshop participants recognised this, and noted that it would be useful to receive guidance on how the spectrum of different terms and concepts relate to each other and to rewilding.

Several sources have suggested how rewilding relates to other terms and concepts in nature management and conservation (for example, Carver et al., 2021; Gerwing et al., 2023). Whilst there is no single authoritative version of how terms relate to each other, these sources make clear that some terms overlap in their meaning (for example, rewilding may be seen as very similar to restoration) and indicate underlying issues by which the terms may be differentiated, including goals for ecosystem management (for example, the degree to which nature's autonomy is sought), settings in which they are relevant (for example, 'regeneration' is more often used in agricultural systems) and the extent to which human activity is still expected in the system (for example, 'urban ecology' is used to discuss strengthening nature's presence in towns).

A full review of how ecology, nature and landscape management terminology relates to rewilding is beyond the scope of this report, but in Annex 3 we highlight some useful guidance that already exists on this subject.

6. Conclusions and Recommendations

Based on an evidence review and workshop on rewilding, this report proposes a new **definition of rewilding** for use by Scotland's public sector. This definition is compatible with existing international debates but is intended to be more accessible and relevant to a Scottish context.

We also **recommend a number of options** for future activities, to influence understanding of rewilding by different members of the public, and build confidence in how rewilding relates to other terms and processes relevant to the public sector in Scotland. Together, these recommendations should help enable engagement with nature and landscape management options suitable for Scotland.

This report has outlined the findings of research to investigate views on the term 'rewilding' and whether it is suitable for adoption in Scotland's public sector. The report has set out the findings of an evidence review and workshop on rewilding and proposes a new definition of rewilding for use by Scotland's public sector.

The evidence review establishes that rewilding is a term used very variably, with different meanings and interpretations both within the academic literature and in wider discourse in Scotland. However, most experts agree that rewilding emphasises establishing autonomous or self-sufficient natural processes: this a key difference from other terms and concepts in environmental management, though 'restoration' is a very closely related term. Rewilding can additionally invoke ideas of exclusion of people and the reintroduction of species; whilst this is not inherent to all visions of rewilding, it contributes to debates and controversy over the term.

International collaborative efforts have started to synthesise these debates over rewilding. As outlined in Chapter 3, a definition and guiding principles have been recently proposed by the Rewilding Thematic Group of the Commission on Ecosystem Management, of the International Union for Nature Conservation (IUCN). The workshop on rewilding organised as part of this research focused on this work, but identified a number of issues to be considered in finding an accessible definition of rewilding appropriate for Scotland's public sector. The workshop also made clear that other terms and concepts are likely appropriate depending on context and audiences to be engaged with; and the need to understand rewilding as part of a wider set of landscape and nature management terms and practices. Many terms such as 'restoration' and 'regeneration' are already used by Scotland's public sector. Further work to understand the connections between rewilding and other terms and existing policy processes would be productive.

Drawing on these findings, the report sets out a proposed definition of rewilding for use by the public sector in Scotland. This is designed to be an

accessible reference point for Scotland's public sector that can be used with non-specialist audiences outside of the public sector. The definition is also accompanied by international proposals for principles to explain and guide rewilding, which can be consulted where any further information or guidance on rewilding is needed.

Across Scotland, different actors outside of the public sector will likely continue to refer to rewilding in many and varied ways. The public sector can now have confidence in using this new definition that reflects international expert thinking and is also appropriate to Scotland. This indicates the need for steps to be taken to ensure good awareness of this definition; but also the need to expect and engage with other concepts and conceptions of rewilding.

The recommendations below suggest future activities, both to improve understanding of how rewilding is perceived by different members of the public, and how rewilding relates to other terms and processes relevant to the public sector in Scotland. Together, these recommendations should help public sector engagement for managing nature and landscapes for Scotland. Understanding how to use different concepts and when to choose different approaches will be essential if we are to tackle the twin crises of climate change and biodiversity loss, and support a Just Transition in Scotland.

Recommendations

If the proposed definition of rewilding is adopted, it is important that there is awareness of this, and it is consistently used by Scotland's public sector:

- Specific efforts should be taken to communicate it to all public sector organisations and groups that may need to refer to rewilding.
- A short briefing providing the definition, context and international guidance may help to support internal and external communication about rewilding.

An accessible definition, by itself, cannot reflect all principles and recommendations about rewilding practices:

- Those who need to work on or respond to rewilding proposals should consult the principles and guidance of the IUCN [Rewilding Thematic Group](#) and the [European Rewilding Network](#).
- The co-chairs of the IUCN Rewilding Thematic Group have offered to support further work on a Scotland-specific definition and guidance. Any such work should also consider other key rewilding expert groups, including the European Rewilding Network.

Anyone considering using the term rewilding must be mindful of different interpretations of rewilding. Different members of the public may have quite different perceptions, and so rewilding may generate quite variable reactions:

- Research into public perceptions of rewilding – beyond those groups actively engaged in supporting and debating this activity – may be useful to

help plan future communication by the public sector. 'The public' encompasses individuals with many different understandings, values, and interests; understanding the views of those in rural areas and communities local to rewilding proposals is especially important.

- Those planning engagement, for example around new proposals for site management, should expect to sometimes need to use other terminology in order to more clearly and less contentiously communicate intentions or expectations.

There is a spectrum of terms which are related to rewilding and already used by the public sector – including but not limited to 'restoration' and 'regeneration'.

- Producing a summary overview of the range of terms in use in Scotland that are related to conservation, nature, ecological and/or landscape management could be a useful reference guide for many purposes, not solely related to rewilding. The overview of terms – perhaps presented visually as in the examples in Annex 3 – should be accompanied by concise definitions and links to further guidance.
- It will be helpful to articulate the situations or settings when it will be especially useful or necessary for the public sector to refer to rewilding, in connection with pre-existing terminology, policies, priorities and obligations.
- Reviewing other international and national policy frameworks may help to identify if and when rewilding is referred to, and how it relates to existing public sector terminology, priorities, and processes.

The meanings and practices associated with rewilding are fast-changing and evolving, both within and beyond Scotland. For example, the definition and principles of rewilding proposed by the International Union for Nature Conservation's Thematic Rewilding Group are currently under debate within the IUCN. The existing discourse and analyses on rewilding provide useful insights, but there are also many points of tension and disagreement both within and beyond academia.

- In future, for example over the next 5-10 years, it may prove useful to revisit these rewilding debates and practices, to consider new insights and implications for understanding and defining rewilding in Scotland.

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Annex 1. Workshop Participants

Participants from Scotland's public sector and agencies

- Anna Leslie (Land Reform, Land Reform Rural and Islands Policy Division, Scottish Government)
- Brian Eardley (Biodiversity Unit, Nature Division, Scottish Government)
- John Kerr (Agricultural Policy Division, Scottish Government)
- Peter Phillips (Natural Capital Team, Land Reform, Rural and Islands Policy Division, Scottish Government)
- Ross Johnstone (Natural Capital Team, Land Reform, Rural and Islands Policy Division, Scottish Government)
- Emily Harris (RESAS, Scottish Government)
- Jack Bloodworth (RESAS, Scottish Government)
- Sallie Bailey (RESAS, Scottish Government)
- Clive Mitchell (NatureScot)
- Donald Fraser (NatureScot)
- Hamish Trench (Scottish Land Commission)
- Colin Mclean (Cairngorms National Park Authority)
- David Hetherington (Cairngorms National Park Authority)
- Lynne Hendry (Crofting Commission)
- Simon Jones (Loch Lomond and the Trossachs National Park Authority)
- John Raven (Historic Environment Scotland)
- Jayne Ashley (South of Scotland Enterprise)

Participants from other UK administrations

- Glenn Watts (Environment Agency)
- One participant from Defra

Participants from academia and other expertise in rewilding

- Ian Convery (University of Cumbria)
- Stephen Carver (University of Leeds)
- Paul Jepson (Credit Nature Ltd)
- George Holmes (University of Leeds)
- Kirsty Mackay (Highlands Rewilding)

Participants from Scotland's eNGO community

- Mike Daniels (John Muir Trust)
- Jo Pike (Scottish Wildlife Trust)

Annex 2. Workshop Agenda

This workshop agenda was circulated to workshop participants. Participants were also given two supporting materials: The rewilding definition and principles based on work by the IUCN CEM Rewilding Thematic Group (RTG) as presented in the 2021 IUCN Issues brief (IUCN, 2021), and a 3-page summary of the evidence review presented in this report.

Workshop: Rewilding in Scotland

Aim: To understand the topic of ‘rewilding’ as discussed in Scotland, and to identify a definition of rewilding suitable for reference by the public sector in Scotland.

Output: A report for Scottish Government, that proposes a definition of rewilding that builds on both an evidence review on rewilding and key workshop discussion points. Workshop participants will be acknowledged within this report, unless they prefer not to be. Comments within the report will not be attributable to individuals.

09:25	Joining and familiarisation with Webex
09:30	Introduction by Kerry Waylen, James Hutton Institute Welcome by Emily Harris, RESAS
09:45	Rewilding definition and principles proposed by the IUCN CEM RTG by its co-chairs Ian Carver & Steve Convery Q&A (Chair Kerry)
10.10	Small group discussion <ul style="list-style-type: none">• Why and when it may be useful to refer to rewilding?• Is the IUCN definition suitable for Scotland? Why? Why not?• Other concepts seen as related, or preferred? Why? When?
10.45	Micro break
10.50	Plenary discussion Rapid recap of small group discussions by facilitators, followed by additional comments, queries or points of clarification. Summarise and consolidate key points on how and when to refer to rewilding.
11.20	Next steps and outputs
11.30	Close

Annex 3. Relating Rewilding to Other Terms and Concepts

This annex illustrates some examples of how rewilding has been related to other terms and concepts in conservation and environmental management.

One set of ideas on the relationship between rewilding and other concepts comes from the the IUCN Rewilding Thematic Group. Carver et al. (2021) propose a diagram (Figure 3) which distinguishes the degree of ‘human modification’ of landscapes as guiding the degree to which one may expect to be able to reduce human control or dominance – suggesting that rewilding is not an appropriate term in highly modified environments, where instead terms such as ‘urban ecology’ or ‘conservation of cultural landscapes’ should be used. Within the rewilding workshop, the presentation given by Ian Convery and Steve Carver also presented the continuum in Figure 4.

Figure 3 ‘The Wilderness continuum’, from Carver et al 2021

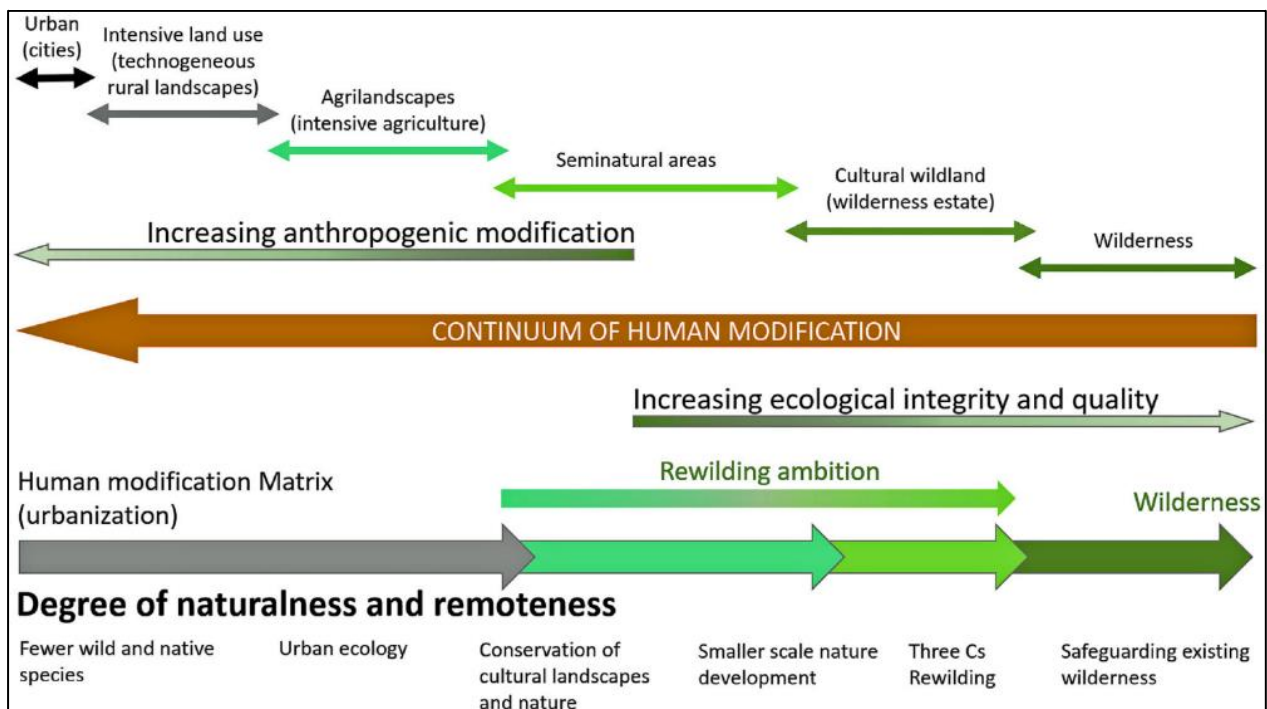


Figure 4 Extract from presentation given by Steve Carver and Ian Convery during their presentation during the workshop, which is adapted from Carver et al (2021).



Most recently, Gerwing et al. (2023) have provided a decision tree to help clarify and choose terms related to restoration ecology. Their definition of rewilding is broadly compatible with the definition proposed above. The decision tree (Figure 5) and their description of the terms within it (Table 2) are copied below.

Further work to articulate the range of terms in use in Scotland that are related to conservation, nature, ecological and/or landscape management may be a useful reference guide for many purposes, not solely related to rewilding.

Figure 5 Copy of figure 1 from Gerwing et al 2023. "Decision tree clarifying relationships between key terms within Restoration Ecology based upon project goals (scope)."

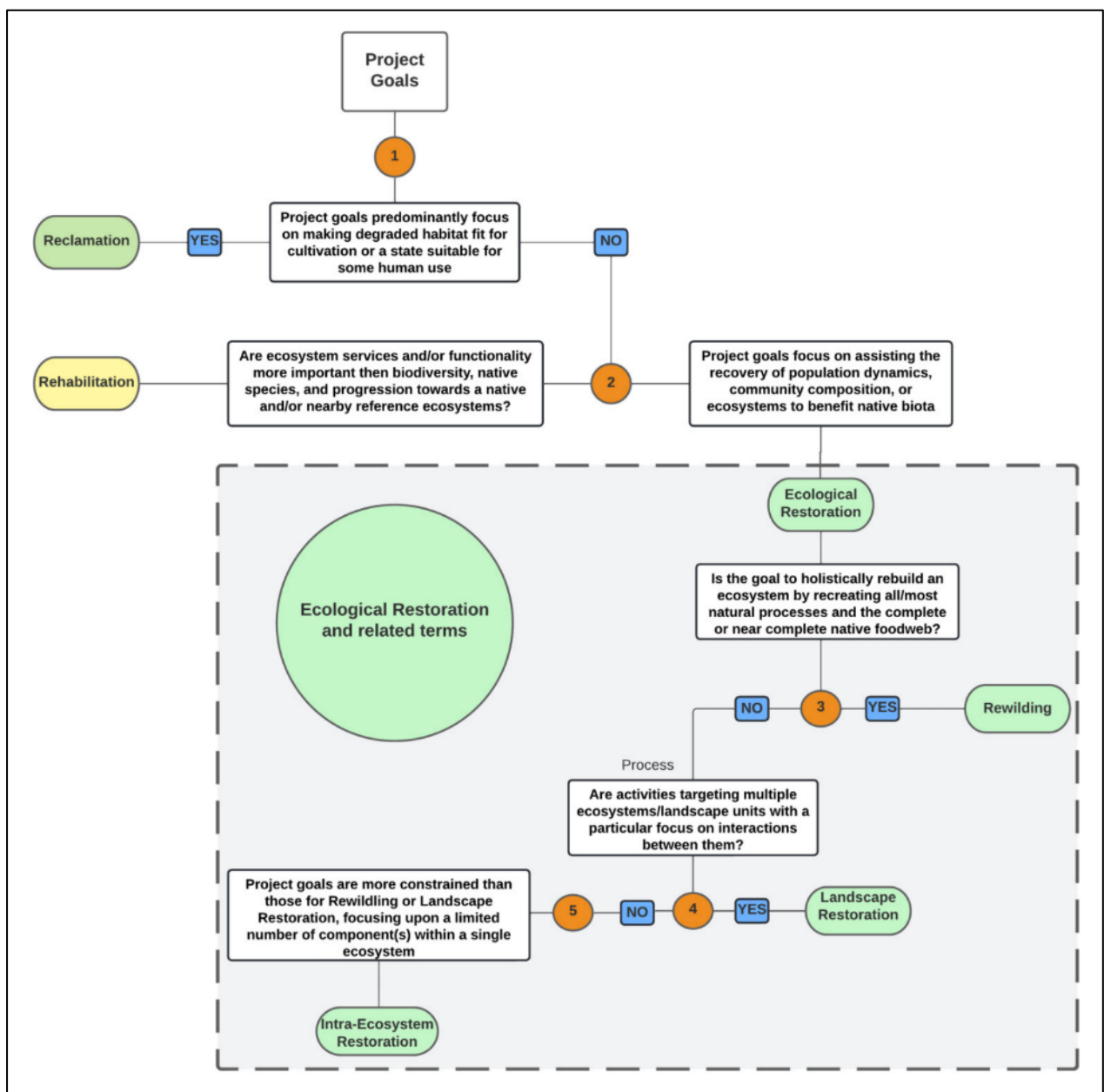


Table 2. Copy of Table 1 in Gerwing et al. (2023) “Summary of table of proposed restoration definitions”

Term	Proposed definition
Reclamation	The process of making severely degraded habitat fit for cultivation of a state suitable for some human use
Rehabilitation	Management actions that aim to reinstate a level of ecosystem functioning on degraded sites, where the goal is renewed and ongoing provision of ecosystem services rather than the biodiversity and integrity of a designate native reference ecosystem
Ecological restoration	The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed to benefit native biodiversity
Rewilding	The process of rebuilding, often following major human disturbance, a natural ecosystem(s) by restoring natural processes and the complete or near complete food web at all trophic levels as a self-sustaining and resilient ecosystem using biota that would have been present had the disturbance not occurred
Landscape restoration	Activities that seek to recover landscape-level ecological integrity by focusing on the restoration of landscape structure, dynamics and function, with a particular focus on restoring critical interactions between ecosystems or landscape units
Intra-ecosystem restoration	Activities that target a limited subset of ecosystem components, with efforts constrained within a single ecosystem and landscape unit
Ecological reclamation	Activities that aim to assist the recovery of an ecosystem, species, or community to states outside those predicted by native reference models, or divergent from the variety of conditions observed in native and (or) nearby reference habitats
Reference condition restoration	Activities that aim to assist the recovery of an ecosystem, species, or community to states with those predicted by native reference models or within the variation of conditions observed in native and (or) nearby reference habitats



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This document is also available from our website at www.gov.scot.
ISBN: 978-1-83521-064-2

The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

Produced for
the Scottish Government
by APS Group Scotland
DPPAS1317322 (07/23)
Published by
the Scottish Government,
July 2023



Social Research series
ISSN 2045-6964
ISBN 978-1-83521-064-2

Web Publication
www.gov.scot/socialresearch

PPDAS1317322 (07/23)