UKFS: A call to enhance the delivery of the biodiversity theme

The signatories to this document who support this call are listed in section 6 of the document

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EXECUTIVE SUMMARY

This document is a call to strengthen the biodiversity component of the UK Forestry Standard (UKFS) and has been developed by Scottish Environment LINK's Woodland Group and other stakeholders with an interest in the relationship between forestry and biodiversity. The UKFS is the reference standard for sustainable forest management across the UK. It is endorsed by all governments across the UK, is a basis for regulation and monitoring, and sets requirements and guidelines for sustainable forest management.

An updated edition of the UKFS is due to be published in early 2023. This document sets out the views of Scottish Environment LINK's Woodland Group and other stakeholders on the Biodiversity element of the Standard. It seeks to make a useful contribution to the review, especially the second formal consultation currently underway.

The Changing Context

The prominence and relevance of forests and woodlands have both transformed since the existing edition of the UKFS was published in 2017. The twin climate and nature emergencies are now recognised as urgent and existential threats to humanity and there is agreement that trees can contribute significantly to our efforts to minimise the damage and gradually restore a more stable planet[1].

At the same time as the alarm bells have been getting louder for climate and nature, we have also seen forestry and woodland policy continue to evolve and change. The Biodiversity Intactness Index shows that the UK is one of the poorest-performing countries in the world – with Scotland 28th, Wales 16th, Northern Ireland 12th and England 7th from the bottom in a ranking of 240 countries and territories. We have entered the UN Decade of Ecosystem Restoration, witnessed the signing of the Glasgow Leaders' Declaration on Forests and Land Use, seen sharply rising concern about tree pathogens, received a revised UKWAS and recognised the importance of temperate rainforest in Scotland and the west of the UK. All this in the wake of Brexit and a changing legislative framework.

The UKFS Review must be carried out in this context. As highlighted by the Scottish Government's consultation on its new biodiversity strategy, forestry is a land use that has contributed to the twin crises and one with a great deal to offer in turning them around. It is more important than ever to harness the contribution that forests and woodlands can make to addressing climate change and nature loss. It is more urgent than ever that this contribution is not just agreed on paper but is also seen through in practice. The UKFS has a key role to play in securing this delivery on the ground.

Improving the UKFS

Our assessment of the current UKFS is that the narrative is good, but that the scope left for interpretation, and thus optionality, means that the standards described are often not met on the ground. A new approach to monitoring through self-assessment with forestry agency compliance checking can be used to create an environment where real attention is given to delivering positive environmental and social outcomes alongside revenue-generating management.

In this way, the UKFS can help to engender and underpin the delivery of multiple public benefits from forestry. A sister paer to this, UKFS & People, sets out the benefits that communities can get from forests and woodlands, including quality of life benefits from improvements in biodiversity and the health of the local natural environment. As with the People theme, strengthening the Standard on Biodiversity can also create economic opportunities, with more diverse productive forests and more diverse silviculture giving more potential for small-scale rural enterprises that can contribute to local economies.

With so much at stake, and so much to gain, this is a moment for securing positive change while reassuring stakeholders that there is an important role for all forms of forestry in the future. We believe that the proposals for the UKFS in this document - for clearer language, rigorous

[1] https://www.theccc.org.uk/publication/updated-quantification-of-the-impact-of-future-land-use-scenarios-to-2050-and-beyond-uk-centre-for-ecology-and-hydrology/

consideration of cumulative impact, monitoring compliance and adjustments to support more diverse and resilient forests and woodlands - can help to strike the right balance and better align the range of interests in forestry for the future.

1. Purpose of paper

The UK Forestry Standard is currently undergoing review, as is scheduled every five years, with the new edition originally due for publication at the end of 2022; it is now understood that the revised timetable is for publication in early 2023. The supporters of this document see this review as an opportunity to strengthen the biodiversity component of the UKFS. This paper has therefore been developed by Scottish Environment LINK's Woodland Group, with support and input from Forest Policy Group and a range of other stakeholders with an interest in the role forestry can in play in supporting the recovery of biodiversity. The signatories to this document who support this call are listed in section 6 of the document

It has been compiled by a range of organisations who first met in May 2021 to discuss the potential to improve the UK Forestry Standard so that it can support better delivery of biodiversity outcomes through forestry. The meeting was convened by the LINK Woodland Group, but considerable input has come from organisations outside of LINK. Although the issues are interrelated and sometimes complex, there was consensus on the opportunities for positive changes to the Standard.

This document sets out both the overall thrust and the detail of that consensus.

2. Introduction

The UK Forestry Standard (UKFS) is the reference standard for sustainable forest management across the UK[2]. The UKFS is endorsed by all governments within the UK. It defines standards and requirements, is a basis for regulation and monitoring, and sets guidelines for sustainable forest management. The standard seeks to ensure that international agreements and conventions on areas such as sustainable forest management, climate change, biodiversity and the protection of water resources are properly applied.

An updated edition of the UKFS was originally due to be published by the end of 2022[3]; it is now understood that the revised timetable is for publication in early 2023. The review is coordinated by Scottish Forestry and overseen by a Project Board made up of representatives from Scotland, England, Northern Ireland, and Wales. Stakeholder engagement and consultation are said to be an important element of the review. This document seeks to set out the views of Scottish Environment LINK's Woodland Group and other stakeholders concerned about forestry and biodiversity – and thus make a useful contribution to the review process and especially the second consultation, due in September 2022.

Given the membership of Scottish Environment LINK's Woodland Group and the other stakeholders involved, this paper has a particular focus on Scotland. However, the issues raised are relevant across the UK and, where appropriate/possible, references have been expanded to address other jurisdictions.

The published information on the UKFS review and consultation indicates that the process has a limited scope and suggests that there is a focus on "technical issues". This paper, however, adopts an alternative approach – it begins with the global and UK biodiversity crisis, forestry's part in that and potential to contribute to addressing it; it then makes the recommendations necessary to address the crisis and fulfil the potential. In considering the twin biodiversity and climate crises, it also reflects the updated global policy context, especially that endorsed by the UK governments.

Our recommendations are made with a view to helping the revised UKFS reflect this updated policy context. Where our recommendations may fall outwith the defined 'scope' of the current review, it is the latter that should amended, not the former. Delaying application of new global and UK policy to a subsequent update of the UKFS would mean this review would be a missed opportunity, and result in another five years of applying outdated policy.

[2] https://www.gov.uk/government/publications/the-uk-forestry-standard
[3] https://forestry.gov.scot/sustainable-forestry/ukfs-scotland

3. The Changed Context of the UKFS

The context for UK forestry, and the application of the UKFS, has changed significantly since the UKFS was last reviewed in 2017. There are several developments that the reviewed UKFS will need to consider, much of which is already reflected in global policy, as well as that of the UK governments. These must include:

- The biodiversity crisis
- The climate crisis
- Brexit
- UKWAS
- UN Decade of Ecological Restoration
- Scotland's rainforest
- Biosecurity

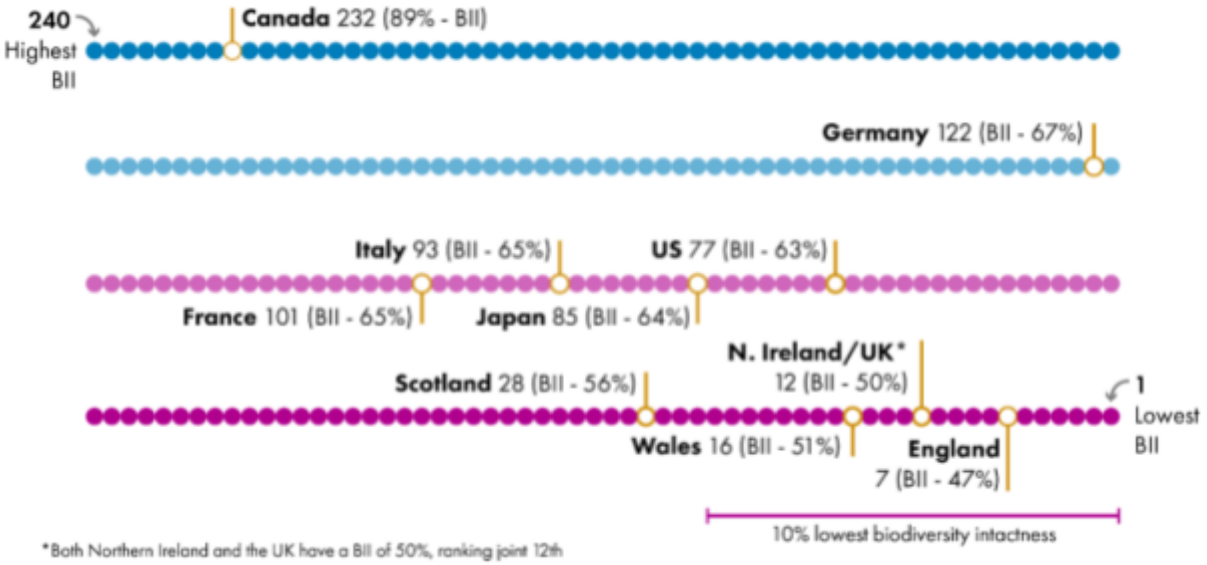
Each of these issues is discussed in the following sections, along with examples of how they might be addressed in a revised UKFS.

The biodiversity crisis

We are in a nature and climate emergency. The UKFS requirements and guidance need to be set within this context, to harness the contribution forestry can make to addressing the twin crises of climate change and nature loss.

The 2019 State of Nature report[4] and the Biodiversity Intactness Index (BII)[5] are treated by NGOs, Governments, and statutory agencies as a "shared evidence-base" of biodiversity outcomes and for use in devising strategy. The BII is of particular relevance as it captures the historic aspects and has also been adopted by the CBD and IPBES for use in measuring global progress. It estimates how much of an area's natural biodiversity remains and helps us understand past, current, and future biodiversity changes. On latest evidence, the BII demonstrates that the UK is one of the least well performing countries – with **Scotland 28th, Wales 16th, Northern Ireland 12th and England 7th from the bottom in a ranking of 240 countries and territories** (see figure 1).

Figure 1: The UK nations poor performance in Biodiversity intactness[6]



[4] https://www.rspb.org.uk/our-work/state-of-nature-report/

[5] https://www.rspb.org.uk/globalassets/downloads/about-us/48398rspb-biodivesity-intactness-index-summary-report-v4.pdf

[6] https://spice-spotlight.scot/2021/06/04/how-does-scotlands-biodiversity-measure-up/

It is, therefore, clear that there has been a historic decline in biodiversity, and no/inadequate recovery in the past 20-30 years[7]. These 'crisis' outcomes have been acknowledged by Governments at the highest level (see box 1).

Box 1

"The challenges facing biodiversity are as important as the challenge of climate change, and I want Scotland to be leading the way in our response".
Rt. Hon. Nicola Sturgeon MSP, July 2019[8]

"We hold our natural environment in trust for the next generation. By implementing the measures in this ambitious plan, ours can become the first generation to leave that environment in a better state than we found it and pass on to the next generation a natural environment protected and enhanced for the future."
Prime Ministerial Foreword to UK Government's 25-year Environment Plan[9].

Due to the global challenges faced by our environment, with land use change and forestry amongst the drivers off nature loss, a key focus of the upcoming December 2022 COP15 will be seeking an agreement on a new Post-2020 Global Biodiversity Framework[10]. It is notable that the draft Post-2020 Global Biodiversity Framework[11], likely to be agreed at COP15, includes the following targets:

- "Target 10. **Ensure all areas under** agriculture, aquaculture and **forestry are managed sustainably**." and
- "Target 14. Fully integrate biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies, accounts, and assessments of environmental impacts at all levels of government and across all sectors of the economy, ensuring that all activities and financial flows are aligned with biodiversity values."
  (Emphasis added)

The UKFS needs to rise to the challenge and deliver a step change in action for biodiversity and enhance forestry's contribution to this, addressing the impacts of forestry on biodiversity and also ensuring that forestry expansion and management are better for biodiversity than is currently the case. **The current review of the UKFS provides an opportunity to reduce forestry's significant net contribution to the biodiversity crisis by reducing the extent of damaging impacts on biodiversity and increasing the positive outcomes that forestry can deliver for nature.**

Climate change

Since the last review of the UKFS, international climate change agreements have continued to develop, governments have declared climate emergencies and the Declaration of Forests and Land Use was agreed at COP26[12], and the Forest and Climate Leaders Partnership announced at COP27 to deliver on the commitments made in the declaration The UK is now committed to achieving "net-zero emissions" by 2050, and Scotland by 2045. Interim targets for 2030 have also been set, recognising the need to act urgently.

All estimates of how these targets can be achieved, including the formal advice of the Climate Change Committee (CCC), suggest that this will need to include a significant increase in woodland cover[13].

This is, of course, an opportunity for woodlands – with increasing planting targets being set by Governments to seek to achieve increased woodland cover. Various types of woodland make different

[7] https://www.scotlink.org/wp-content/uploads/2022/04/Rhetoric-to-reality-2-full-report-FINAL.pdf
[8] Letter to Scottish Environment LINK: https://www.scotlink.org/wp-content/uploads/2019/07/FM-response-to-cross-sector-letter.pdf
[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf
[10] https://www.cbd.int/conferences/post2020
[11] https://www.cbd.int/doc/c/abb5/591f/2e46096d3f0330b08ce87a45/wg2020-03-03-en.pdf
[12] https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/
[13] https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf

contributions to carbon sequestration, as highlighted in a recent Forest Research report[14]. Importantly the UKFS needs to guide the implementation of this research and set measures for decisions to be made by ecological and environmental impact assessment regarding site suitability and species choice and by balancing aims and outcomes for carbon sequestration, biodiversity and conservation, timber production, and the provision of ecosystem services. The CCC further states that tree planting objectives must be met "*with a mix of tree types that focus on broadleaves. … It is important that the right tree is planted in the right place. Decisions on tree planting should take account of biophysical suitability of different species, projected climate impacts and other constraints and uses of land*"[15].

The UKFS, along with targeted grants, is the key vehicle to ensure that forestry delivers climate change benefits – but to do so the review will need to considerably strengthen its focus (and requirements) on climate and biodiversity issues.

The first consultation on this review of the UKFS asked "should references to the need to consider forest resilience and climate change adaptation be strengthened throughout the UKFS?" All the organisations supporting this call responded in the positive while highlighting that it is not purely a matter of "references", such references need to be translated into requirements for action (and/or appropriate decisions). Although resilience and climate change adaptation feature prominently throughout the existing UKFS text, references need to be updated so they

- reflect up-to-date research and understanding in the area
- are strong enough to effect improved practice on the ground

A clear example of this gap between "references" and impact on the ground is the UKFS stating 'Introducing diversity in tree species and origins will ensure some thrive should others decline' and yet in Scotland, the forestry sector is dominated by one tree species, putting the sector at high risk. All tree species are potentially susceptible to pests, diseases and abiotic threats (such as drought, wind and wildfire) that are associated with climate change and it is the risk to near monoculture stands that are greatest. The windblown arrival, in 2021, from the continent of the larger eight-toothed spruce bark beetle (*Ips typographus*) in woodlands in south-east England and reports that it has attacked Sitka spruce as well as Norway spruce since its arrival[16] is a clear warning that we need to radically improve tree species diversity in planting and restocking plans across the UK with a focus on diverse stands of native broadleaved trees. Such measures, implemented on the ground via a strengthened UKFS, are essential to ensure that forestry and woodlands are resilient in the face of climate change - i.e. increasingly diversified and increasingly (by proportion) native woodlands acting as long-term carbon stores.

> "*There is scope to expand sustainably managed broadleaved forests and woodlands, creating opportunities to improve the supply and quality of hardwood timber as well as providing other benefits such as biodiversity.*"
> Climate Change Committee advice to Scottish Parliament, December 2021[17]

To become climate effective, the UKFS should develop its approach, incorporating carbon management throughout the whole forest cycle. This starts with protecting soil carbon using appropriate cultivation techniques, based on the latest research; sound silviculture practices that can minimise carbon loss during harvesting and support the increase in timber products that store long-term, and ensure the security and permanence of existing (and future native) woodlands as valuable carbon stores and havens for biodiversity. All these issues were underlined and recognised

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14 https://www.forestresearch.gov.uk/publications/quantifying-the-sustainable-forestry-carbon-cycle-report-download-page/

15 https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf

16 https://www.forestryjournal.co.uk/features/19931753.operation-scorched-earth-stop-ips-typographus-reaching-scotland/

17 https://www.theccc.org.uk/wp-content/uploads/2021/12/Progress-reducing-emissions-in-Scotland-2021-Report-to-Parliament-1.pdf

by the Glasgow Leaders' Declaration on Forests and Land Use[18] – to which the UK was a signatory. A strengthened UKFS, and targeted grant aid are the key delivery mechanisms.

The forestry sector has much to contribute, is the conservation and restoration of the UK's peatlands. in the UK, it is estimated there is over 3 billion tonnes of carbon stored in the peatlands, equivalent to all carbon stored in the forests in the UK, Germany and France together[19]. In Scotland, the amount of carbon stored in Scottish peatland is equivalent to 140 years' worth of Scotland's greenhouse gas emissions[20]. From 2021, peatland emissions will now be included in the UK's greenhouse gas emissions inventory[21].

For these reasons, the UK Peatland Strategy[22] is supported by all four governments in the UK[23]. The revised UKFS must therefore recognise this increased priority on peatlands – with a presumption against afforestation or re-stocking of peatland.

[18] https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/

[19] https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapitalforpeatlands/naturalcapitalaccounts

[20] https://www.nature.scot/sites/default/files/2019-04/Peatland%20Action%20-%20Project%20information%20leaflet.pdf

[21] https://www.gov.uk/government/publications/planned-methodology-changes-for-uk-greenhouse-gas-emissions

[22] https://www.iucn-uk-peatlandprogramme.org/uk-strategy

[23] https://www.iucn-uk-peatlandprogramme.org/sites/default/files/header-images/Four%20ministers%20letter%20Joint%20DA%20letter%20to%20IUCN.PDF

Brexit

Since the current UKFS was published, the UK has left the EU. The revision will need to outline this, and the relevant changes (if any) to forestry and environmental legislation. In so doing, it will need to underline that the European Union (Withdrawal Agreement) Act 2020 means that the majority of the legislation and regulations, referred to in the current UKFS are "retained EU law" and thus still applicable.

If any amendments have been made, these should be outlined and explained. However, these should be addressed on a country-by-country basis – as the legislation and policy varies. For instance, in Scotland, the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 provides for the "keeping pace" with EU law, and the Scottish Government continues to uphold a policy of "maintaining or exceeding EU environmental standards. Meanwhile, in Northern Ireland, the provisions of the Ireland/Northern Ireland Protocol to the Withdrawal Agreement are applicable. Nonetheless, the UKFS should remain a common baseline framework for forestry practice across the UK.

UKWAS

As noted in the current UKFS (pages 18-20), it operates alongside the UKWAS scheme as two separate schemes to promote and/or accredit the sustainability of forestry and forest management. The two schemes have slightly different purposes, as well as 'owners' and 'enforcers', but there is undeniably considerable overlap in content (see box 2).

Box 2

The UK Forestry Standard and the UK Woodland Assurance Standard
(Reproduced from UKFS, box 4.3, page 19)

Both the UKFS and the UKWAS define a standard of practice to help ensure that forests and woodlands in the UK are well managed. Although there are links between the two standards, they serve different purposes.

UK Forestry Standard
The UKFS defines the approach of the governments in the UK to sustainable forest management. It is based upon the commitments made by the UK to a range of international agreements and conventions and provides a framework for the delivery of forestry policies in England, Scotland, Wales, and Northern Ireland. All forest managers and practitioners in the UK are expected to meet the UKFS requirements and the authorities will assess applications for forestry proposals against them before giving permission, and before offering grant aid.

UK Woodland Assurance Standard
The UKWAS is owned and managed by a broad partnership and is independent of government. It is based on the requirements of international forest certification schemes (FSC and PEFC) together with those of the UKFS. The principal purpose of UKWAS is to act as an audit protocol for the independent certification schemes, which are paid for by the forest or woodland owner. these feature the use of labels to provide assurances about the integrity of wood products.

Like UKFS, the UKWAS scheme is also subject to periodic review and revision, and such a process is currently underway[24] – but is ahead, in time, of the UKFS review. LINK members and other stakeholders also report that the UKWAS review is a "better and more inclusive process".

The review of UKFS must, therefore, learn from the current UKWAS process – both in relation to proposed content and stakeholder inclusion. On content, the UKFS review must ensure that standards are aligned with the proposed improvements to the UKWAS[25].

[24] https://ukwas.org.uk/process/
[25] https://ukwas.org.uk/wp-content/uploads/2020/11/UKWAS-Revision-2020-23-Issues-Paper-Final.pdf

UN Decade on Ecosystem Restoration

The UN Decade on Ecosystem Restoration[26] aims to prevent, halt, and reverse the degradation of ecosystems on every continent. The United Nations General Assembly has proclaimed the UN Decade following a proposal for action by over 70 countries. The UN Decade runs from 2021 through 2030, which is also the deadline for the Sustainable Development Goals and the timeline scientists have identified as the last chance to prevent catastrophic climate change.

In the UN Decade on Ecosystem Restoration and with the commitment to protect 30% of the UK's land by 2030, we should be aiming to have all Ancient Woodlands protected, including restoration of all Plantations on Ancient Woodland Sites (PAWS), ensuring none of these are in critical condition 2030. A presumption that at final harvest, if not sooner, restoration processes begin (without further exotic planting or regeneration). All PAWS sites would benefit from having a regulation requiring that there is a restoration plan in place, rather than waiting for final harvesting of the current trees on site. This transformation in approach to these ecosystems must be recognised by the revised UKFS.

Such an approach would also reflect the commitments made in Glasgow Leaders' Declaration on Forests and Land Use[27].

Biosecurity

The revised UKFS should take a thorough and systematic approach to biosecurity throughout the planning and management cycles. The introduction of biosecurity requirements from nursery to harvesting should include:

- A clear narrative setting out:
    - The recent increases in pest and disease threats that are often associated with climate change, and that the risks are greatest in near monoculture stands. The recent arrival from the continent of the larger eight-toothed spruce bark beetle (*Ips typographus*) in 13 woodlands in south-east England, as well as reports that it has attacked Sitka spruce and Norway spruce since its arrival[28] must result in UKFS changes to radically improve tree species diversity in planting and restocking plans.
    - The biosecurity and related benefits of using UK and Ireland sourced and grown stock (UKISG) or at least UK grown stock.
    - The benefits of local provenance and natural regeneration in encouraging adaptation and resilience to climate change particularly where objectives are conservation.
    - The biosecurity benefits of natural regeneration, which does not require imports, either internationally or domestically, removing the need for any potentially contaminated material in the creation of new woodland. The natural regeneration of native species also offers resilience advantages as, in most cases, these species hold a high proportion of genetic diversity (if trees are supported to self-seed and spread, this can allow genetic mixing and the natural selection of the fittest, so each successive generation of tree can become better adapted to changing climate conditions).
- The important part UKFS must play in a cultural shift in the sourcing of plants away from imports and in favour of GB and Ireland grown plants. This is particularly important in the context of biosecurity and the Northern Ireland Protocol. Perversely, the protocol risks encouraging more imports of trees from continental Europe to Ireland due to supply chain issues between Great Britain and Ireland. Measures are needed within UKFS and in legislation to discourage such an outcome.
- As part of the forest planning process a built-in protocol is needed for monitoring for pests and diseases, and reporting and dealing with any instances as soon as they are noticed.
- In supporting this, forest managers should carry out regular surveys of their sites and be trained to identify signs of pests and diseases.
- At the nursery stage the UKFS should require that all trees planted should by default be grown in the UK. The Woodland Trust's UKISG is an established assurance scheme and provides a model for this for native trees.

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[26] https://www.decadeonrestoration.org/

[27] https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/

[28] https://www.forestryjournal.co.uk/features/19931753.operation-scorched-earth-stop-ips-typographus-reaching-scotland/

In addition to addressing biosecurity measures that protect the forest from external pests and diseases, it is also important to recognise that many forests are themselves non-native species. Where such species can seed and regenerate, any spread can beyond the forest itself can result in the resultant trees being considered as “invasive non-native species”. This is a particular threat to native biodiversity where plantations are adjacent to important habitats such as peatlands or native woodland. In such circumstances, forest managers should seek to prevent such encroachment and, where it occurs, take steps to remedy it (in line with the ‘polluter pays’ principle[29]).

If the UKFS is to remain relevant to the changing policy imperatives of this critical point in history, the policy issues set out above, and especially the climate and nature emergencies, need to be recgonised as fundamentally shaping the context and aims of the revised UKFS.

[29] See ss.17-19 of the Environment Act 2021 and ss.13-18 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021.

4. Improving the delivery of the UKFS at the sharp end

The UKFS is intended to provide a basis for regulation and monitoring, and to set guidelines for sustainable forest management, which is recognised as having environmental, economic, and social components. In this section, we address generic observations about the UKFS and its operation to inform the review and to assist the forest authorities in ensuring the revised UKFS achieves this commendable intention. Issues addressed are: -

- Compliance and effectiveness in practice.
- Language.
- Public interest.
- Cumulative impact.
- Consultation.

Compliance monitoring to improve delivery in practice

The operation of the UKFS, in practice, is as important as its actual content – as, if it not applied or effective, its purpose cannot be achieved. Many responses to the first round of consultation highlighted difficulties with monitoring and compliance. This is supported by a recent SEPA study that found that, in south Scotland, 26% of forestry sites were non-compliant with the UKFS in relation to the criteria relevant to SEPA (drainage and pollution)[30].

All of the stakeholders that contributed to the discussions leading to the preparation of this paper also expressed concern that non-compliance with other parts of the UKFS is too common in practice and that the current, purely reactive approach to monitoring[42] is insufficient to ensure compliance. Simply revising the UKFS' content on its own will be ineffective – steps are needed to undertake proactive monitoring which ensures that the UKFS is delivered well in practice and that the forestry authorities are resourced and empowered accordingly.

Regulators and public bodies, in general, have an increasing workload, often with flat or reducing budgets. Our comments are therefore intended to strengthen the hand of regulators and ensure that both the letter and spirit of UKFS are met by forestry proposals. Additionally, providing clearer guidance on interpreting UKFS requirements should help landowners and forest managers to design and submit better proposals – thus securing swifter approvals. This should create an environment where a virtuous spiral of higher quality, more sustainable forestry, delivers greater public benefit (not least biodiversity) and shortens the application process for forest managers.

The key step towards this should follow the four-point system based on self-assessment by forestry operators set out in Box 3 below. While this involves some additional investment in the forestry agencies to undertake a proportionate amount of proactive checking, this approach can be used to encourage continuous learning & improvement in forestry delivery, across all aspects of the UKFS. This would provide an efficient, value for money approach for the agencies in terms of high-quality forestry delivered on the ground and maintain a standard that allows forest managers to tailor their practice to local circumstances.

It should be possible, especially when their requirements align, for UKFS monitoring to be as effective as, and similar to, UKWAS monitoring. This would underline the need for the UKFS Review to learn from the current UKWAS review and align standards as much as possible.

[30] SEPA, 2020. https://sectors.sepa.org.uk/media/1180/forestry_and_wood_sector-plan_feb_2020-v6edits.pdf

Box 3

Recommendations for improved monitoring and compliance.

We propose that a four-point approach, beginning with monitoring, can shift the current approach to compliance into a continuous learning culture in forestry that will deliver greater public value on the ground:

1. Self-assessment – all forest managers should identify key indicators at each site and publish their own assessments their performance against these. Report these assessments at a frequency stated in Scottish Forestry approvals – e.g. at grant claim or Forest Plan renewal.

2. Proactive monitoring – resource the forestry agencies to proactively monitor a sample of the self-assessments to assess how well UKFS and associated guidance is being met in practice. This must go beyond monitoring compliance with the 'musts' and 'avoids' of the UKFS to assess the quality of thinking and delivery that has been applied to all elements of the UKFS – how well has each element been incorporated into a forest's planning and management?

3. The results of this monitoring should be published, and a register of non-compliance should be made publicly available.

4. Continuous learning – the lessons learned from UKFS monitoring, self-assessment and industry research will identify areas for continuous improvement that should be built into regularly updated guidance and training to supplement the UKFS.

In addition to monitoring, there is a need for improved enforcement to ensure compliance. In addition to this review of the UKFS itself, the forest authorities must also review and update the UK Forestry Standard Compliance Procedures[31]. This must result in greater certainty that no public funds or consent for any operation, contrary to the UKFS, are provided – and for recovery of any public funds if breaches occur following payment.

Language

A standard would usually be expected to give clear indicators of compliance, but much of UKFS 2017 is not worded in this way. Instead, many points are couched as "things to consider". This may be appropriate for some points, as 'optional extras'. However, the consideration of biodiversity should, in the current context, not be optional, especially for larger or sensitive applications. Moreover, such 'consideration' must also be linked to action to be taken as the result of the consideration.
Re-phrasing of guidance to address these issues would reduce conflict by reducing ambiguity and clarifying expectations for all parties, including regulators, land managers, agents, local communities, and the public. Such improved clarity would be beneficial to the industry as it would lead to swifter approvals and delivery, because less time would be spent on debating interpretation.

There are many instances where the wording of the UKFS' requirements or guidelines do a good job of explaining the importance of sustainable forest management but are also sufficiently vague to allow scope for forestry managers to circumvent good practice while technically complying with the UKFS. For instance, the section on Biodiversity says, '*The impacts of forestry on the environment must be taken into account in the submission of forestry proposals.*' However, there is no further explanation of how to demonstrate what this means in practice, so the discretion of what to consider (and what to actually **do**, as a result of the consideration) is often left to a commercial forestry operation. On soils, it says, '*Consider the potential impacts of soil disturbance when planning operations involving cultivation, harvesting, drainage and road construction*.'

The detailed reflections in section 5 below (as well as the summary table in the annex) contain many proposals for improving and clarifying the language to address these concerns. Overall, however, **the revised UKFS must make more use of clear verbs such as 'must' or 'must not', linked to**

[31] https://forestry.gov.scot/publications/support-and-regulations/655-uk-forestry-standard-compliance-procedures

specific requirements and actions – and reduce the use of vague (and unenforceable) phrases such as 'should', 'consider' or 'avoid'.

Public interest

The UKFS defines sustainability in the UK context. Forestry is not sustainable where it conflicts with the public interest – an interest that, by the decisions of all four governments and Parliaments, includes the conservation and enhancement of biodiversity. This needs to be made clear in the UKFS, and re-drafting to make more biodiversity considerations and action a requirement, and to reduce the ambiguity of guidelines will reduce conflict and steer the sector towards true sustainability.

Ecosystem restoration (especially native woodland expansion, including the rainforests and Caledonian pinewoods), deer management and peatland restoration are all key areas of public interest affected by, and potentially delivered by, forestry. These are all areas where the UK governments have agreed public policy objectives and have committed considerable funds. These public policy objectives must be reflected in the wording and implementation of the UKFS and its operation – as well as in the decisions and spend of the forest authorities, which must advance (not conflict with or undermine) those objectives.

This recognition of the public interest and the public benefit that forestry can deliver, in the way it is (or is not) carried out, must be clearer. This is both important, in principle, but also because forestry is often driven, and underwritten, by public funds. Public funding for land management should be more closely tied to requirements related to the public interest, such as biodiversity and carbon management. In forestry, the wording (and enforcement) of the UKFS is a clear mechanism to deliver this link in practice.

Cumulative impact

The current UKFS is focused on guidance to individual forest managers responsible for separate Forest Management Units (FMU). This is commendable but is only one part of the overall impact (positive or negative) that forestry has on biodiversity.

In addition, it is crucial to address cumulative impact. Where one or two schemes can fit within a landscape or "place", multiple schemes have a cumulative impact that can easily become negative. For instance, minor damage to biodiversity interests in a specific location might be deemed tolerable in isolated cases, but if that damage is repeated in two or more similar or nearby instances, the negative impact is much more likely to be significant. This is especially the case where commercial forestry is very heavily reliant on Sitka spruce complemented by limited diversity of other species. As one example, in parts of the country where commercial forestry is concentrated, the shelter provided has increased the growth of the deer population, leading to even trees like Sitka spruce becoming heavily browsed and reducing the scope for other land uses. This reduces biodiversity at landscape scale and has significant negative impacts on other key elements of sustainable forests and landscape - including opportunities for communities, soils, water and landscape character.

Equally, positive impacts might be maximised (or be 'greater than the sum of the parts') by schemes coordinated across a landscape to increase ecological connectivity and provide both species and habitat diversity (such as separate projects to deliver connectivity to the Scottish rainforest).

The UKFS must, therefore, acknowledge the challenges and opportunities of cumulative impact, and provide rigorous guidance to both the industry and decision-makers on how to address these in their regional contexts, perhaps at catchment scale. For instance, in Scotland, there should be a greater and clearer requirement that forestry should, at the least, develop according to the principles of the national Land Use Strategy and in accordance with plans developed by Regional Land Use Partnerships. Consideration might even be given to suggesting a guideline proportion of land cover in a catchment that should be given over to one forestry model before the cumulative impact of adding to that needs to be assessed.

Consultation

It is noted that there is an increasing requirement from the forestry authorities for consultation on proposed afforestation and/or forestry operations. However, it is unclear how uniform this requirement is, and whether it is being done to the right level. Given the impact of forestry on both local communities and public policy objectives of national importance, it is vital that consultation (both with

communities of interest and those of place) is enhanced. The revised UKFS should seek to encourage best practice, such as the national standards for consultation[32], or good practice from other sectors such as windfarm developers. More detail on the principles we would like to see applied to consultation can be found in 'A Call to Enhance the People Theme of the UKFS'.

[32] https://www.scdc.org.uk/what/national-standards

5. Detailed comments on current content of UKFS

The following reflections are offered in the order in which they first appear in the current (2017) version of the UKFS. Where a requirement/guideline is repeated (and/or cross-referenced) in different sections of the UKFS, it is addressed at its first occurrence (but the issue will need to be addressed at each occurrence).

We understand that this review will seek to address the structure and numbering system for the UKFS, to reduce repetition and confusion that often arises from the current version. This is very welcome, and we look forward to the new approach; however, of necessity, the following comments use the existing system.

UKFS *requirements* for General Forestry Practice (page 22-26)

Forest planning

GFP requirements 9-18, page 25-26

Whilst there are parts of the biodiversity guidelines which deal quite well with native woods and other priority habitats, these are not sufficiently strongly carried into the overarching General Forest Practice Requirements and Guidelines sections, especially the Forest Planning requirements and guidelines.

There is no requirement to develop ***distinct plans*** for native woods or other priority habitats; they can instead be treated as features of a wider Forest Management Unit (FMU) plan. This risks sub-optimising their management by not requiring an adequate appraisal and therefore sub-optimising the aims, objectives, prescriptions, and monitoring and subsequent feedback to revising aims and objectives. Indeed, the Forest Planning issues/factors section does not even list native woods or biodiversity features as a factor. The biodiversity guidelines (see below) also use rather weak language in relation to priority habitats in places saying 'consider'… instead of 'should' or 'must' improve or protect.

The combined effect of this is to signal that native woods and other priority habitats do not need distinct plans and can be accommodated in a wider plan as a feature. This will make it less likely that they will receive suitable evaluation and treatment.

Recommendation
Strengthen the UKFS to require distinct plans for native woodlands above some threshold of size and importance. These to be either stand-alone FMU plans, or distinct sub-plans nested within larger FMU plans***. In either case, the area concerned should be adequately mapped, described, and evaluated, with long term aims, short term objectives, prescriptions and monitoring and feedback all included.*** This should probably include ancient woods that are currently not native in composition in this too, because restoration to native woodland should be considered as an option. A similar should also be applied to important non-woodland habitats.

An addition should be made to the General Forest Practice guidelines' section on forest planning on page 25, (suggested addition in bold) such that it reads:

> *"Forest planning applies to a convenient management unit, called the forest management unit (FMU). The plans will vary with the scale of the forest and the size and nature of the holding – usually called the forest management plan**. Significant areas of native and ancient woodland and other priority habitats need to be comprehensively treated within the overall plan and this may/will often require a distinct management plan forming a part of the overall FMU plan**."*

This should be reinforced by adding a specific GFP requirement, perhaps inserted between current GFP requirements 10 and 11 (or as an additional part of requirement 10), along these same lines.

A further improvement would be to add biodiversity sites and opportunities to the table describing factors to consider in the planning process on page 27 from which it is strangely absent. Strange, given that 15% of each FMU currently, and perhaps 25% in future, should be managed with biodiversity as a major objective.

UKFS *guidelines* on General Forestry Practice (page 27-36)

Forest productivity

GFP guidelines 4-8, page 31

It is not necessarily appropriate, when biodiversity conservation and recovery are properly taken into account, that there will be a "maintenance of the productive potential of forests. " This does not allow for approaches based on natural regeneration wherein area, species mix and woodland structure are likely to fluctuate over time and cannot be strongly controlled. Specifically, converting PAWS back to native woodland will not readily meet this criterion. This wording is amended to note that economic potential can be reduced where part of a planned approach to develop stated non-market value such as ecosystem services or a recreational resource.

Recommendation
The section on forest productivity should be reviewed and amended to make clear that short-term reductions in economic productivity are often necessary (and in the public interest) to secure long-term biodiversity and other non-market benefits.

Forest structure

GFP guidelines 9-10, page 32[33]

We are not aware of any sites on which correct usage of the Ecological Site Classification would suggest that 'only one species is suited to a site and management objectives', so this statement should be removed. The stipulation that 'a maximum of 75% may be allocated to a single species' should be reduced to 50%, this is essential to provide better resilience to the potential impacts of pests, diseases and abiotic threats. Alongside this, the proportion that should be native broadleaved trees and shrubs within an individual forest management unit (such as woodland creation scheme or existing forest) should be increased to at least 15%, with a minimum of 10% open ground to be managed for the conservation and enhancement of biodiversity as the primary objective.

Secondly, these two guidelines, when read together and taking account of the preamble on page 31, appear to mean that there are no clear requirements for structural or tree species diversity in small woods (under 10ha). The condition that the surrounding land uses should provide landscape and habitat diversity is very vague and has little value. How much diversity is necessary, and of what? Since these areas may well be outwith the FMU and probably under different ownership or management, there will be no linked management control.

However, efforts to create or maintain diversity in small woods can cumulatively be very significant for biodiversity, especially in lowland farmed landscapes. Furthermore, all woodlands need to be resilient and smaller areas are actually less so because of their size. Thus, this apparent 'exemption' for small woods under 10ha should be removed.

Thirdly, native woods, both small and large should be managed largely to sustain and enhance their natural characteristics of biodiversity and other distinctive values suited to the site, so it is right to treat them differently in terms of species and structural rules. An introductory sentence (or additional note) should be added to indicate that these guidelines apply only to non-native woods.

Finally, care should be exercised in the application of guideline 10. While such linkages can often benefit biodiversity, there can also be risks. For example, planting a small wood with non-native trees so that they are close to an area of native woodland next door would probably have a negative impact on the latter. Guideline 10 should therefore be caveated to reflect the need to prevent the spread of non-native trees from planted forests to natural habitats.

[33] GFP Guideline 9 is repeated as Guideline 10 on Forests and Biodiversity (page 48) and as Guideline 25 on Forests and Carbon (page 76).

Recommendation
GFP Guideline 9 should be re-drafted to read:
"Maintain or establish a diverse composition within the forest management unit. A maximum of 50% may be allocated to a single species (see notes below). Guidance on species selection appropriate for the site (e.g. Ecological Site Classification tool) should be used to enhance resilience and mitigate risks. In all cases, incorporate all of the below:

• at least 15% native broadleaved trees or shrubs;
• at least 25% of other species (which may include diverse conifers or native broadleaves); and
• at least 10% open ground, or ground managed for the enhancement of biodiversity as the primary objective.

To provide resilience to pests, diseases and abiotic threats associated with climate change, intimate species mixtures, or a matrix of small patches of single species blocks, should be established. Contiguous single species blocks must not exceed 20 hectares."

GFP guideline 13, page 32[34]

This guideline to manage "a minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective" allows the minimum 10% open space and 5% native trees and shrubs (in GFP 9) to be adopted as meeting this requirement.

The sentiment of managing an area of the forest with the enhancement of biodiversity as a major objective is a very positive one. However, in practice, the good forest practice often fails to deliver for two key reasons. First, the area is too small. Secondly, there is a lack of evidence that effective objectives, ones that make a real impact on the status of local species or habitats of conservation interest are being set or delivered in many forests. Thirdly, there is little evidence of actual enhancement work taking place in forests, particularly in relation to open habitats.

Thus, in an average forest in the south of Scotland, its often not possible for an ecologist to look at the forest and see what area is actually being managed with biodiversity as a major objective. Ladhope Moor near Galashiels, for example, has a series of rides along roads and wayleaves – so the open ground hasn't been selected in terms of the more important areas of open ground habitat that existed prior to afforestation but by convenience for other forest management factors. Then, there are a few small areas of broadleaved trees in tubes, which add up to much less than 15%. The rest of the forest is mid rotation Sitka spruce which on account of its lack of habitat or species interest can't have an effective biodiversity enhancement objective. When the forest was planted it contained areas of heathland and acid grassland. With consideration of habitat information, even just from aerial photography, the better areas of open habitat (heathland) could have been picked out and left as open ground and the acid grassland afforested. This would have reduced the habitat loss and delivered much better against the sentiment of this guideline, with little impact on the forestry objectives.

By contrast, Loch Ard Forest, near Aberfoyle, is an excellent example where commercial Sitka plantations have networks of open ground habitats with regeneration of native woodland following watercourses throughout the forest, which has been deliberately planned.

These two contrasting examples of actual practice illustrate how guideline 13 needs to be improved and better implemented/enforced. Both examples are 'in theory' consistent with guideline 13, but one provides no biodiversity benefit (and probably losses) while the other delivers conservation and possibly enhancement.

Recommendation
GFP Guideline 13 should be re-drafted to read:

> "25% of the forest management unit will be managed for nature conservation and the enhancement of biodiversity, informed by a brief ecological assessment of the most appropriate opportunities, a list of potential options is given below:
>
> - PAWS restoration
> - Native woodland regeneration

[34] GFP Guideline 13 is repeated as Biodiversity guideline 19 (page 50)

- Bog or sand dune restoration from plantation
- Native woodland enhancement (Non-native tree removal, INNS removal and protection from browsing)
- Coppicing (in England and Wales only)
- Native woodland grazing
- Open priority habitat conservation management plan
- Open areas of semi-natural habitats of conservation interest (including priority habitats) retained in afforestation.
- Natural colonisation in buffer zones around existing Ancient Woodland edges.
- New native woodland planting.
- Continuous cover forestry of existing Scots Pine plantations (native conifer).
- Long retention conifers (of any species) in Red Squirrel areas.
- Appropriate retention of dead wood reserves within the forest."

This recommendation is based on the following rationale:

1. Without some kind of brief assessment, it is not possible to understand what effective opportunities there are to manage part of the forest area for nature conservation and the enhancement of biodiversity. The outputs of this assessment should be presented in a section of the forest plan for transparency. The assessment need not be onerous and could be developed by a forester with relevant training, an ecologist, or from information provided by local stakeholders. A simple paragraph rationale in the forest plan would suffice.
2. "as a major objective" is changed to "managed", rather than an objective in a plan, which isn't visible on the ground in an effective way, it makes sense to ask explicitly and simply for these areas to actually be managed in this way.
3. A list of potential options for what managing for nature conservation and the enhancement of biodiversity could potentially look like in a forest is given.
4. Quality over quantity. In the list, some options are preferred as they can deliver higher nature conservation benefits. Some of these can be more onerous in terms of management input. To recognise both extra inputs but also greater benefits, the area requirement is cut in half.

Felling and restocking

GFP guideline 16, page 33

This guideline seeks to promote age diversity amongst extensive areas of even-aged trees, calling for a minimum height difference of 2m between adjacent coupes before restocking takes place. However, there is doubt about both its relevance across the whole of the UK and its application in practice.

There are considerable differences between the coupes found in lowland England and those in the western highlands of Scotland. In upland Scotland, increasing crop instability in even-aged 20th century plantations, coupled with periods of low timber prices, has driven a desire for economies of scale, and this has led to an undesirable move towards larger coupes. The impact of delayed restocking to avoid *Hylobius* outbreaks has further weakened the sector's willingness to follow this guideline, which in practice has become at best a requirement for the felled coupe to "green up" before further felling takes place, with even this requirement avoidable if windblow occurs.

As a result, this guideline has limited effectiveness as a measure to promote age diversity in even aged plantations but must fall into the category of "better than nothing". It currently assumes a business-as-usual approach of felling and restocking even aged (and sized) monocultures. Guidance should focus on greater use of mixtures introducing size, shade and structural diversity into stands and greater transformation to low impact silviculture systems (continuous cover forestry) wherever possible (i.e., wind allowing). **It is**, therefore, **recommended that**:

> This guideline is replaced with a clearer requirement to produce a plan for achieving or maintaining age diversity, and thus resilience, in plantations.

GFP guideline19, page 33

This guideline states “In semi-natural woodland, limit felling to 10% of the area in any five-year period unless there are overriding biodiversity or social advantages”.

This may not be a significant problem in practice, but this wording could suggest to readers that it is fine to fell (including clear felling) up to 10% in each 5-year period as a norm. If taken literally this would mean that up to 40% of a semi-natural wood being felled in a 20-year forest plan is regarded as acceptable. However, semi-natural woods are those where natural regeneration has been and should continue to be the predominant means of regeneration rather than planting. Such woodlands should normally be managed by felling small coupes or gaps with a rotation length suited to the biological age of the dominant tree species (80-250 years depending on woodland type). So, the area felled should match the ability to regenerate and character of the wood, and 40% as a normal maximum over 20 years seems far too high as a rule.

There will be exceptions, where the whole wood is overmature and a more rapid effort should be made to regenerate, especially in even aged birch and pinewoods, but this is recognised in the current exception wording.

Recommendation
The guideline should be re-drafted to add a second limit relating to the 20-year period of a forest plan, (see bold text below):

> *“In semi-natural woodlands **where natural regeneration should be used wherever possible**, limit felling to 10% of the area in any 5-year period **and no more than 20% in any 20 year period**, unless there are overriding biodiversity or social advantages.”*

Biodiversity chapter – introductory text (page 38-40)

This section provides a valuable introduction to the biodiversity requirements and guidelines. **Subject to some updating to reflect both the scale and urgency of the biodiversity crisis, and the changed global/national contexts (see above), its overall structure and content is appropriate and should be retained.** In addition, however, the importance of biodiversity should be better recognised by ‘signposting’ this content in the general introduction and overview.

Notwithstanding the above, however, some additional reflections that might be taken into account in the revision (both of this section and the UKFS as a whole) would include:

1. It is (or subject to the above updating, could be) a strong narrative. However, the following specific requirements and guidelines of the UKFS need to live up to that narrative. In addition, however good the narrative may be, it is only as effective as what actually happens on the ground (see previous comments on monitoring and enforcement). This introductory text should highlight the forestry authorities’ commitments to monitoring and enforcement – in order to better encourage fuller compliance.

2. There is a tendency to see tree planting as an unconditional good thing (both for carbon and biodiversity). This is often the case – but this text should state clearly that it is not always the case and there are situations where afforestation is undesirable or should only be permitted via natural regeneration of native species. This is the nuance of “the right tree in the right place”.

3. There is a need for a stronger and more specific focus on native woodlands: Scotland has the opportunity, based on the comprehensive mapped survey work in Native Woodland Survey to move beyond this and prioritise action for areas in and around areas of highly semi-natural woodland defined from NWSS. As noted in the Scottish Government’s seeking views on a new biodiversity strategy[35], Scotland’s woodlands include globally important areas of Scottish rainforest, including oak and hazel woodland, and Caledonian pine forest. These are recognised as being of very high value to biodiversity, but currently fragmented and restricted in range. The

[35] https://www.gov.scot/publications/scotlands-biodiversity-strategy-consultation/

global and national imperative to protect and enhance (both in quality and extent/connectivity) these woodlands must be recognised by the revised UKFS.

While the above relates to Scotland, it should also be noted that the rainforest extends to western Wales, and there are similar important native woodland types in England, Wales, and Northern Ireland (such as N. Irish hazel woods) that should be acknowledged, and conservation actions encouraged.

UKFS *requirements* for Forests and Biodiversity (page 41-42)

Biodiversity in the wider landscape and Biodiversity Action Plans
(Biodiversity requirements 3 & 4, page 42)

Biodiversity requirements 3 and 4 are linked/overlapping and currently read:

> "The implications of woodland creation and management for biodiversity in the wider environment should be considered, including the roles of forest habitats and open habitats in ecological connectivity."
> and
> "Particular consideration should be given to conserving, enhancing or restoring priority habitats and species identified in the statutory lists of priority species and habitats for England, Scotland, Wales and Northern Ireland, through the delivery of country biodiversity strategies and local level plans."

It is positive and welcome that native woodland creation, open habitat retention and priority species conservation in the woodland area are encouraged. However, effective methods for assessing and if necessary, controlling the destruction of habitats by afforestation in the footprint of the woodland application are not considered. This is resulting in significant habitat and species loss and is currently one of the primary drivers of the biodiversity crisis in the UK.

In many cases, this guideline could potentially be effectively employed and result in net biodiversity gain alongside other forestry objectives; for instance, where the woodland creation isn't on sensitive habitats and native woodland can regenerate or be planted within the new forest area, or the small areas of open semi-natural habitats within the footprint can be retained as open ground and managed appropriately within the new forest.

However, there are inadequate assessments and considerations to stop open semi-natural habitats and priority species being destroyed by woodland creation. Particularly if the majority of the proposed woodland creation area has significant ecological interest, this could all be destroyed even if the UKFS guidelines and good forest practice are followed. The current UKFS can, and does, allow nature rich (priority) habitat, hosting important biodiversity (including priority species) to be destroyed without any assessment or even consideration necessary. As it stands, this is a "nice to do" with no obligation on the woodland developer or relevant forestry authority.

These problems arise because:

1. The wording "should be considered" – this means that it doesn't necessarily have to be considered and then, even if considered, it could be considered but not acted on.
2. The sentiment of conserving, enhancing or restoring priority habitats and species is applauded, but in reality, no action is required. If they are just mentioned or "considered" and no meaningful action is taken and, as in many cases, priority habitats are destroyed by afforestation, this would surely amount to "greenwashing".
3. There is no accountability or meaningful auditing figures available. Our observed experience is that an audit would find that significant areas of semi-natural habitat (including priority habitats) rich in biodiversity (including priority species) are destroyed every year by afforestation. In many cases, "consideration" alone does not result in meaningful biodiversity improvements.

There are, unfortunately, many examples of priority species and habitats being damaged or destroyed by afforestation which was ostensibly compatible with the UKFS standard. Many Northern Brown Argus butterfly (a UKBAP priority species, Butterfly Conservation High Priority Species) sites,

including its associated lowland or upland calcareous priority grassland habitat have been afforested in the south of Scotland (for instance Headshaw, near Ashkirk). A “local Biodiversity Site” (Brown Moor Heights) with important fen and grassland priority habitats was planted. Some of the last remaining areas of lowland heathland in Berwickshire was also planted at Gordon. These represent just a few of many similar sites of important habitats and species being destroyed or damaged by UKFS compliant forestry.

Biodiversity is, of course, one of several considerations that needs balanced in afforestation and land management. However, the current lack of consideration of these features (often not even surveyed or known about by the land manager or forestry authority) means they cannot be properly considered alongside other objectives. The recommended re-draft, below, seeks to bring a meaningful consideration into the UKFS, but still provide a high degree of flexibility for consideration amongst other woodland objectives and considering the cost and practicality implications of doing so.

Recommendation
Requirements 3 & 4 should be replaced with three new requirements (with appropriate new numbering):

> “Existing semi-natural habitats of high biodiversity value (including priority habitats) and rare or declining species (including priority species) within the proposed woodland area must be clearly described in woodland creation applications”.
>
> “Woodland creation and management, including associated open ground, must demonstrate a meaningful contribution to habitat networks, where native woodland or open semi natural habitats (priority habitats) occur adjacent to or within the woodland area.”
>
> “If semi-natural habitats of nature conservation interest (including priority habitats) or rare species (including priority species) are present, there should be no net biodiversity loss in woodland creation or management”.

The rationale to the above is, first:

- Woodland creation involves significant land use change by both habitat and area (more so than other more closely regulated land use changes) and therefore has high potential to have significant ecological impacts, including both positive and negative.
- The UK and devolved governments have made several key commitments to biodiversity (see above), so would want to have understanding/information on the more relevant potential drivers of biodiversity change. This is necessary both to inform individual forestry decisions and wider policy.
- Significant public money is involved in woodland grants, and it is in the public interest to understand the most relevant potential drivers of biodiversity change to inform how public money influences biodiversity loss and gain. Otherwise, we risk spending public funds on habitat and species destruction, in an uninformed way.
- The information can be gathered cheaply (for example a few pounds per hectare for habitat survey and small administration fee for a data search from a biological records centre per hectare). An NVC survey and local biological data search would be an ecologically sensible minimum standard, some cases would additionally require species surveys (such as breeding bird surveys where appropriate). All sites, large and small, should be surveyed as some of the smaller woodland plantings in the lowlands have destroyed some of our rarest and most diverse priority habitats, for example calcareous grasslands. If an aerial survey confirmed there was no semi-natural habitat, then an NVC survey wouldn’t be required. This detail could be explained in a footnote. Responsible forest managers do some or all of this already (such as Forest and Land Scotland, Tilhill Forestry and Buccleuch Estates).
- The information collected is important for the considerations of the relevant forestry authority, other agencies, and stakeholders so that informed decisions can be made on significant land use change and public spending. The guidance is not restrictive in that it only asks for information to decide, so all aspects can be considered in the application.
- Consideration cannot be given to conserving, enhancing or restoring priority habitats and species identified in the statutory lists of priority species and habitats if the land manager or forestry authority do not know what priority habitats and species are present on the land, survey is required.

Secondly:

- Differentiating and providing clarity between a) understanding/describing the impact of the woodland planting on existing habitats and species within a proposed woodland area (above) and b) woodland design – planting and management of existing woodland, its contribution to habitat networks (this guidance point).
- This guidance should only apply where there is existing native woodland or open habitats within or adjacent to the woodland. It need not apply in other cases.
- "Consider" is replaced by "meaningful contribution", which is a commitment to deliver something if relevant, but what is to be delivered can be defined by the forest plan, providing flexibility for the local situation. Guidance could be developed to support the application of this point to deliver biodiversity and public benefit.
- It needn't require additional areas other than the (15 to 30%) required to be managed for biodiversity in other guidance points.
- The two most common methods, as a result of opportunity and cost, would be regeneration of native woodland (such as along watercourses) where there was already some native woodland in restocking coupes or leaving areas of semi-natural vegetation of biodiversity value as open ground when planting, to retain habitat areas. Both of which are of low or no additional cost to wider woodland management (assuming wider deer control in the case of native woodland regeneration). Restoration of open habitats would also be relevant to this point but requires grant support and would be ecologically appropriate/opportune in a smaller number of woodlands.

Thirdly:

- Any responsible land manager would not want to damage nature on their land and public money should not be funding habitat or species destruction or degradation.
- "Particular consideration" is woolly and could logically be interpreted as no obligation or on the ground action is required. "No net biodiversity loss" is both specific and flexible.
- The concept of "no net biodiversity loss" is flexible in that it lets, for example, an existing open priority habitat be replaced by a woodland priority habitat. A rare open ground species be replaced by a rare woodland species. It therefore balances woodland expansion objectives with biodiversity loss objectives and encourages maximising the former and minimising the later. We feel it appropriate not to be too prescriptive on what no net biodiversity loss means in particular situations so as not to be too restrictive, and to let local stakeholders and forest managers make a case for consideration in any applications. Although guidance could be developed if the forestry authority thought this would be required.

UKFS *Guidelines* on Forests and Biodiversity (page 43-56)

Priority habitats and species

Biodiversity guidelines 1-4, page 44

These guidelines simply require a range of issues to be "considered" or "assessed". There is no indication of what, if anything should be the outcome of that consideration – and whether delivery of that outcome is a "could", a "should" or a "must".

In view of the greater urgency for biodiversity globally, and in the UK, in 2022 – in the face of ongoing losses - this is too discretionary. Anecdotally, the evidence also suggests that, even when applied, a minimalist approach is often taken.

Recommendation
These guidelines should, therefore, be reviewed and revised to provide greater clarity as to what outcomes are sought, and what actions should be carried out to help achieve those outcomes. For instance, guideline 2 might include an additional text that "management plans must aim to enhance and maintain biodiversity and show how this will be done".

Biodiversity guideline 5, page 44[36]

This guideline relates to peat, and currently reads:

> "Avoid establishing new forests on soils with peat exceeding 50 cm in depth and on sites that would compromise the hydrology of adjacent bog or wetland habitats".

The importance (to climate and biodiversity) of peatland conservation and restoration was described above (see page 9). Given that context, and the fact that more than 70% of the carbon stored in British woodlands is contained in the soil (Vanguelova et al., 2013), much more emphasis on the role of foresters as custodians of soil and especially peat is needed. A range of forest management practices have recently been reviewed to assess their impacts on soil organic carbon stocks (Mayer et al., 2020), this work should inform the UKFS.

The evidence base regarding establishing new forests on deep peat is developing with several new papers since 2017. In England a more precautionary principle has been adopted to protect peatland habitats and carbon storage. Defra, the Forestry Commission and Natural England published 'Decision support framework for peatland protection, the establishment of new woodland and re-establishment of existing woodland on peatland in England June 2022', which states that woodland creation 'will not be approved on areas of peat greater than 30 cm deep and hydrologically linked surrounding areas'. There is a caveat that low density woodland may be appropriate if agreed with the Forestry Commission. Furthermore, this peat depth is used in restocking decisions, so that very careful consideration is required before restocking on peats deeper than 30 cm can be approved.

Based on the above, the **recommendation** for this guideline is that:

1. This guideline should be re-drafted as a requirement (and hence renumbered and moved to requirement section).
2. The wording should be strengthened to make clear in this sub-section that there is a presumption against woodland creation on any deep peats, and the note related to "highly modified" peat soils removed – or clarified that the presumption should be for peatland restoration with woodland only an exceptional occurrence (with the relevant conservation agencies to advise on such exceptions).

Finally, we suggest that the section(s) on restocking (GFP guideline 18, page 33[37]) should be specific about not re-stocking deep peats and should use the same reduced thresholds. Just like the presumption that Plantations on Ancient Woodland Sites should be restored, it should be presumed that where forests were previously established on deep peats, restoration is the priority.

The current suggestion (carbon guideline 8) that the balance of benefits for carbon and other ecosystem services should be "considered" does not match with current recognition that we are facing both climate and nature emergencies. If 30% of the land is to be protected by 2030, this must include habitat restoration that sometimes includes tree removal. Recent evidence such as Vanguelova et al., (2019) and Friggens et al. (2020) makes it clear that establishing trees on organo-mineral soils is not a climate mitigation measure to contribute to relatively short-term net zero targets. Changing the peat guidance to a requirement for both afforestation and restocking and considering cultivation techniques and other forest management impacts on organo-mineral soils are the best ways for UKFS to improve its approach to managing carbon in forests and woodlands and through the whole forest planning, managing, and harvesting cycle.

<u>Native woodlands</u>
Biodiversity guidelines 6 and 7, page 45

[36] Biodiversity guideline 5 is repeated as Guideline 5 on Forests and Carbon (page 70) and Guideline 24 on Forests and Soil (page 157).
[37] There are also specific references to re-stocking on peat in Forest and Carbon guideline 8, page 71, and Forest and Soils guideline 25, page 158.

The quality of establishment and future care of new native woods is a big issue judging by the report, commissioned by Forestry Commission Scotland in 2014[38]. The UKFS, both generally and in this section, have a stronger and more specific focus on native woodlands.

The fourth paragraph of the introductory section refers to published guidance to improve ecological quality of new native woods being available. This may be indirectly found via the generic 'further information' links at the end of the UKFS, but it is unclear how. This reference should, therefore, be revised to provide a specific reference and/or weblink to the guidance.

The text of these guidelines currently read:

> "Manage native woodlands to ensure their biodiversity is maintained or enhanced; base management proposals on protecting or extending semi-natural features characteristic of that woodland type and pay particular attention to ancient semi-natural woodlands."
>
> "In ancient semi-natural woodlands, avoid introducing non-native species unless they would maintain or enhance the ecological function of the woodland."

These guidelines, especially 7, relate to introducing non-native species. Yet, it is unclear in what circumstances could such non-native species "improve ecological functioning" and when would this be sufficient to offset the reduction in naturalness. The wording in these guidelines need to be clarified, possibly simply be removing the word 'introducing', or by requiring managers to show their thinking on proposals to use non-natives, including consideration of the potential for natural regeneration instead of planting.

Guideline 7 provides a very ambiguous and broad category of exception, with no supporting evidence or additional guidance on what criteria might be used to decide. The only relevant statement in the supporting text is within the section preceding Guideline 12, two pages later on page 47, where it is stated that "there is also new evidence that the ecological implications of localised tree species loss could be mitigated by encouraging the establishment of alternative tree and shrub species which are ecologically similar."

This apparent criterion for the use of non-native species may refer to the case of ash dieback and substitution with sycamore, but this is a very specific problem and *introducing* sycamore (as opposed to not clearing it from existing sites) even in these rather extreme circumstances is not necessarily going to be the right answer; cases will vary. Anyone wanting to plant non-native trees for a variety of motives in an ancient semi-natural wood could potentially justify their argument with reference to some ecological value the new tree has to something: a pretty low bar to set.

In addition, these 2 guidelines refer to different categories, namely 'native woods' and 'ancient semi-natural woods' which is a subset of the former. So, is the reader to infer that the test in Guideline 7 does not apply at all to other native woods, including all the many non- ancient semi-natural woods?

Recommendation

These two guidelines should both refer to native woodlands for consistency. The bar for introducing new non-native species to them should be clarified and raised so that it is not wide open to any claims that species x or y would improve some ecological function or other. The guidelines should, therefore, be re-drafted to address these issues and read something like:

> "Manage native woodlands to ensure their biodiversity is maintained or enhanced; base management proposals on protecting or extending semi-natural features characteristic of that woodland type and pay particular attention to ancient semi-natural woodlands and plantations on ancient woodland sites."
>
> "Avoid introducing non-native species which are not already present into native woodlands, especially into semi-natural areas. In some exceptional cases, such as large-scale disease loss, there may be a case to introduce another tree to help maintain key ecological functioning."

[38] Worrell R, Mackenzie, N and Clifford T (2014) An assessment of planted new native woodland in Scotland 1989-2011: unpublished, but available at https://scotland.forestry.gov.uk/images/corporate/pdf/new-native-woodlands-assessment.pdf

This issue, and the decision-making it relates to, underlines the need for management planning of sufficient depth and quality to consider issues such as this for native woods (see discussion of forest planning above).

In addition to the issue of non-native species within native woodlands, it is also important to recognise that many forests are themselves non-native species. Where such species can seed and regenerate, any spread can beyond the forest itself can result in the resultant trees being considered as "invasive non-native species". This is a particular threat to native biodiversity where plantations are adjacent to important habitats such as peatlands or native woodland. In such circumstances, forest managers should seek to prevent such encroachment and, where it occurs, take steps to remedy it (in line with the 'polluter pays' principle[39]).

Ecological connectivity

Biodiversity guideline 8, page 45-46

This guideline seeks to promote habitat connectivity, encouraging forest managers to "improve the ecological connectivity of the landscape for woodland and other species by extending and linking habitat features; consider the juxtaposition of wooded and non-wooded habitats and aim for the best overall result for biodiversity".

This is positive but there should also be wording on the minimum size of individual areas of habitat needed to be capable of sustaining a full or high proportion of characteristic species and features.

Thus, we are supportive of this guideline and would like to see it expanded to include the importance of the scale of habitat needed to make a landscape contribution. Re-establishing connectivity for many characteristic species requires more than thin strips of native trees between woodlands, yet often this, or small 'stepping-stone' patches are being created. These can easily be too small for wildlife and have long edges with high potential for invasive seeding of non-native species, including neighbouring non-native trees. It is worth mentioning also that riparian woodland strips can provide useful habitat connections. We therefore recommend that a revised guideline makes it clear that proposals to increase ecological connectivity should include a rationale for their effectiveness, with reference to the scale of each proposal in relation to the nature of the connection it is seeking to establish.

Cumulative Impact
We also see the need to consider the cumulative impact of large-scale commercial proposals from a regional perspective to fully understand the implications for ecological connectivity and biodiversity. The regional context is also the best frame for identifying opportunities to make connections through larger schemes and RLUPs could be ideally placed to provide this, as demonstrated by the Scottish Borders work on a Land Use Strategy and planning appropriate locations for forestry for multiple objectives. We therefore recommend that the need to consider both large-scale proposals against the RLUPs' perspectives on regional woodland strategy is built into the UKFS. Consideration should also be given to suggesting a guideline percentage of land cover in a catchment that should be given over to one forestry model before the cumulative impact of adding to that needs to be assessed.

Finally, there is normally no monitoring of the ecological development of the measures taken under this guideline. Some reference to ongoing monitoring and the use of those results in future management should be included.

Recommendations
- The guideline should make clear that proposals to increase ecological connectivity should include a rationale for their effectiveness, with reference to the scale of each proposal in relation to the nature of the connection it is seeking to establish.

[39] See ss.17-19 of the Environment Act 2021 and ss.13-18 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021.

- The UKFS should require large-scale afforestation proposals to be considered against the RLUPs' perspectives on regional woodland strategy.
- This guideline (and/or a generic guideline elsewhere in the UKFS) should underline the need for ecological monitoring, and the use of those results to inform future management.
- Consider suggesting a guideline percentage of land cover in a catchment that should be given over to one forestry model before the cumulative impact of adding to that needs to be assessed.

Tree and shrub species selection

Biodiversity guideline 10, page 48

Biodiversity guideline 10 is a repeat of GFP guideline 9: the comments above on GFP guideline 9 apply here too.

(Biodiversity guidelines 11 & 12, page 48)

These two guidelines are potentially at odds with one another and thus some redrafting is desirable to provide further guidance on how to resolve any such conflict. It is recommended that native woods should be excluded from guideline 12, other than in exceptional circumstances.

In addition, more emphasis is needed on use of natural colonisation instead of planting for genetic adaptation to climate change and new diseases, especially in and around native woods.

(Biodiversity guideline 14, page 48)

This guideline should be strengthened to expect natural regeneration (under a canopy) and natural colonisation (beyond the current limits of a woodland), as the default options in and around semi-natural woods.

We recommend that it be revised to state that planting should only be used in and around semi-natural woods to introduce missing and site-appropriate tree species after natural regeneration and colonisation efforts have been given a reasonable time to succeed.

(Biodiversity guideline 15, page 48)

The UKFS will need to indicate whether the Forest Reproductive Material Regulations to establish the origin or provenance of available planting material still apply, in all four jurisdictions of the UK, post-Brexit. If there have been any changes, these will need to be explained, on a country-by-country basis.

Notwithstanding any regulatory change, the guideline should continue to encourage the use of provide planting stock from local provenance; and provide advice on any voluntary scheme for identifying local provenance. It should also encourage the forest authorities and landowners to address nursery capacity that may be causing issues in the provision of planting stock from local provenance.

Forest and stand structure

Biodiversity guidelines 16-20, page 49-50

The value of diversity in forest stands and structure is explained well in the current standard. However, these guidelines may be being undermined in practice by the scope to meet them with the 'minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective' in Guideline 19.

As mentioned above (see GFP guideline 13, of which biodiversity guideline 19 is a repeat), the target minimum area could easily be taken as the satisfied by meeting the minimum area of native species broadleaves and open space target, so may not stimulate any actual conservation effort. Thus,

biodiversity guideline 19 should be amended in parallel to the recommended changes to GFP guideline 13.

In addition, we recommend that Long Term Forest Plans are required to explain the silvicultural approaches to be applied to each forest management unit, including the reasoning for the selecting the chosen approach and an assessment of the overall variation in stand structure that will be maintained in the forest. The biodiversity benefits of such planning should be outlined in the forest planning section (see above) and this section should highlight that plans should address the issues of stand structure.

Grazing and browsing

Biodiversity guidelines 40-44, page 56

This section and guidelines capture these issues well. There is a clear basis to incorporate the implications of recent policy developments around land use, biodiversity, and climate change. Grazing and browsing levels are fundamental to the recovery of peatlands and woodlands to deliver these twinned imperatives and the UKFS should reflect this priority.

In large parts of the UK, particularly in parts of England and the uplands of Scotland, new native and commercial woodlands will not be effectively established without fencing unless allied to sustainable deer management practice. Densities of around 3-5 per square kilometre are required for conifer regeneration and approximately 2 per square kilometre for broadleaved regeneration. UKFS currently only guides managers to monitor where deer damage is already happening but could deal with this issue more clearly and comprehensively. These deer densities, reflecting the findings of the Deer Working Group, as UKFS requirements.

Recommendations

- Redraft guideline 41 to read:
  "In areas where deer are present, deer management measures should must be developed and implemented as part of a management plan, ideally in co-operation with neighbours or as part of a Deer Management Group, with the aim that inappropriate levels of deer browsing do not prevent regeneration or the development of resilient woodland habitats (i.e. densities of around 3-5 per square kilometre are required for commercial conifer regeneration and approximately 2 per square kilometre for native woodland regeneration).
- The narrative introducing this section emphasises the importance of landscape scale control of herbivores to achieve natural regeneration and ecological restoration.
- Related to the above, the narrative on tree protection with both fencing and tree shelters should refer to both the costs and impacts of these approaches. Fencing costs are now at unprecedented levels, add to the carbon footprint of a scheme and continue to have the adverse effects mentioned in the current UKFS. The effectiveness of fencing in securing a diversity of tree species is being shown to be much lower than previously assumed. Tree shelters, often, end up as plastic pollution. The guidelines should therefore advise against the use of plastic tree shelters, except in exceptional circumstances (and then require proper management/collection). It should also seek to minimise fence use – with herbivore management clearly the preferred option.
- The UKFS should reflect the findings of the Deer Working Group report on deer densities and habitat recovery, setting a density of no more than 3-5 deer per km^2 (or even lower, in some cases) as the level required by sustainable forest management that will retain biodiversity and regeneration capacity.

6. Organisations supporting this paper

This call to strengthen the biodiversity components of the UK Forestry Standard is supported by:

RSPB Scotland
Woodland Trust Scotland
Trees for Life

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ANNEX

Summary table of proposed amendments/comments

Page no. (2017)	Current wording	Proposed new wording
p25	Forest planning applies to a convenient management unit, called the forest management unit (FMU). The plans will vary with the scale of the forest and the size and nature of the holding – usually called the forest management plan**.**	Add at end of paragraph: “Significant areas of native and ancient woodland and other priority habitats need to be comprehensively treated within the overall plan and this may/will often require a distinct management plan forming a part of the overall FMU plan”.
p27		Add biodiversity sites and opportunities to the table describing factors to consider in the planning process.
p31		The section on forest productivity should be reviewed and amended to make clear that short-term reductions in economic productivity are often necessary (and in the public interest) to secure long-term biodiversity and other non-market benefits.
p32	*GFP guidelines 9-10* 9. Maintain or establish a diverse composition within the forest management unit; where only one species is suited to a site and management objectives, a maximum of 75% may be allocated to a single species (see notes below). In all cases, incorporate a minimum of: ● 10% open ground or ground managed for the conservation and enhancement of biodiversity as the primary objective; ● 10% of other species; ● 5% native broadleaved trees or shrubs. Note: (i) Where more than one species is suited to a site and matches the management objectives, opportunities must be taken to further diversify the above species composition. (ii) In woodlands of less than 10 hectares and in native woods the above proportions may be relaxed as long as the adjacent land uses provide landscape and habitat diversity. 10. Develop a long-term forest structure of linked permanent habitats, such as riparian woodland, open space and broadleaves.	Remove “only one species is suited to a site and management objectives”. The “maximum of 75% may be allocated to a single species” should be reduced to 50%. The proportion that should be native broadleaved trees and shrubs within an individual forest management unit (e.g. woodland creation scheme or existing forest) should be increased to 20%. Remove the less than 10ha ‘exemption from this guideline, and the accompanying preamble paragraph on page 31. Add introductory sentence, or additional note, to indicate that these guidelines apply to non-native woods; and that for native woods the species mix and structure should be linked to ecological factors.

		Add a “where appropriate” caveat to guideline 10 and include explanation that the spread of non-native trees from planted forests to natural habitats should be prevented.
p32	*GFP guideline 13*[40] Manage a minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective.	GFP Guideline 13 should be re-drafted to read: 25% of the forest management unit will be managed for nature conservation and the enhancement of biodiversity, informed by a brief ecological assessment of the most appropriate opportunities, a list of potential options is given below. Preferred approaches include: ● Paws restoration* ● Native woodland regeneration* ● Bog or sand dune restoration from plantation* ● Native woodland enhancement* (Non-native tree removal, INNS removal and protection from browsing) ● Coppicing (in England and Wales only)* ● Native woodland grazing* ● Open priority habitat conservation management plan* ● Open areas of semi-natural habitats of conservation interest (including priority habitats) retained in afforestation. ● Natural colonisation in buffer zones around existing Ancient Woodland edges. ● New native woodland planting. ● Continuous cover forestry of existing Scot’s Pine plantations (native conifer). ● Long retention conifers (of any species) in Red Squirrel areas. ● Appropriate retention of dead wood reserves within the forest.
p33	*GFP guideline 16* *“*In forests characterised by a lack of diversity due to extensive areas of even-aged trees, retain stands adjoining felled areas until the restocking of the first coupe has reached a minimum height of 2	This guideline should be replaced with a clearer requirement to produce a plan for achieving or maintaining age diversity, and thus resilience, in plantations.

[40] GFP Guideline 13 is repeated as Biodiversity guideline 19 (page 50); amendment should be repeated too.

	m; for planning purposes this is likely to be between 5 and 15 years depending on establishment success and growth rates.*”*	
p33	*GFP guideline19* “In semi-natural woodland, limit felling to 10% of the area in any five-year period unless there are overriding biodiversity or social advantages”.	Revise guideline to include, additional (bold) text: “In semi-natural woodlands **where natural regeneration should be used wherever possible**, limit felling to 10% of the area in any 5-year period **and no more than 20% in any 20 year period**, unless there are overriding biodiversity or social advantages.”
p42	Biodiversity requirements 3 & 4 “The implications of woodland creation and management for biodiversity in the wider environment should be considered, including the roles of forest habitats and open habitats in ecological connectivity.” “Particular consideration should be given to conserving, enhancing or restoring priority habitats and species identified in the statutory lists of priority species and habitats…’	Replace requirements 3 & 4 with three new requirements: “Existing semi-natural habitats of high biodiversity value (including priority habitats) and rare or declining species (including priority species) within the proposed woodland area must be clearly described in woodland creation applications”. “Woodland creation and management, including associated open ground, must demonstrate a meaningful contribution to habitat networks, <u>where</u> native woodland or open semi natural habitats (priority habitats) occur adjacent to or within the woodland area.” “If semi-natural habitats of nature conservation interest (including priority habitats) or rare species (including priority species) are present, there should be no net biodiversity loss in woodland creation or management”.
p44	*Biodiversity guidelines 1-4*	These guidelines should, therefore, be reviewed and revised to provide greater clarity as to what outcomes are sought, and what actions should be carried out to help achieve those outcomes. For instance, guideline 2 might include an additional text that “management plans must aim to enhance and maintain biodiversity and show how this will be done”.

p44	*Biodiversity guideline 5*[41] "Avoid establishing new forests on soils with peat exceeding 50 cm in depth and on sites that would compromise the hydrology of adjacent bog or wetland habitats".	This guideline should be re-drafted as a requirement (and hence renumbered and moved to requirement section). The definition of 'deep peat' (currently "exceeding 50cm") should be reviewed and revised – ~~at least to match the 30cm definition used by Natural England~~. The wording should be strengthened to make clear in this sub-section that there is a presumption against woodland creation on any deep peats, and the note related to "highly modified" peat soils removed – or clarified that the presumption should be for peatland restoration with woodland only an exceptional occurrence (with the relevant conservation agencies to advise on such exceptions). The references to restocking on peat soils in Forest and Carbon guideline 8, page 71, and Forest and Soils guideline 25, page 158, should be amended to be consistent with the above.
p45	*Biodiversity guideline 6 & 7* "Manage native woodlands to ensure their biodiversity is maintained or enhanced; base management proposals on protecting or extending semi-natural features characteristic of that woodland type and pay particular attention to ancient semi-natural woodlands." "In ancient semi-natural woodlands, avoid introducing non-native species unless they would maintain or enhance the ecological function of the woodland."	The guidelines should be re-drafted to address these issues and read something like: "Manage native woodlands to ensure their biodiversity is maintained or enhanced; base management proposals on protecting or extending semi-natural features characteristic of that woodland type and pay particular attention to ancient semi-natural woodlands." "Avoid introducing non-native species which are not already present into native woodlands, especially into semi-natural areas. In some exceptional cases, such as large-scale disease loss, there may be a case to introduce another tree to help maintain key ecological functioning."

[41] Biodiversity guideline 5 is repeated as Guideline 5 on Forests and Carbon (page 70) and Guideline 24 on Forests and Soil (page 157).

p45-46	*Biodiversity guideline 8* "Improve the ecological connectivity of the landscape for woodland and other species by extending and linking habitat features; consider the juxtaposition of wooded and non-wooded habitats and aim for the best overall result for biodiversity."	● The guideline should make clear that proposals to increase ecological connectivity should include a rationale for their effectiveness, with reference to the scale of each proposal in relation to the nature of the connection it is seeking to establish. ● The UKFS should require large-scale afforestation proposals to be considered against the RLUPs' perspectives on regional woodland strategy. ● This guideline (and/or a generic guideline elsewhere in the UKFS) should underline the need for ecological monitoring, and the use of those results to inform future management.
p48	*Biodiversity guidelines 11 & 12*	These two guidelines are potentially at odds with one another and thus some redrafting is desirable to provide further guidance on how to resolve any such conflict. It is recommended that native woods should be excluded from guideline 12, other than in exceptional circumstances. In addition, more emphasis is needed on use of regeneration instead of planting for genetic adaptation to climate change and new diseases, especially in and around native woods.
p48	*Biodiversity guideline 14* "Encourage natural regeneration of native tree and shrub species to promote natural selection and climate change adaptation, and conserve distinctive genetic patterns – especially in and around semi-natural woodlands."	This guideline should be strengthened to expect natural regeneration, as the default option, in and around semi-natural woods. We recommend that it be revised to state that planting should only be used in and around semi-natural woods to introduce missing and site-appropriate tree species and when regeneration cannot reasonably be achieved.
p48	*Biodiversity guideline 15*	The UKFS will need to indicate whether the Forest Reproductive Material Regulations to establish the origin or provenance of available planting material still

		apply, in all four jurisdictions of the UK, post-Brexit. The guideline should continue to encourage the use of provide planting stock from local provenance; and provide advice on any voluntary scheme for identifying local provenance.
p49-50	*Biodiversity guidelines 16-20*	Biodiversity guideline 19 should be amended in parallel to the recommended changes to GFP guideline 13 (see above). Long Term Forest Plans are required to explain the silvicultural approaches to be applied to each forest management unit, including the reasoning for the selecting the chosen approach and an assessment of the overall variation in stand structure that will be maintained in the forest.
p56	*Biodiversity guidelines 40-44*	Redraft guideline 41 to read: “In areas where deer are present, deer management measures should must be developed and implemented as part of a management plan, ideally in co-operation with neighbours or as part of a Deer Management Group, with the aim that inappropriate levels of deer browsing do not prevent regeneration or the development of resilient woodland habitats (i.e. densities of around 3-5 per square kilometre are required for commercial conifer regeneration and approximately 2 per square kilometre for native woodland regeneration). The narrative introducing this section emphasises the importance of landscape scale control of herbivores to achieve natural regeneration and ecological restoration. Related to the above, the narrative on tree protection with both fencing and tree shelters should refer to both the costs and impacts of these approaches. Fencing costs are now at unprecedented levels, add to the carbon footprint of a scheme and continue to have the adverse effects mentioned in the current UKFS. The effectiveness of

		fencing in securing a diversity of tree species is being shown to be much lower than previously assumed. Tree shelters, often, end up as plastic pollution. The guidelines should therefore advise against the use of plastic tree shelters, except in exceptional circumstances (and then require proper management/collection). It should also seek to minimise fence use – with herbivore management clearly the preferred option. The UKFS should reflect the findings of the Deer Working Group report on deer densities and habitat recovery, setting a density of no more than 3-5 deer per km^2 (or even lower, in some cases) as the level required by sustainable forest management that will retain biodiversity and regeneration capacity.