

Context

Climate change is having far-reaching impacts on the health of our trees and woods. Forest, woodland and tree owners and managers have always managed risk and uncertainty, but the pace and scale of environmental change experienced over the past 25 years and expected over the next 50 years presents a challenge of an altogether different order of magnitude.

Climate change is likely to require fundamental changes to accepted forestry management policy and practice to ensure woods and trees are adapted to projected environmental conditions.

It is recognised that a sector-level response is needed to raise the profile of climate change adaptation, ensure forestry policy drives change, forestry research advances the evidence, and forest owners and managers can access knowledge to make the best decisions commensurate with their objectives and attitudes to risk. The Climate Change Accord, signed by 35 forestry organisations, is a call to collective action to address this high priority issue.

The Forestry Climate Change Working Group (FCCWG) was established in 2014 to drive this work forward on behalf of the forestry sector. The group has consulted widely, gathered evidence from a broad cross section of woodland owners and managers and produced an Action Plan. The purpose of the plan is to:

- a. Provide a single point of focus for collective action on climate change adaptation in the forestry sector, and a reference point for policy development and resource allocation, in collaboration with the Tree Health Policy Group.
- b. Recognise that there is considerable activity already taking place on climate change adaptation at all levels, but there remain significant gaps.
- c. Identify the top priority actions in the areas of policy, research and practice that will place climate change adaptation at the centre of forestry decision making, consistent with the Tree Health Resilience Strategy.
- d. Identify lead organisations best placed to own specific actions and deliver them in collaboration with others as necessary.
- e. Provide a basis for monitoring progress towards the desired outcomes.



Process

In 2015 the **Climate Change Accord: a call for resilient forests, woods and trees**, was signed by more than 35 organisations. It states:

“We believe that it is necessary to act now to provide a secure future for our forests, woods and trees, that significant changes are required to widely-accepted and practiced systems of management to make them resilient, and we are committed to help realise the vision set out in this Accord.”

In the same year, the outcomes of the **British Woodlands Survey 2015** (BWS2015) were published, reporting on awareness, action and aspirations related to environmental change among 1,500 stakeholders.



Responses to BWS2015 indicated that the resilience of the UK's forests is currently poor, although there are a number of positive aspects which could be built upon. The report concluded that collaboration across the sector was required, with responsibilities shared between the many interests. It also identified that risks need to be more clearly communicated to stakeholders, together with firmer, tailored, guidance on addressing these risks.

Together these two publications secured both the willingness to collaborate strategically, and the evidence necessary to measure progress towards meeting the adaptation measures in the UK Forestry Standard (UKFS). The next step was to build on these by agreeing what actions are needed to be taken and by whom.

A small group of interested parties came together under the auspices of the 'Forestry Climate Change Working Group' (FCCWG). During 2016, the FCCWG started work on an Action Plan for the forestry sector.

It followed a simple five-step approach:

1. What should we be doing to support adaptation to climate change?
UKFS Adaptation Factors
2. How do our actions measure up?
British Woodlands Survey 2015
3. What is being done currently?
Organisations submit evidence to FCCWG during 2016/17
4. What could we do better (or less of)?
Expert stakeholder workshop, October 2017
5. Priorities: what we need to do, by whom, by when?
Published Action Plan

Steps 1-3 formed the basis of a Gap Analysis. Stakeholders were consulted and asked to provide details of activities currently being undertaken which addressed any of the UKFS Adaptation Factors.

Lack of activity, plus data from BWS2015, indicated areas of insufficient action. In order to identify important next steps requiring action, and their priority, a stakeholder workshop was convened. At a meeting held in October 2017, experts from 24 organisations gathered to devise strategies to tackle steps 4 and 5. Delegates tackled each of the 18 UKFS factors in turn, identifying priorities for action over the next five years.

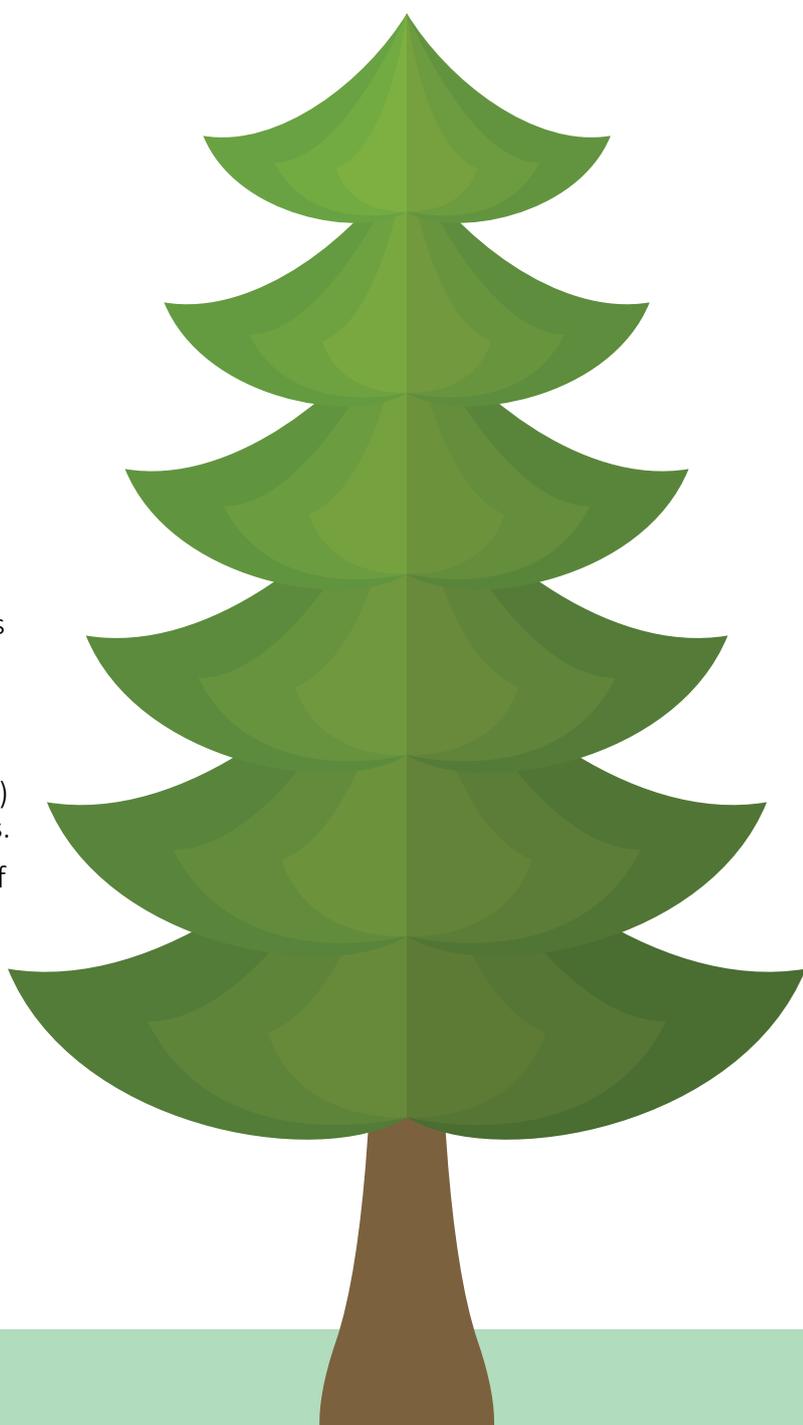
Key issues to be addressed

The action plan is based on 11 issues identified as the major gaps that need to be addressed.

They are

- I. Not enough woodland is being planted to enhance resilience at a landscape scale.
- II. Lack of management in many woodlands is hindering implementation of adaptation measures e.g. opportunities for natural regeneration (which can assist adaption) are being reduced by deer browsing and the closed canopy structure of many woods.
- III. New tree planting is not using sufficient quantities of genetically-diverse and/ or appropriate stock, potentially limiting adaptive potential.
- IV. Nurseries are not providing a wide enough range of tree species of sufficient and appropriate genetic diversity.
- V. The sector is not embracing contingency planning.
- VI. Low level of restocking is hindering implementation of adaptation measures.
- VII. Limited uptake of continuous cover approaches to management.
- VIII. Forest planning and design is not taking account of climate change impacts and projections.
- IX. Lack of clarity on what adaptation measures are available and appropriate.
- X. Lack of knowledge sharing of adaptation practices.
- XI. Continuous Professional Development (CPD) opportunities difficult to identify and access.

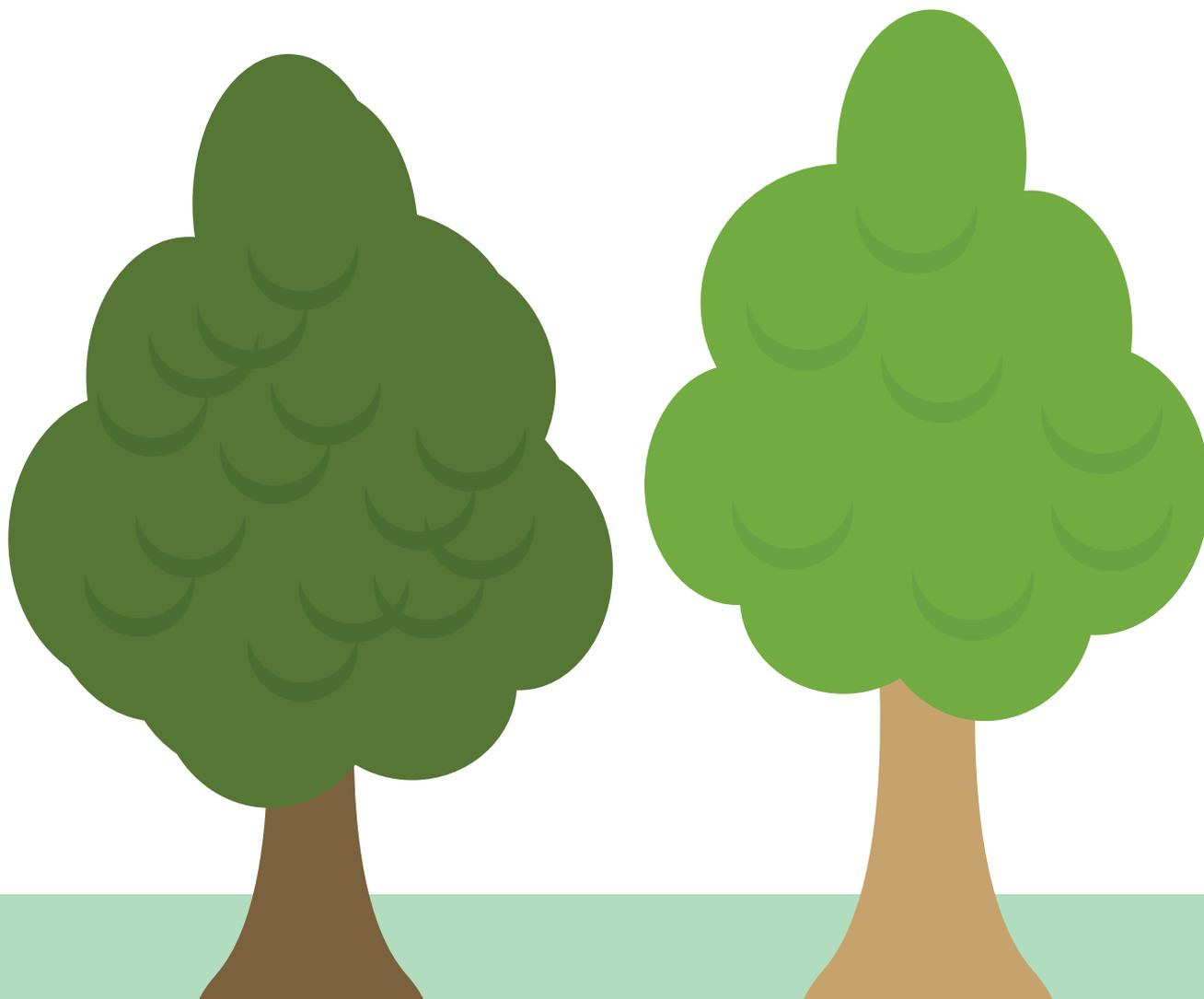
Each action in the plan addresses one or more of these gaps.



Priority actions

The action plan includes a large number of detailed actions. Those which are believed to have the greatest impact and therefore the highest priority are presented as actions for policy, research and practice. A full list of actions, owners and timescales can be found [here](#).

	#	ACTION	OUTCOMES	WHO LEAD + (SUPPORTERS)	COMPLETION TARGET DATE
POLICY	1	Integrate forest climate change adaptation policies into the new environmental land management scheme, specifically to ensure those managing to the UKFS can access ELM payments.	1. Increased rates of woodland creation, including urban and peri-urban trees. 2. More resilient stock planted. 3. More widespread adoption of contingency planning.	CLA, CONFOR, WT, DEFRA, FCE	2018-2023
	2	Strengthen the requirement for climate change adaptation in the woodland management plan template and guidance.	4. Forest planning and management better adapted to changing climate. 5. Greater uptake of natural flood management in woodland creation and management.		
	3	Update the UKFS climate change guideline to reflect most recent learning.			
	4	Embed climate change actions in forestry regulations when opportunity arises.			



	#	ACTION	OUTCOMES	WHO LEAD + (SUPPORTERS)	COMPLETION TARGET DATE
RESEARCH	5	Continue research to identify alternatives species and provenances and better understand the genetic basis of resilience of a range of tree species, including establishing more trial plots.	<ol style="list-style-type: none"> 1. Increased understanding of the genetic resistance of native species and commercially-important species, against current and emerging diseases. 2. Research and evidence gaps in the review of genetic considerations for provenance choice, and coverage extends to commercial species. 3. Links established with National Tree Improvement Strategy 	FR, FTT, CONFOR, UK FGR Steering Group, RFS	2022+
	6	Understand the impacts of increased connectivity and resilience across a range of scales, in relation to key topics (inc. species migration, spread of pests, pathogens, invasives, urban forestry, biodiversity and ecosystem services).	<ol style="list-style-type: none"> 1. Build on FR Research Note (Bellamy et al, 2018). 2. FR review of research gaps and recommendations. 3. Research into the benefits of connectivity, resilience and scale. 4. Build on Woodland creation and Ecological Networks (WREN Project). 	FR, WT	2022
	7	Review, develop and integrate decision support systems (DSS) such as ESC and resources such as Silvifuture to increase usability for practitioners and encourage uptake.	<ol style="list-style-type: none"> 1. FR research into decision support system / tool development, opportunities and improvements. 2. FR review of Ecological Site Classification (ESC) parameters and opportunities to represent different management objectives, and include more species. 3. Practitioner engagement to identify priority species / sub-species and silvicultural information to include in ESC. 	FR, RFS, Sylva	2019-22
	8	Commission research and produce case studies of developments and planting to develop a longitudinal research base.	<ol style="list-style-type: none"> 1. More woods managed for climate change resilience. 2. Provide evidence-based input to payment for ecosystem services 	FR	2021-24
PRACTICE	9	Build and promote case studies of successful initiatives and increase effectiveness of knowledge sharing.	Increase in woodland creation in line with government targets and more trees outside woodlands to increase connectivity and resilience.	FCE, RFS, WH, ICF, CONFOR, WT	2020
	10	Create a knowledge hub that supports correct species choice, use of mixtures and silvicultural choices.	Advice and best practice guidance is accessible, practical and freely available to all land managers.	FCE, RFS, ICF	2019
	11	Provide CPD training opportunities for climate change adaptation skills: e.g. forest soils, ESC, CCF.	<ol style="list-style-type: none"> 1. Increase in knowledge and skills leading to better informed decisions on climate change adaptation practices. 2. Increased area managed under CCF. 	FR, RFS, ICF, WT	2018+
	12	Provide guidance on the financial impact of silvicultural choices now and in the future.	Land managers make decisions based on evidence of long term financial impacts. Increased diversification in commercial forests.	FCE, CONFOR, ICF	2019+
	13	Incentivise nurseries to grow adequate stocks of adapted planting stock in the UK that meet best biosecurity standards as set by the Plant Health Assurance Scheme.	Increase in biosecurity, reduce risk of introducing new pathogens.	CONFOR, FCE, WT, GiB, Defra	2019

Strategic recommendations

This plan will gain traction if a representative cross-sector group is empowered to own and drive it forward on behalf of the sector.

It is recommended that the Forestry Climate Change Working Group (FCCWG) works closely with Defra policy teams to:

- I. Advise on delivery and development of regulations, incentives and policy.
- II. Lead a thorough review of adaptation factors within the UKFS and is regularly consulted on delivery and future development.
- III. Play an active role in liaising between practice and research by holding stakeholder workshops.
- IV. Provide input to reviews of the government's Research and Innovation Strategy.
- V. Monitor and publish progress on delivery of the FCCWG Action Plan.
- VI. Ensure this action plan is integrated into the activities associated with the National Adaptation Programme (2018).
- VII. Ensure the action plan is integrated into the activities associated with Defra's Tree Health Resilience Strategy (2018).

Appendices

- a. **UK Forest Standard**
- b. **Gap analysis**
- c. **Detailed action plan**
- d. **Climate Change Accord**
- e. **Members of the Forestry Climate Change Working Group**
 - **CLA** (Mike Seville)
 - **CONFOR** (Caroline Harrison)
 - **Defra** (Steven Penlington)
 - **Forestry Commission England** (Mark Broadmeadow, John Weir)
 - **Forest Research** (Gail Atkinson, James Morison)
 - **Institute of Chartered Foresters** (Martin Glynn)
 - **Lockhart-Garratt** (Justin Mumford)
 - **Natural England** (Mike Morecroft)
 - **Royal Forestry Society** (Simon Lloyd)
 - **Sylva Foundation** (Gabriel Hemery)
 - **Woodland Heritage** (Guy Corbett-Marshall)
 - **Woodland Trust** (Christine Reid)





FCCWG (2018).

Forestry Climate Change Adaptation Action Plan.
Prepared by the Forestry Climate Change
Working Group (FCCWG). www.rfs.org.uk