



Forestry England

# Our forest resilience strategy and action plan

The nation's forests  
will be fit for the future



The nation's forests are precious. They bring joy and peace to the people who visit, prosperity and growth to the communities they serve, and pride and purpose to the staff who care for them.

However, our forests face an existential crisis. Right now, climate change is triggering devastating extreme weather events, from scorching droughts to destructive storms; pests and diseases have surged exponentially; non-native mammal populations are decimating our woodland ecosystems; and biodiversity collapse is unravelling the ecological foundations of our forests.

At the same time, our relationship with these precious landscapes is changing. Demand for wood products is changing and technological innovation is revolutionising how we use forest resources. Increasingly, amongst global political and financial volatility, forests are vital sanctuaries for physical health, mental wellbeing and cultural heritage.

Time is running out. Forests develop over generations. So we are acting now: decisively, with ambition and based on the best available science so the nation's forests have the greatest chance to thrive for centuries to come.



**Mike Seddon**  
Forestry England Chief Executive

Without resilient forests,  
we lose everything. The  
challenge is great, but the  
opportunity is greater.





# Our Vision

Forest of Dean, Gloucestershire

In the face of unprecedented challenges, the nation's forests are not just surviving, they are thriving. They set the global standard for resilient, sustainable and forward-thinking forest management.

When crisis strikes, the nation's forests will bounce back stronger. Our innovative management and bold adaptation will allow the nation's forests to evolve and meet emerging conditions, delivering ever increasing value for people, wildlife and the economy.





## What we will do

Resilient forests rely on thriving, healthy forest ecosystems. We are managing the nation's forests at a landscape scale, weaving together our innovative work on nature recovery, timber production and sound silviculture to demonstrate world-leading sustainable forestry.

We are dynamic. Our forests face many connected problems, so we need to tackle them all together instead of fixing one thing at a time. We will take transformative action and invest in our staff to have the skills we need, so that resilience underpins everything we do.

We will base our decisions on the best available scientific evidence, continually learning from past experience and adapting our approach as new research emerges. Through ongoing partnerships with Forest Research and other leading institutions, our forest resilience approach will remain at the forefront of forest science. And by continuing to collaborate with our diverse partners, from government colleagues and arm's-length bodies to non-governmental organisations and the private sector, we will champion transformative action across the forestry sector and beyond.

Forest resilience is the foundation of Forestry England. Our organisation needs to stay strong in different ways – financially, through our people and communities, and through our infrastructure (Appendix 1). But all our work depends on having healthy forests. That's why forest resilience must be our top priority.







# Assess Diversify Restore

Resilient forests are more productive, withstand disturbance, and give greater value to society. We are guided by three key principles; these are the golden thread of our actions.



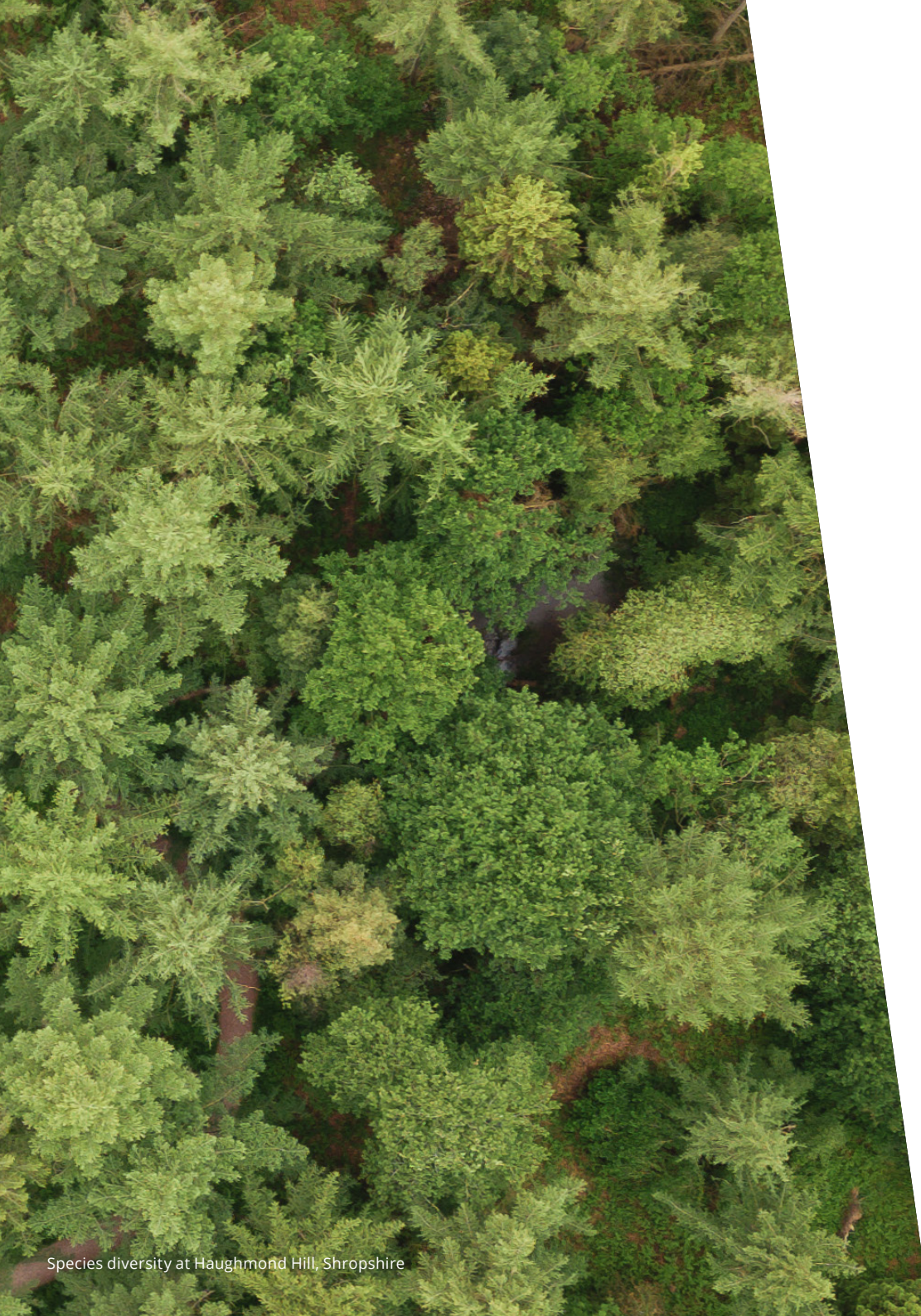


## Assess

### Understanding each forest

We understand the unique character and potential of every woodland in our care. We rigorously assess the local environment, soils, climate projections, past management and the surrounding landscape and connectivity. This comprehensive assessment informs our detailed understanding of the risks that each forest faces – such as extreme winds, droughts, fire and intense browsing pressure by mammals – as well as identifying the types of woodland that thrive best in each location. Our tailor-made management for each woodland draws on sophisticated desk-based modelling and on-the-ground field analysis. Our decisions are rooted in data and direct observation.





## Diversify

### Spreading risk through complexity

The future is uncertain, so diversification is the most powerful way to manage risk. We focus on four critical areas of forest diversity:

- Tree species: we plant a wider variety of tree species in more balanced proportions across the nation's forests, and use more mixtures instead of monocultures.
- Structure: the nation's forests have varied ages and structures using complementary management approaches, including low-intensity management approaches (LIMA), continuous-cover forestry (CCF), even-aged forest stands, and temporary and permanent open space.
- Genetics: the nation's forests have broad genetic foundations, built on our diverse approach to seed sourcing and provenance, tree breeding and natural regeneration.
- Function: we combine trees with complementary ecological traits, such as rooting depth, seasonal timing (phenology) and mycorrhizal associations.

This layered diversification is everywhere from individual stands to entire landscapes, creating a mosaic of forests.



Pine martens are a key ecosystem engineer, which we are re-introducing across the nation's forests.



## Restore

### Nurturing the living foundations

Biodiversity is not simply a conservation goal, but the cornerstone of resilience. Trees are connected to the wider ecosystem, so we must protect the health and integrity of the whole forest. We particularly focus on species groups and habitats that have the biggest effects on ecosystem function, such as soil systems, fungi, and ecosystem engineers such as beavers. We prioritise the biological foundations for long-term ecological health and resilience.





# How we will do it: our action plan 2025 to 2027

## Delivering our forest resilience principles

| Principle               | Target                                                                                                                                                                                                                                                            | Supporting actions by 2027                                                                                                                                                                                                                                                                            |                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
|                         |                                                                                                                                                                                                                                                                   | Action                                                                                                                                                                                                                                                                                                | Responsibility                                                |
| Assess                  | All new forest plans have a forest resilience assessment.                                                                                                                                                                                                         | Develop a framework for assessing the local context for forest resilience in forest planning. Incorporate this into all new forest plans.                                                                                                                                                             | National and district planning teams                          |
| Diversify: tree species | We will strive to ensure that no single tree species represents more than 20% of newly planted trees in each district's five-year restocking and woodland creation programme, whilst at all times ensuring that species are well-suited to local site conditions. | Monitor tree species diversity in planting programmes and adjust orders as needed to strive for no single tree species exceeding 20% of each district's restocking and woodland creation programme (averaged over a five-year period), whilst taking local site conditions into account. <sup>1</sup> | National Operations and district teams                        |
|                         |                                                                                                                                                                                                                                                                   | Complete and use a thorough species suitability assessment and incorporate ambitious diversification when renewing the Kielder Forest Plans.                                                                                                                                                          | North District, National Operations                           |
|                         |                                                                                                                                                                                                                                                                   | Create and start delivering a 'species for the future' production plan.                                                                                                                                                                                                                               | Plant and Seed Supply, National Operations and district teams |
|                         |                                                                                                                                                                                                                                                                   | Establish seed production areas based on the 'species for the future' list.                                                                                                                                                                                                                           | Plant and Seed Supply                                         |
| Diversify: structure    | We will use Forest Development Types (FDTs) in our forest planning and operations.                                                                                                                                                                                | Finish FDT trials and produce business guidance on using them in planning and operations, to promote the use of species mixtures and structural diversity.                                                                                                                                            | National Operations and district teams.                       |
|                         |                                                                                                                                                                                                                                                                   | Provide clearer guidance on what 'good' structural diversity looks like and expectations for planning.                                                                                                                                                                                                | National Operations                                           |
| Diversify: genetics     | We will maintain and increase the genetic diversity of our core tree species.                                                                                                                                                                                     | Collate and distribute guidance on the genetic status of species on our 'species for the future' list, and how to increase/maintain genetic diversity.                                                                                                                                                | Plant and Seed Supply, Arboreta, National Operations          |
|                         |                                                                                                                                                                                                                                                                   | Provide guidance and continual professional development on the state of knowledge around genetic diversity and how this should be enhanced by operational decisions.                                                                                                                                  | Plant and Seed Supply and National Operations                 |
|                         |                                                                                                                                                                                                                                                                   | Establish seed orchards of Norway spruce, Douglas fir and Sitka spruce (three of our 'species for the future') from superior breeding populations.                                                                                                                                                    | Plant and Seed Supply                                         |
| Diversify: function     | We will understand the different characteristics and traits of tree species and how these traits help forests to function, and we will improve this functional diversity across the nation's forests.                                                             | Create a 'functional diversity index' related to the sub-compartment database, which will describe the variation in tree species traits (such as rooting depth and phenology) and their functional role in the ecosystem. Begin using this to support forest planning decisions.                      | National Operations and district planning teams               |
|                         |                                                                                                                                                                                                                                                                   | Provide guidance and continual professional development on what functional diversity is, why it is important, and how to integrate it into planning and operational decisions.                                                                                                                        | National Operations                                           |
| Restore                 | We will understand the ecological health of the nation's forests and we will increase it.                                                                                                                                                                         | Develop a measure of 'ecological integrity' to describe the ecological health of the nation's forests.                                                                                                                                                                                                | National Operations                                           |
|                         |                                                                                                                                                                                                                                                                   | Deliver our 'Wildlife management vision' by increasing volunteering, contractor support, licensed control and sector capacity to protect woodlands from deer and grey squirrel damage.                                                                                                                | National Operations                                           |
|                         |                                                                                                                                                                                                                                                                   | Review the evidence for the effects of forest operations on soil health at different times of year and provide more detailed operational guidance.                                                                                                                                                    | National Operations                                           |

<sup>1</sup>All districts are working towards this target. However, North District is unlikely to meet the 20% threshold by 2027 due to specific local constraints, including their current relatively high baseline and unique upland challenges. North District also has their own bespoke action under this principle focusing on the Kielder Forest Plans to ensure they continue to make ambitious diversification progress.



## Supporting our forest resilience strategy

|                              | Target                                                                                                                               | Supporting actions by 2027                                                                                                                                                                                                                                                                                        |                                                 |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
|                              |                                                                                                                                      | Action                                                                                                                                                                                                                                                                                                            | Responsibility                                  |
| Staff knowledge and capacity | Our staff are skilled silviculturists, confident and empowered to deliver the forest resilience strategy and action plan.            | Create/nominate a lead(s) on forest resilience in every district.                                                                                                                                                                                                                                                 | District senior leadership teams                |
|                              |                                                                                                                                      | Review existing training and knowledge exchange opportunities, and recommend improvements to increase access and quality. This will build the expertise needed across all levels of decision-making, ensuring excellent silvicultural practice is at the heart of all we do.                                      | National Operations and Technical Training team |
| Internal communications      | Our staff understand our forest resilience approach and principles.                                                                  | Create and deliver an internal communications plan to complement the forest resilience strategy and action plan                                                                                                                                                                                                   | National Operations, National engagement team   |
| External communications      | Our forest resilience approach is widely communicated externally and we are recognised as an exemplar of forest resilience practice. | Create and deliver an external communications plan to complement the forest resilience strategy and action plan.                                                                                                                                                                                                  | National Operations, National engagement team   |
| Investment                   | We understand the investment needed to implement our forest resilience principles.                                                   | Collaborate with Forest Research to analyse different future scenarios and risks, to assess the potential economic impacts of environmental change and shocks, including different scales and paces of alternative forest management actions. Use this to inform and justify our investment in forest resilience. | National Operations                             |
| Monitoring                   | Forest resilience is regularly monitored and reported on.                                                                            | Produce an annual forest resilience report that is reviewed by the forest resilience steering group, including progress against the forest resilience strategy and action plan.                                                                                                                                   | National Operations                             |
| Research                     | Decisions are based on rigorous and current scientific evidence.                                                                     | Fund a bespoke service level agreement with Forest Research and commission forest resilience applied research.                                                                                                                                                                                                    | National Operations                             |
| Partnerships                 | We collaborate widely with other organisations across the sector and are visible leaders in forest resilience.                       | Continue to be a key member of The Resilient Treescapes Advisory Group, driving forwards the sector's action plan.                                                                                                                                                                                                | National Operations                             |



## Appendix 1: definitions

The UK Forestry Standard defines resilience as ‘The ability of a social or ecological system to absorb disturbances, while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change’.

At Forestry England, we apply this concept specifically to our forests. We define forest resilience as:

*The resilience of our natural capital (i.e. the forest ecosystem) against threats and risks that compromise its ecological integrity and ability to deliver societal benefits.*

Put simply, resilient forests stay healthy and keep delivering a wide range of benefits for society, even when faced with external threats and risks (Figure 1).

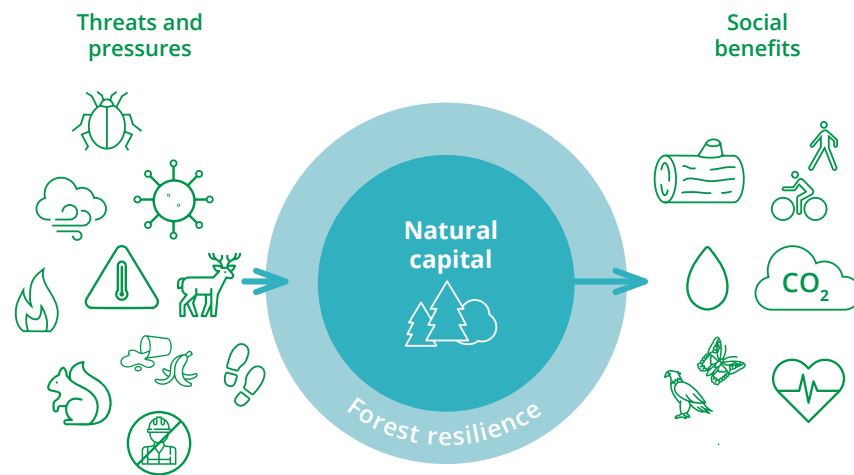


Figure 1: Natural capital and forest resilience

Considering forest resilience through the lens of natural capital is a useful way to think about the other types of resilience that Forestry England considers as an organisation. For example, we also need to ensure the financial resilience of our financial capital or the social resilience of our social capital. All these dimensions of resilience, including the forest resilience of our natural capital, make up the organisational resilience of Forestry England (Figure 2).

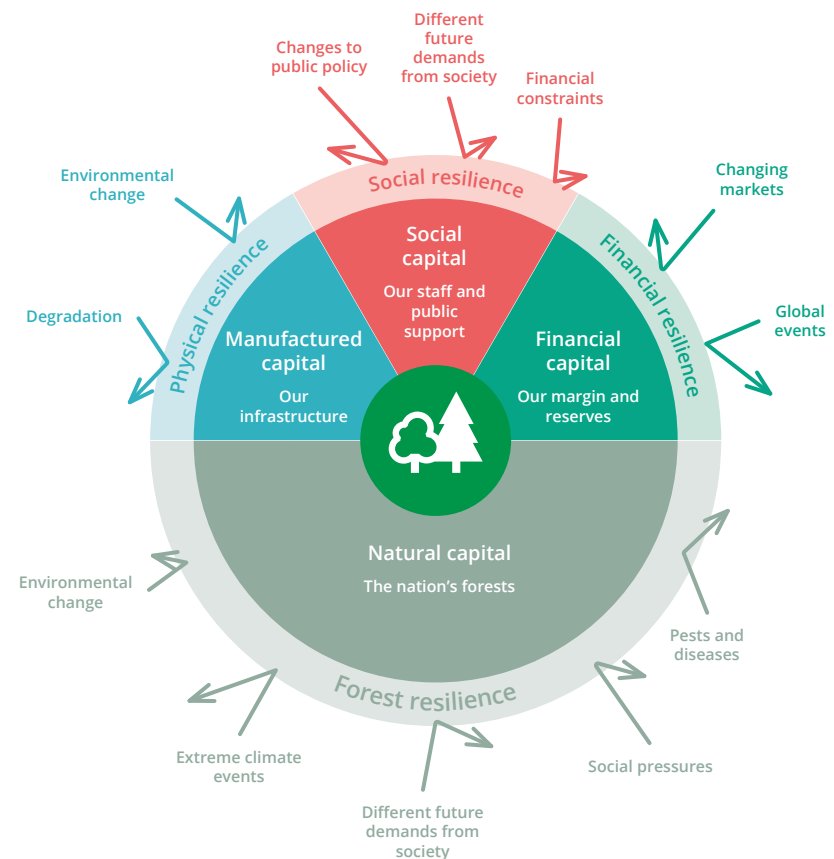


Figure 2: The different types of resilience that Forestry England needs to consider. Note that natural capital, the nation's forests, underpins everything.



Front cover: Wykeham Forest, Yorkshire  
Back cover: Forest of Dean, Gloucestershire

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