



Design Ecosystems Fellowship Report 2022

*Mosaic Landscapes: How
private woodland owners have
the power to change the future of
our landscapes*

Author: Material Cultures



**FUTURE
OBSERVATORY**

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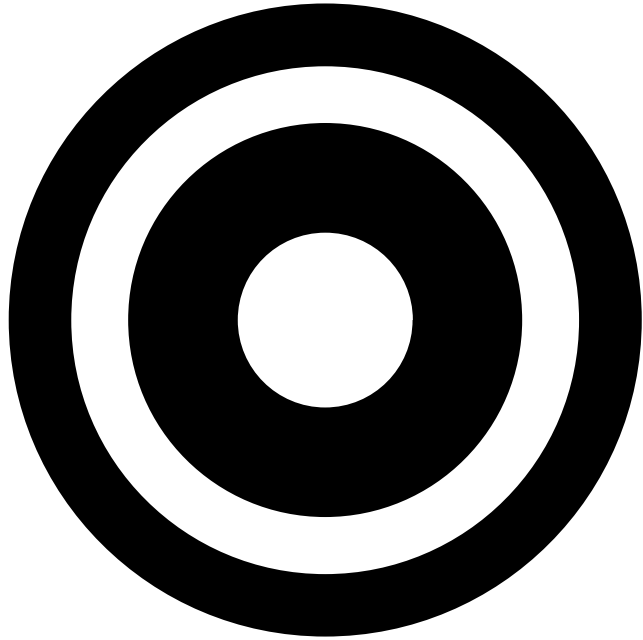
Overview

Our work has investigated the opportunities for private woodland owners in England to develop resilient treescapes and regenerative land management practices to repair our degraded landscapes. We are interested in the opportunities that a transition to varied treescapes would offer a sustainable construction industry through the supply of diverse, low embodied carbon construction materials. We seek to inform and educate the general public, architects and small woodland owners on the potential of alternative forestry systems to generate positive economic, social and environmental outcomes. Our research began in July 2022 and concluded in January 2023, and Future Observatory provided our organisation with approximately £20K funding.

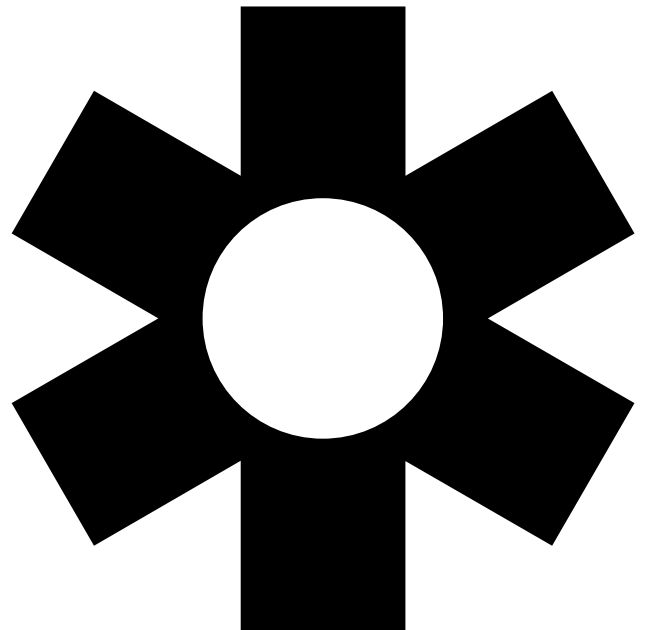
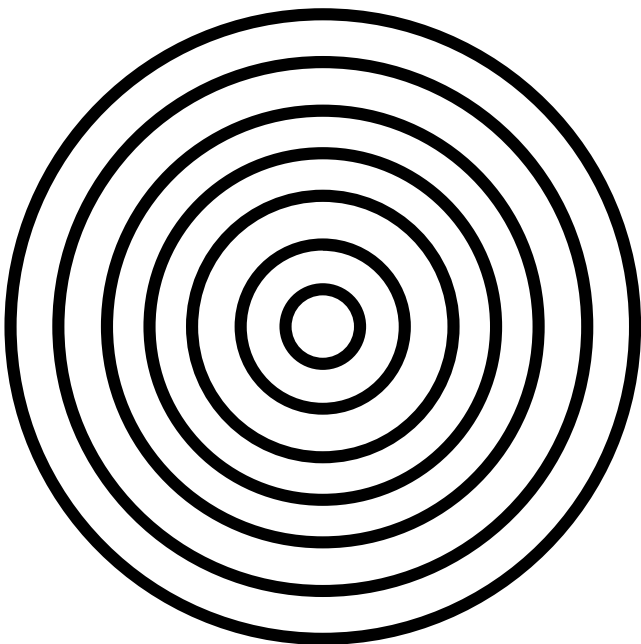
Research objectives

Through this research, we have sought to understand the barriers and obstacles faced by private woodland owners when they engage with management practices that deviate from a status quo favouring industrialised monocultural practices

Through representing different forestry systems which support biodiversity, society and local economies, we seek to bridge the current knowledge gaps facing resilient treescapes and regenerative land management practices



Research activity



We carried out our work in two major phases - the first for primary research, including site visits, interviews with stakeholders and information gathering, and the second for representation, in which we represented the accrued information in a series of vignettes.

Phase 1: Research

Literature review

During this period, data was collated from research journals, research papers and online publications, with sources including Forest Research, the Climate Change Committee, the Soil Association, the Woodland Trust and the Landworkers Alliance.

In collating this data for our research, and in order to share the information with the project visualisers, Beyond Words, it became clear to us that an extended period of representation and drawing would be required to communicate the complexity of the diverse systems we sought to describe. In lieu of group workshops and a symposium we opted to restructure our fellowship work around this task of representing the potential treescapes which could be prioritised by future woodland owners. This same complexity also led our collaboration with Beyond Words to focus on representing the issues in today's status quo, rather than in developing a network diagram of the ecosystem

Site visits

Our team visited and documented four privately owned woodlands across the south of England, each with differing ownership and management models.

- Rogate Woods, private ownership: 100 hectares of woodland on the West Sussex Hampshire border which includes a number of eucalyptus plantations
- Hillyfield Woods, private ownership: 45 acres of ancient woodland managed for environmental and community benefit, which has been affected by disease and an infestation of laurel
- Boro Woods, community ownership: A predominantly oak woodland with beech and holly
- Flimwell park, private ownership: 46 acres of broadleaved coppiced, ancient woodland near the village of Flimwell, East Sussex. It is dominated by coppiced sweet chestnut with relatively low species mix. In recent years, the understory has become dominated by rhododendron

The site visits were recorded through audio recordings and photography, which is used to illustrate our report Mosaic Landscapes.

Stakeholder interviews

Interviews were carried out with property owners, site managers, foresters and researchers to develop our understanding of the limitations and opportunities across the sites. Several interviews were held during site walks, enabling a direct discussion of conditions on the ground. We drew on our extensive existing network of forestry research and industry experts, extending this to include landowners and policy advisory bodies. Bringing these disparate voices together through the fellowship was integral to both collecting and transferring knowledge and to facilitating the dissemination of existing, if siloed, data.

Phase 2: Representation

Following the research phase, we worked to collate the information collected through interviews and mapping into a written report and inventory.

Vignette drawings

The findings from the research came together in a series of illustrative drawings, or vignettes, accessible to a non-academic audience. The drawings synthesise the knowledge collected from ecosystems with various forms of woodland management. Each individual vignette represents a treescape, and the different non-human and human systems it supports. The treescapes represented are:

1. Plantation Forestry
2. Continuous Cover Forestry
3. Short Rotation Forestry
4. Short Rotation Coppice
5. Silvoarable Agroforestry
6. Silvopastoral Agroforestry
7. Mixed Native Woodland
8. Wet Woodland

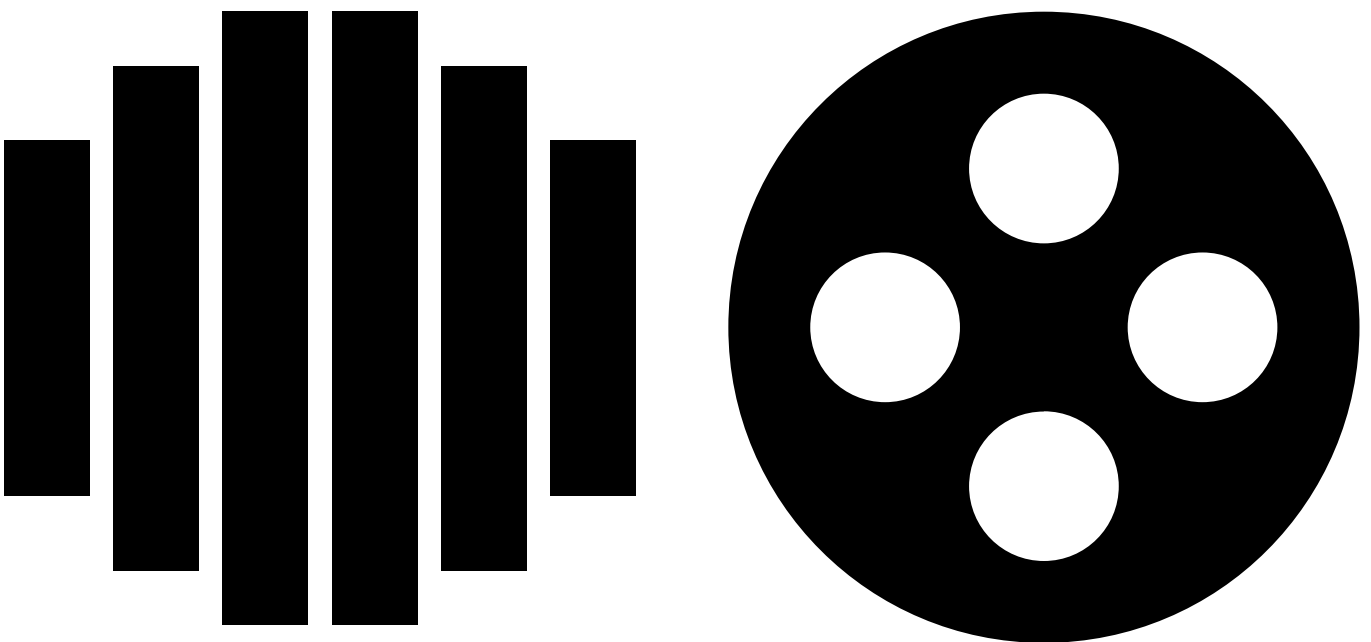
It is our ambition to develop these drawings into a series of animated gifs which can be shared online.

Propositional drawings

We have also developed an iterative diagram, offering a propositional version of the mosaic landscape represented in the vignette produced by Beyond Words. This shows how different treescapes and production can co-exist, articulating a possible vision for the landscape in the decades to come if the various stakeholders came together through regional Woodhubs.

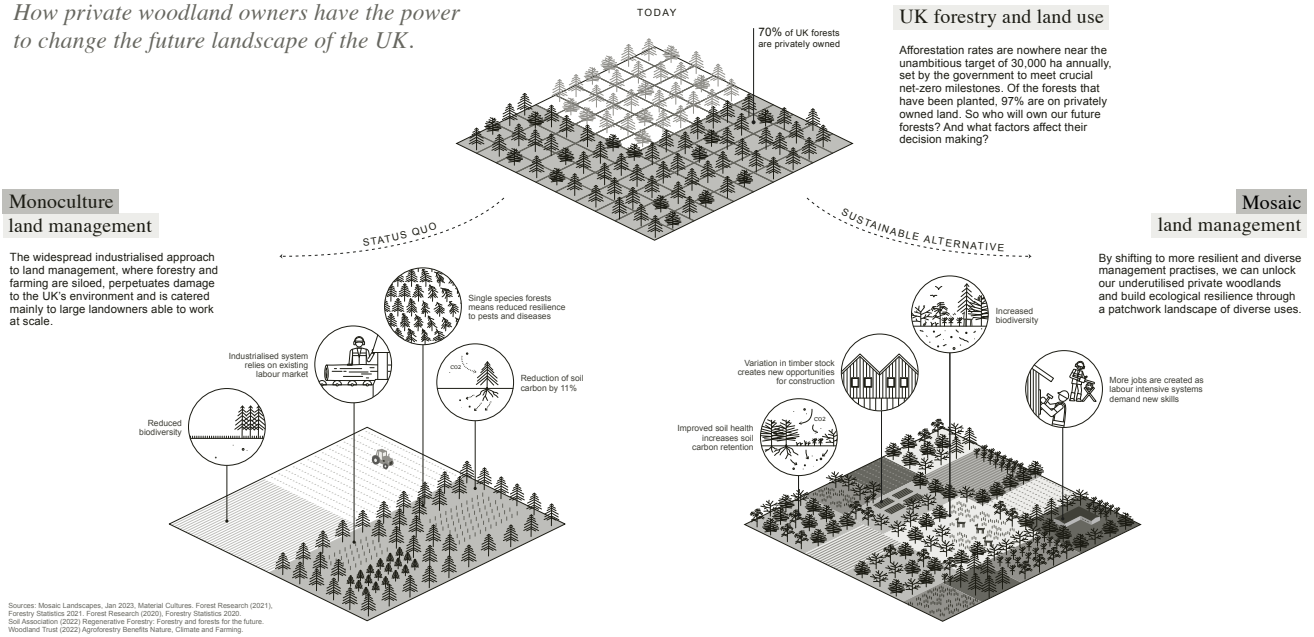
Proposed design ecosystem

Mosaic landscapes



Mosaic landscapes

How private woodland owners have the power to change the future landscape of the UK.



This research began with the question of the cultural and aesthetic values ascribed to our many unmanaged woodlands. These are often perceived as permanent landscape features; ancient forests which are potential enclaves of true wilderness. In reality, they are the product of human management and many of our native species have been shaped by the interventions historically carried out in our treescapes. Due to a lack of continuity in this intervention, the woodlands are often ecologically poor.¹ However, they can be supported to thrive both ecologically and economically. We have sought to develop an understanding of how this can happen and how critical cultural engagement with this transition might be better supported to enable the collaborative rehabilitation of our landscapes.

The UK is incredibly dependent on timber imports and is the second largest net importer of timber in the world after China.² Without radical societal change, we are unlikely to ever be self-sufficient in timber production. However, there is potential for better management of the woodlands we have now and the woodlands we will have in the future. Moving forward, this will require the private sector to engage further with better management practices and afforestation. We seek to represent the potential natural capital value of private woodlands as well as their ability to bolster regional economies.

The stakeholders in our ecosystem include actors across the timber supply chain, ranging from foresters, woodland owners, sawmills, forestry certification organisations, timber merchants, architects, contractors, industry bodies representing businesses, governmental regulators, NGOs representing the public interest, forestry consultants, ecologists, biologists, and the general public, whose ability to access our woodlands is currently limited by poor rights to roam.

We propose an alternative way forward, represented in a series of vignettes and diagrams which articulate the biodiversity, the social and economic benefits of diversified forestry diversity, and the ways in which small woodlands can contribute to climate resilient landscapes that supply the circular economy. Our research has identified how intervention at every point along the supply chain is critical for a cross-industry transition to more sustainable forestry.

This regional forestry ecosystem is extremely vulnerable. It is very susceptible to global market fluctuations, and shifts in demand and policy in the farming and energy sectors. Many of the actors within the ecosystem are unaware of their co-actors, or of their interests. A general lack of communication, networking and understanding between these stakeholders in the forestry industry persists.

With financial support from the government, we believe that small woodland owners can be incentivised to manage their woodlands more sustainably, with the added benefit of improving the ecological condition of their treescapes. However, our design ecosystem has demonstrated that highlighting alternative high value end markets for British hardwoods² is insufficient due to the economies of scales necessitated by existing harvesting and processing infrastructure. A physical centre, or Wood Hub, around which these various groups can coalesce and organise is critically lacking and disabling low yield, high value timbers from entering the market. We have also identified precedent case studies and proposals in the Lewes and Eastbourne District Council, guaranteeing that end use markets could be replicated and scaled across the country. Together, these interventions would support bioregional economies to develop whilst incentivising long term management of our woodlands.

Target outcomes and priority action areas

We are working towards a more locally sourced, sustainably managed construction industry, specifically one in which there is wider availability of a more diverse range of British grown timber products for use in the construction industry. We begin with disseminating knowledge, addressing “the structure of information flows”³ which has been identified by Donella Meadows as a critical lever for change

We hope to encourage owners of unmanaged woodlands to reconsider the value of their resources and the advantages of transitioning their management to more diverse and resilient models. We seek to increase awareness of the alternative treescapes which could be cultivated, drawing on models which are currently available to woodland owners, and overcome the misconceptions associated with these alternative systems.

There are a number of actions which could begin to address the issues we have identified in the ecosystem, and although change is necessary across the supply chain, we believe that the UK government is well-positioned to galvanise this change and its effective implementation.

1. Whilst afforestation plans must be implemented much more rapidly, we need skilled woodland managers, foresters, processors and ecologists to support these new treescapes - it is estimated there is a need for a 72% increase across the workforce.⁴ Subsidies offered to incentivise the establishment and uptake of education and training programmes within the forestry sector is urgently needed to address this identified skills gap.⁵

2. Woodland owners today have no legal obligation to maintain their woodlands, and are in need of expertise and support to help them navigate the overwhelming amount of information and options available to them in terms of long term planning and management. A programme of free webinars and other information sources should be made available to existing, and new, woodland owners to make them aware

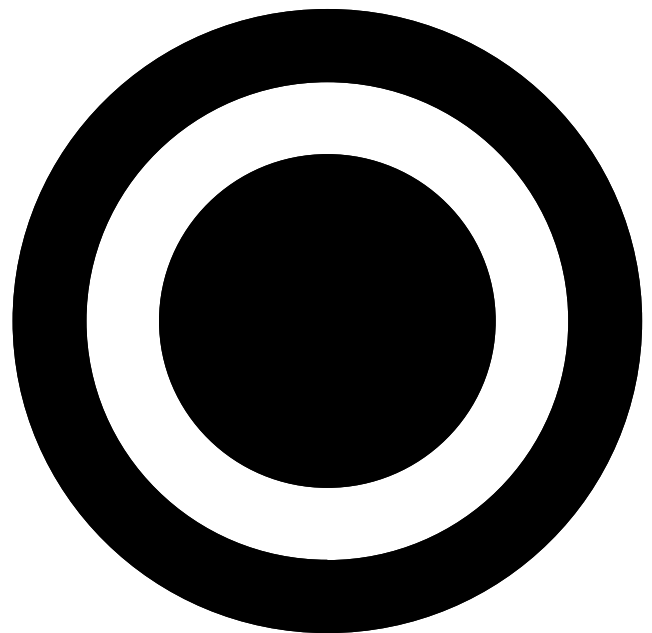
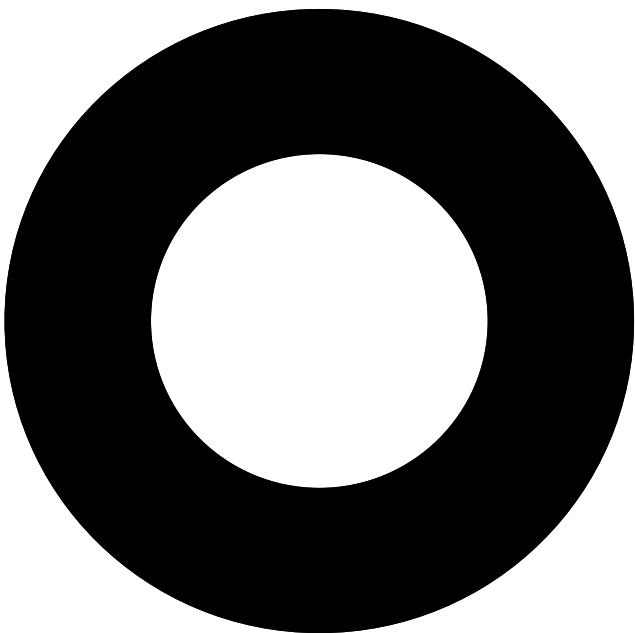
of their woodland's potential, as well as their environmental responsibilities. Evidence suggests that where attendance to webinars is voluntary there is much stronger uptake and improved longer term impact.

3. The auditing required to ensure compliance to sustainable forestry standards is expensive and less viable for woodland owners with low yield timber crops. Non-governmental organisations, such as The Soil Association and the Woodland Trust, should therefore collaborate in developing a voluntary charter to which woodland owners and managers, both private and public, sign up. This charter should set out commitments to improve soil health, biodiversity, productivity and public access.

These actions would be further supported further by the following:

1. Governmental regulation through the Forestry Commission around diversification of species mix, where appropriate, in newly planted woodlands.
2. Governmental regulation of Natural Capital accounting to ensure transparency and consistency.
3. Identification of the private woodland owners and/or tenants in the UK through a Governmental audit - currently this information is missing from the National Forestry Inventory which is a barrier to targeted national interventions.
4. Improvement of subsidies for woodland maintenance to allow woodland owners to diversify their species mix and manage woodlands with more labour intensive, but sustainable, practices.
5. Capital investment in regional pilot Wood Hubs which would bring together key actors and act as a critical timber storage space for small woodland owners
6. Establishment of access rights to all woodlands to improve public engagement with issues around all our woodlands, public and private.

Conclusions



Conclusions and achievements

We are now in a position to share our knowledge of this ecosystem within our own industry, the construction industry, and across the other related industries – namely, forestry, farming and energy. Our research concludes that state intervention in the forestry industry should be considered a key priority if we are to make practical progress towards the government’s afforestation targets and net zero goals, just as the state has subsidised farming over the last century. Although the state has limited public land on which to implement afforestation, it has other levers at its disposal to support and upskill the industry, without which the private sector will also be unable to implement afforestation goals.

Key infrastructure is needed to support the transition to a more resilient, biodiverse and productive landscape. Critically, this demands a decentralisation of the processing infrastructure upon which woodland owners are reliant to make use of and manage their woodlands. The industry today assumes an economy of scale and operation that is not viable for many small woodland owners, and these woodlands form the bulk of our treescape assets. A decentralised ‘Wood-hub’ system would facilitate the pooling of equipment, skills and resources regionally. Further work into the business case and deployment of this network of Wood-hubs needs to be undertaken.

Principal Investigator’s personal evaluation

This fellowship has been invaluable, enabling us to research a vital part of the construction supply chain in the UK and consider perspectives beyond that of our industry’s own extractive interest in woodland. We have been supported to articulate the value of the soil and the non-human systems within our treescapes, and to share that understanding and perspective with other practitioners. To that end, considering the complexity of the ecosystem, we feel that further engagement with more sites and small woodland owners would have been beneficial. The short time frame of the fellowship, coupled by limited access to and interest from different woodlands and woodland owners suggests that this engagement would be more effectively undertaken over a longer stretch of time.

Our landscape vignettes have been successful at communicating the variety and typologies of the different woodland systems available to woodland managers and owners. We produced these within the practice, under the guidance of our different collaborators and consultees. The critical next step is to establish how the vignettes can be useful tools for engagement and dissemination to woodland owners and managers.

Other outputs based on the research

We have produced a publication (Mosaic Landscapes) which will be made publicly available online, shared under a creative commons licence. This publication is a compilation of the research carried out at Material Cultures into the relationship between the forestry industry in the UK and the built environment, from the state’s forests to privately owned woodland.

We will also share this work at lectures and talks online, notably in the upcoming Make Good Symposium at the V&A on the 1st of March, amongst others. The project work will also be published on our website - links to be confirmed.

Material Cultures was also recently commissioned to write an article on our research work on forestry for the Quarterly Journal of Forestry, a peer reviewed journal dedicated to sharing knowledge on the art and science of woodland management to an audience of landowners, foresters, arborists and others.

We already engage a significant following through our website and social media presence, of which we will take advantage for the dissemination of our work.

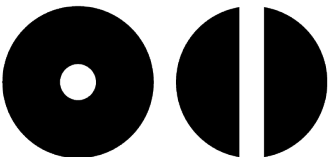
Future research plans

- Following publication of this report, we will explore the potential of a decentralised, regional Wood Hub for providing material outputs and impacting the UK's construction industry
- About a third of woodland is on land categorised as farm enterprise, but most of this is poorly managed and not integrated into the farm system. Our interest in the relationship between agroecological systems and the built environment will now extend into how arable crops such as straw, hemp and wheat can be applied in construction.
- Ultimately, we are looking to apply our research on materials derived from forestry and farming systems to the housing industry, which is one of the largest and most impactful sectors within the construction industry.

References

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4. Institute of Chartered Foresters, 'Can't see the skills for the trees – critical shortages in forestry workforce skills put climate targets at risk', Institute of Chartered Foresters (7 October 2021), www.charteredforesters.org/resource/cant-see-the-skills-for-the-trees-critical-shortages-in-forestry-workforce-skills-put-climate-targets-at-risk [accessed 15 February 2023].
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These Design Ecosystem Fellowships reports were commissioned by Future Observatory. Future Observatory is a national programme for design research supporting the UK's response to the climate crisis. The three-year programme is coordinated by the Design Museum in partnership with the Arts and Humanities Research Council (AHRC), which is part of UK Research and Innovation (UKRI)

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