Getting to know our forest

Harnessing citizen science, Kilsture Forest Community Group is doing the biodiversity assessment for their woodland. Julia Farrington *reports*

Kilsture Forest is a 204-hectare, 80–100-year-old mixed-woodland plantation which lies at the heart of the Machars in Galloway, completely surrounded by agricultural land.

Our community woodland story started in 2018 when Forestry and Land Scotland (FLS) undertook a review of its estate. Kilsture Forest, acquired by the Forestry Commission back in 1934, scored poorly against their criteria and was placed on the disposal list. Kilsture Forest Community Group (KFCG) was formed to co-ordinate the local community's heartfelt campaign to keep the forest from passing into private hands. We were told at the time that the only available option open to us was to buy the forest.

However, having researched the criteria used to assess Kilsture's value, we were able to demonstrate that the importance given to visitor numbers discriminated against forests in remote communities with small populations. Although the decision was, in principle, irreversible, our argument won through and Kilsture was taken off the disposal list. Seeing the strength of local feeling, FLS presented KFCG with a new way forward – to get involved in managing the forest via the Forest Enterprise Scotland, Community Agreements framework.[1]

We began with a volunteer path-maintenance agreement and a team of volunteers started clearing and restoring the trails as soon as lockdown restrictions were lifted in 2021. From the start, our local FLS team encouraged us to go up to the next level of engagement and sign a Memorandum of Understanding (MoU) which, as described in the framework, is "best suited to longer-term community relationships that involve the delivery of a range of projects over time". We were definitely in it for the long term, and we knew that we wanted to support the forest to thrive, but we were not sure at that stage what we could actually do.

Citizen surveyors mark out a 10 square metre plot as part of the Woodland Condition Assessment field training day.

That is, until one day when we were on a walkabout with the FLS team, the planning forester said with a sweep of his hand, "No-one knows what's in here." This immediately signalled a clear role for the community. We knew local groups and individuals held a lot of knowledge about Kilsture's wildlife, and what was not already known we could find out. In 2023, with funding from Future Woodlands Scotland, we launched our citizen science programme, and in 2024, with a clear sense of purpose, we signed an MoU to represent the community's priorities in managing Kilsture.

Under the terms of the MoU, KFCG trustees meet with FLS up to four times a year to discuss the management of Kilsture. FLS continues to hold legal and financial responsibility, with a commitment to maintain Kilsture's modest sustainable productive timber capacity; it removes dangerous trees, controls deer numbers and manages forestry contracts. As agreed with FLS, our principal role stated in the MoU is "through data collection to better understand forest ecosystems and how these could contribute to woodland management" or, as one forester said, we are "doing the biodiversity for Kilsture".

The offer to lease or buy the forest is part of the framework, but we are happy to stay where we are. This is the perfect solution. Without the practical liabilities and financial burden of land ownership, we are free to channel the community's energy and love for the forest into being informed and engaged co-custodians. Our citizen science activities have evolved into two distinct strands: citizen recording and citizen surveying.

Citizen recording

Our recording activities have been supported from the outset by South West Scotland Environmental Information Centre (SWSEIC). First off, they set up a Kilsture Forest 'project' on iNaturalist app, to corral all records made in Kilsture. The almost magical thing about iNaturalist is that this apparently impersonal digital interface is directly connected to two very real humans – Mark Pollitt and Malcolm Haddow – aka SWSEIC who manage all data on Kilsture. They materialise regularly to run training and species identification sessions, guiding us to build a meaningful baseline survey. In 2025, with funding from Inspiring Scotland, they created an interactive digital map of Kilsture's ecosystem,

From left to right: Kilsture 1000 project manager Elaine Rainey with a poplar hawk moth. Bryophyte specialists recording in one of the deep drainage ditches running through Kilsture. Forest School group checking wildlife camera. All photos: KFCG.

plotting all the species recorded to date. This brings the database to life and will be an invaluable tool in discussions about the environmental impact of planned thinning works.

In summer 2025 we launched the Kilsture 1000 challenge to make some noise about our work and boost the volunteer numbers. At the start of the summer SWSEIC held data on 861 species. Could we find 139 previously unrecorded species?

With support from local and national specialists and a cohort of new and existing recorders, rallied by project manager Elaine Rainey, we ran iD training sessions on bats, botany, birds, beetles, bryophytes and more, plus a dawn chorus walk and midnight glow worm hunts; and samples we took for an eDNA test for greater crested newt returned a positive result. All this activity generated a wave of new discoveries carrying us way past our goal to a magnificent 1,331 records.

SWSEIC keeps us on our toes, pointing out gaps: no spiders or worms have been recorded, very few small mammals. Their mantra is 'every record counts', even if you send in the 50th bluebell record. They don't mind. Your next might be an elusive spider or another species first for Kilsture.

Citizen surveying

Through our surveying work, we are trying to get a sense of the forest ecosystem as a whole. We are carrying out an ongoing, bespoke Woodland Condition Assessment, designed by woodland ecologists Dr Petra Guy and her PhD student Julija Fediaviete to assess biodiversity health. We are surveying Kilsture's wetlands and watercourses guided by Jamie Ribbens of Galloway Fisheries Trust (GFT), and scoping out a participatory feasibility study into wetland restoration with GFT this year. We commissioned a drone survey, recording tree species, age and health. In 2024 we presented a unique community-led Mycorrhizae Symposium which gave us a glimpse into the symbiotic world of fungal communities in the soil.

By observing the natural processes that drive the forest ecosystem we can begin to recognise and monitor indicators of forest health and how human intervention impacts these. We survey plots in each of eight different woodland habitat types across Kilsture, finding distinct plant communities in each, each requiring a different management approach. We count features that support biodiversity – standing deadwood, fallen deadwood, tree age-class and ground flora diversity – and feed that data back to Petra and Julija.

The link between species abundance and the resilience to endure extreme weather events and infestation reveals itself through this process. We record the direction of water moving through the forest and are shown how some sites that do not support healthy mature trees could be used to create ponds, to regulate the flow of water and restore habitat for threatened species.

The aim of this work is to build our knowledge and understanding as co-custodians of Kilsture. Everything we do feeds into that role. We are boots on the ground, treading carefully, bringing ears, eyes, added capacity and that sense of purpose. We are beginning to see for ourselves the beautiful, complex inter-relatedness of natural processes and how only a healthy ecosystem, supporting abundant biodiversity, can resist the impacts of climate change that occur with ever greater force and frequency.

Forest School

The Forest School programme, currently in its first, pilot year, is nurturing forest custodians of the future. Delivered by Ranger Toni during the school day, children come to Kilsture for outdoor learning and play. The vision is for every child to have 18 forest sessions over Primary 6 and 7, with plans to extend it to secondary years.

Reference:
1. *Community Agreements Definitions and Guidance*, Forest Enterprise Scotland, 2015.

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