



Courtesy of Newick and Sutton Hall Estate

Bicentenary project: planning 200 years ahead in Gipps Wood

Gipps Wood is located on the Sclater family's estate in mid-Sussex, southeast England. The Sclaters acquired the Newick Estate in 1819 and the neighbouring Sutton Hall Estate in 1967. The total property comprises around 1000 ha, of which around 280 ha are woodland, including Gipps Wood (23 ha) and an arboretum of 2 ha established by John Sclater in 1980–1.

To mark the bicentenary of the purchase of the Newick Estate by his forbear, Mr Sclater decided to look ahead 200 years and create woodland ready for climate change. The 'Bicentenary Plantation' covers 3 ha of the north section of Gipps Wood. It has been designed and planted to take account of the climatic changes anticipated for this century, the expected impact on various tree species and an assessment of the soils present.

Management objectives

Gipps Wood is managed primarily for timber production and adaptation to the changing climate, although wildlife conservation and carbon storage are important. Reflective management practice (i.e. learning through doing), with a view to sharing experience more widely, underpins work in Gipps Wood and the wider woodland across the estates.

Risks and opportunities

Main climate change risks

This area of southeast England is projected to be hotter and drier in the summer and milder and wetter in the winter. The main observations of possible climate change effects have been outbreaks of *Phytophthora cinnamomi* on sweet chestnut coppice, which are believed to be associated with increasing temperature and new rainfall patterns. Changes in phenology (i.e. the timing of re-occurring events in nature and their relationship with climate) such as bud break have also been observed.

Vulnerabilities

Summer droughts are expected to become frequent and severe and thus limit the use of some native broadleaf species for commercial purposes. Heat stress and drought are likely to increase tree damage caused by pest and disease attacks in the area. More frequent extreme weather events are expected, such as winter windstorms.



Find detailed information in UKFS Practice Guide *Adapting forest and woodland management to the changing climate*.

Information on the UK Forestry Standard and supporting guidance is available at www.forestryresearch.gov.uk/ukfs



Scots pine, hornbeam, wild service, Norway maple, walnut and sessile oak were planted in the spring of 2017. The oaks were of both English and Loire Valley provenance, following oak-planting stock and selection advice from contacts in Lyon. On the northwestern edge of the site, a soggy area of ground was planted with cricket bat willows. Establishment, maintenance and monitoring is being undertaken in-house. The spring of 2017 was characterised by late frosts and low rainfall, but the plantation has so far shown strong growth, and low beat-up rates (i.e. the number of trees that need to be replaced due to mortality) have been required. This is attributable to the adoption of best practice in plant sourcing, planting and establishment.

Monitoring and assessment

In future, monitoring of the plants will be critical to identify the relative success of the adaptation measures being applied. The findings will then be integrated into planning for other areas of the estate. Woodland management across the rest of the estate will also benefit from the insights generated through the Bicentenary Plantation, as well as the 1980–1 arboretum.

Lessons learnt

While Mr Sclater was keen to look ahead 200 years, ESC currently only runs until the end of the century, therefore plans will need to be reviewed each decade to take into account future advances in the software. It was also recognised that tools such as ESC and their outputs often require explanation from experienced users before findings are applied on the ground.

It was important to consider multiple risks (e.g. disease) associated with a simultaneous increase in drought and temperature, alongside the owner's own objectives and the advice of his forester, before final decisions could be made. Using information from various sources alongside local knowledge and experience of the wood to consider these factors and inform and develop the project was essential. The collective resources used helped to ensure that decisions taken were the best for the site, for example, when although Loire oak was found to be eight times more expensive than locally sourced oak of a local provenance, it was chosen to meet objectives.

Intended future outcomes

Gipps Wood has been adapted mainly through diversification of both species and provenance (climate matching), which is reflected in the species, provenances, spacing and planting plan. Experiences and insights generated are applied across the rest of the estates and have been shared with others in the forestry sector.

This case study is one of a number supporting the UKFS Practice Guide on *Adapting forest and woodland management to the changing climate*