Case Study 29

Salcey Forest , Northants and Bradfield Woods, Suffolk

Location and ownership of woodlands

This case-study deals with two woodlands in eastern England where coppice-with-standards working is being actively pursued in native oak-ash-hazel stands:-

1. Salcey Forest, Northamptonshire [NGR SP 803509] - the Salcey Forest extends to ~500 ha, lies 6 miles south-east of Northampton and is managed by the Forestry Commission. Part of the site is managed as a reserve by the Northamptonshire Wildlife Trust. The forest is regarded as an Ancient Woodland Site, with much having been replanted since the last war. PAWS restoration work is ongoing. Relevant areas of the forest for this case-study fall within the Salcey Forest SSSI site (158 ha) and retain native stocking, primarily oak high forest over ash/ hazel.

2. Bradfield Woods, Suffolk [NGR TL 936575] Salcey Forest extends to ~82 ha (~200 acres), lies 6 miles south-east of Bury St. Edmunds and is owned and managed by the Suffolk Wildlife Trust. This is an Ancient Woodland that is believed to have remained under active coppice-with-standards management for many centuries and is covered by NNR/SSSI designations (Bradfield Woods).

Significance/ reasons for selection as case-study example

These site were selected as case-studies within this project for two main reasons:-

1. They represent good examples of the active operation of coppice-with-standards working in oak-ash-hazel woodlands in lowland England (adoption scenario 18). This traditional management regime had fallen out of favour over the last century due to declining markets for small-diameter coppice poles. However current demands for woodfuel have changed the economics of such management, with a new use for underwood product, together with valuable oak from standard trees.

2. These examples demonstrate the potential value of an alternative silvicultural system in achieving conservation benefits and economic timber/ woodfuel products from the same site through resumption of active management. Both sites have strong nature conservation aims of management, with Bradfield Woods being a county wildlife trust nature reserve. Resumption of active coppice-with-standards is recognised to be of considerable benefit for biodiversity values.

Owner objectives for management (including adoption of ATC systems)

The primary objectives of management at these sites are active native woodland habitat conservation, production of woodland products for sale (oak and ash sawlogs with ash, hazel and birch coppice poles) and public interpretation of native woodland management systems. The Suffolk Wildlife Trust use Bradfield Woods as their main demonstration location for active coppice-with-standards working, with detailed interpretation materials and sales of coppice woodland products. Salcey Forest is a good example of the restoration of a coppice-with-standards working system by group selection felling in oak high forest stands dating from the mid-nineteenth century. The latter operation is currently producing large volumes of rather valuable oak timber.

Biophysical characteristics of the site

Salcey Forest - located on an gently undulating plateau site at 100-130 m asl. Climate is warm and dry [AT_5 of 1667 dd, MD of 179 mm, annual rainfall 622 mm]. The site has moderate exposure with a DAMS score of 14. The solid geology is of the Jurassic oolitic limestone producing imperfectly drained brown clay soils of moderate to high fertility [ESC SMR Moist to Very Moist; ESC SNR Medium to Rich]. These would naturally support acid to neutral oak-ash-hazel woodland of the type managed.

Bradfield Woods - located on essentially level ground at 90 m asl. Climate is warm and very dry [AT_5 of 1699 dd, MD of 208 mm, annual rainfall 595 mm]. The site is moderately sheltered with a DAMS score of 13. The solid geology is of the Cretaceous chalk overlain by imperfectly drained brown clay soils of moderate to high fertility [ESC SMR Moist to Very Moist; ESC SNR Medium to Rich]. These would naturally support acid to neutral oak-ash-hazel woodland, as found on site.

These sites have distinct ecological and silvicultural similarities and represent typical conditions under which coppice-with-standards working in oak might be used. Apart from seasonally wet soils, access and logistics for timber working are fairly good.

Stand history and current composition

These examples are found in native oak-ash woodlands with a coppice understorey of ash, hazel, birch, field maple, aspen and other native shrubs. At the Bradfield Woods, the stands are essentially semi-natural, although there is always the possibility of some past planting of oak and ash standards during the 18th and 19th centuries. There is a widely-spaced canopy of standard oaks (with some ash) over an actively worked coppice underwood of hazel, birch, ash, lime and other species. Natural regeneration of all species will occur to some extent, but tends to be submerged within the coppice regrowth. Many woodlands of this type were converted to oak-ash high forest during the period 1850-1950, and some were replanted with conifers between 1945 and 1985, so Bradfield Woods is an unusual survival as active coppice-with-standards. The Ham Street Woods in Kent are one of the few other examples under active management. At Salcey Forest the oak stands of interest are likely to be largely the result of replanting between 1820 and 1940, with some stored coppice oak stems. The density of mature oak managed under the oak high forest system means that the hazel-ash-birch understorey is less dense than at Bradfield and its growth tends to be suppressed. There is some natural regeneration of native broadleaves where the canopy is more open. Many other areas of oak woodland at Salcey Forest were replanted with conifers after the last war and are currently undergoing PAWS restoration work.

Silvicultural treatments applied to date and intended future silviculture

Bradfield Woods - here the management is ongoing under the coppice-with-standards regime, producing mainly underwood products for sale on site such as woodfuel and hazel for thatching, wattle and daub, bean poles and pea sticks. The coppice rotation is 25 years, worked on a “block of the year” principle, with the woodland divided into a similar number of coupes. Standard oaks are felled on a cycle of 100-120 years for oak sawlogs, with 10% currently retained to biological maturity, along with standard specimens of other native tree species, as wildlife trees and to provide a source of

seed for natural regeneration. Trials have been conducted with fencing of coppice coupes to examine impacts of deer browsing.

Salcey Forest - here the emphasis has been on restoring oak high-forest stands to active coppice-with-standards working as an element of native woodland ecological restoration. In some stands this has required group selection felling of mature oak of 150 years standing to reduce the stocking density/ basal area to the level required for productive coppice regrowth. A by-product of that operation has been production of considerable volumes of valuable oak timber. Ongoing management should produce smaller volumes of standard oak timber on a rotation of 80-120 years, along with greater volumes of coppice products that could supply craft or woodfuel markets. In younger stands of oak, underwood has been re-coppiced and standard poles thinned.

Evaluation of current silvicultural status in terms of ATC adoption/ regeneration

As an ongoing, mature application of coppice-with-standards, Bradfield Woods should be seen as in ***developmental category 1*** (complete or near complete transformation), whereas as an example under active restoration, Salcey Forest sites are in ***developmental category 2*** (progressive/ mature transformation). Natural regeneration is secondary to coppice regrowth at these sites, but is of importance in providing a supply of maiden oak and ash stems to produce standards trees. It is likely that coppice-with-standards management will be sustained at both of these sites.

Commentary on inventory and monitoring protocols/ demonstration potential

Existing inventory and monitoring at these sites emphasises native woodland habitat condition and natural regeneration rather than silvicultural parameters. Salcey Forest is also subject to the standard Forestry Commission periodic inventory procedure. There is a fairly long run of ecological surveys and assessments for Bradfield Woods, which already functions well as a demonstration site for active coppice-with-standards working (organised educational visits and self-guided walks). Salcey Forest could function in a similar way if additional interpretative signage/ leaflets were prepared.

Commentary on economic and operational implications of ATC adoption

Given strong market demand for both oak saw timber and coppice-derived woodfuel the historical coppice-with-standards system has much to recommend it economically and meets many of the conservation management objectives for native woodland, such as promotion of coppicing plants and butterflies requiring open habitats. Costs of sensitive silvicultural working in designated woodlands always tend to be higher.

Other relevant field examples recorded within the project

The most useful comparisons for this case study are with silvicultural approaches adopted in other native oak woodlands - primarily Wyre Forest and Forest of Dean (Case Study 28 - uniform shelterwood) and Atlantic Oakwoods (Case Study 1 - diverse silvicultural approaches). The combination of timber and woodfuel produced from restored coppice-with-standards working is relevant to small woodland examples such as Wilderness Wood (Case Study 25) and Hooke Park (Case Study 22)

Photographic record

Left: area with mid-rotation oak standards and recently cut coppice

SALCEY FOREST

Right: area with young oak standards and recently cut hazel coppice

Left: area with mid-rotation oak standards and recently cut coppice

SALCEY FOREST

Right: area with mature oak standards which are being thinned to allow coppice development

Left: presentation of oak butts arising from thinning of standards

SALCEY FOREST

Right: area with mature oak standards which at appropriate spacing with strong coppice below

Left: visitor interpretation of active ancient woodland management (Suffolk Wildlife Trust)

BRADFIELD WOODS

Right: block of the year with recently-cut hazel coppice

Left: block of the year with coppice regrowing

BRADFIELD WOODS

Right: area last cut several years earlier with mature re-grown hazel coppice (pea-stakes in foreground)

Left: tractor trailer forwarding of woodfuel arising from coppice restoration working

BRADFIELD WOODS

Right: processing of woodfuel arising from coppice restoration working