

Wider application

Direct seeding deserves to be much more widely used as a technique for establishing informal woodland. The costs of implementation and long term management are relatively low and if seed is sourced from local trees and hedgerows there is great scope for practical community involvement in seed collection, cleaning, storage and sowing. The use of seeds from local sources has the added advantage of reinforcing the local gene pool.

Further information

National Urban Forestry Unit

This leaflet is one of a series produced by the National Urban Forestry Unit. NUFU is a charitable trust which provides a national focus for the exchange of information and good practice in urban forestry. If you would like further information on other case studies, or if you have examples of good practice to share, please contact:

National Urban Forestry Unit
The Science Park
Stafford Road
WOLVERHAMPTON WV10 9RT

Tel: +44 (0)1902 828600
Fax: +44 (0)1902 828700
Email: info@nufu.org.uk
Website: www.nufu.org.uk

Tom La Dell

Tom La Dell is a landscape architect and landscape scientist and has run his own practice for 20 years, undertaking a wide range of landscape projects. He developed and set up the research into tree and shrub direct seeding and has written widely on landscape and ecological issues.

Tom La Dell
Stocks Studio
Grafty Green
MAIDSTONE
Kent ME17 2AP

Tel: +44 (0) 1622 850245
Fax: +44 (0) 1622 858063
Email: tomladell@aol.com

Further reading

Gordon AG & Rowe DCF (1982) *Seed Manual for Ornamental Trees and Shrubs*. Forestry Commission Bulletin No. 59

La Dell T (1983) *An introduction to tree and shrub seeding*. Landscape Design, August, pp 27-30

La Dell T (1987) *Tree and Shrub seeding*. Landscape Design, August, pp 53-54

La Dell T (1988) *The establishment of amenity trees and shrubs by direct seeding: weed control and management*. Aspects of Applied Biology, 16

Putwain P (1998) *Direct sowing of trees and shrubs on roadside embankments*. University of Liverpool/Welsh office

Tucker J (2004) *Woodland creation: a direct approach*. Green Places, July, pp 30-31

Willoughby I, Kerr G, Jinks R & Gosling P (1996) *Establishing new woodlands by direct sowing*. Forestry Commission Research Information Note 285

Willoughby I (1996) *Weed control when establishing new farm woodlands from seed by direct seeding*. Forestry Commission Research Information Note 286

Photography: Tom La Dell

PRODUCED BY



Urban Forestry in Practice

Creating new woodland by direct seeding



CASE STUDY 44

Creating new woodland by direct seeding

Introduction

Trees and shrubs colonise naturally from self-sown seed on many sites in Britain. This process can be adapted for establishing new, naturalistic woodlands and scrub by directly sowing seed. Agricultural cultivation and sowing techniques can be used but it is necessary to take account of the varying seed sizes and dormancies when designing a scheme. With direct seeding it is possible to create communities of trees and shrubs which appear more natural than those established with nursery grown stock and horticultural planting techniques.

Most tree and shrub seeds from temperate regions have varying dormancy mechanisms which mean that they do not germinate immediately after they are sown. The dormancy is broken by a mixture of warm and cold periods. Acorns are an exception and cannot be stored at all if allowed to dry out. Pre-germinated seeds are available from specialist nurseries that hold them in cold storage through the winter, but these must be kept moist and sown immediately on arrival. Tree and shrub seeding techniques are designed around the seed sowing and the need for good weed control at the seedling stage.

The project described below was sown in early spring using seed that had been cold stored after collection in the autumn. With the alternative of autumn sowing, the natural warm and cold periods should break the dormancy by the spring, but this is becoming less dependable with milder winters.

Specific example

Project name and location

A new oak wood and areas of mixed woodland at SINGLETON, ASHFORD, Kent, UK
Grid references TQ 985 413 and TQ 991 411

Project objectives

- To establish a new wood of eight hectares as the central feature of a new urban open space and as a backdrop to new housing. It was sown in spring 1979 and 1980.



Sowing acorns with a cabbage planter at Singleton (1979)



The canopy is usually closed within five years of sowing

Project design and implementation

Existing herbaceous vegetation was killed with a systemic herbicide and the soil was cultivated using spring tines on an agricultural tractor to produce a fine tilth and furrows 100 mm deep at 200 mm centres.

Oak was chosen as the main tree species, with ash, field maple and cherry as secondary species and hazel, hawthorn and guelder rose to provide a shrub layer. The mixes were varied to produce some areas dominated by oak, some more mixed and some woodland fringes dominated by shrubs.

Acorns naturally germinate in the autumn as soon as they fall, so they were kept in cold storage at around 1 or 2 degrees Celsius through the winter to maintain dormancy. The seeds of the other species were cold stored at the same temperature to break dormancy in preparation for spring sowing.

The oak and hazel were sown first by hand and lightly harrowed in. The smaller seeds were then sown together with a nurse crop of dwarf barley at 5 to 10 grammes per square metre, harrowed in and lightly rolled where necessary. An intended germination rate of 5 tree and shrub seedlings per square metre determined the sowing rate, with an assumed survival of 50% for large seeds and 10% for smaller seed.

The barley provided early shade and shelter for the vulnerable tree and shrub seedlings and reduced weed seed germination and competition. A nitrogen-fixing nurse crop of broom was used in some areas and this had grown to over one metre tall by the end of the first year.

Part of the area was fenced with rabbit proof netting, but in this case, no difference was seen between the fenced and un-fenced areas. Patchy regrowth of perennial grasses was treated with *Kerb* (propyzamide) the following winter and where germination exceeded expectations, the seedlings were thinned using secateurs.

Results

The oaks were some two metres tall after five years and after 25 years there is a mixed canopy young woodland around 15 to 20 metres tall.



After 25 years, the woodland is mature enough to shelter footpaths and cycleways