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PROPOGATION OF LOWLAND WILLOWS BY WINTER CUTTINGS

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Summary

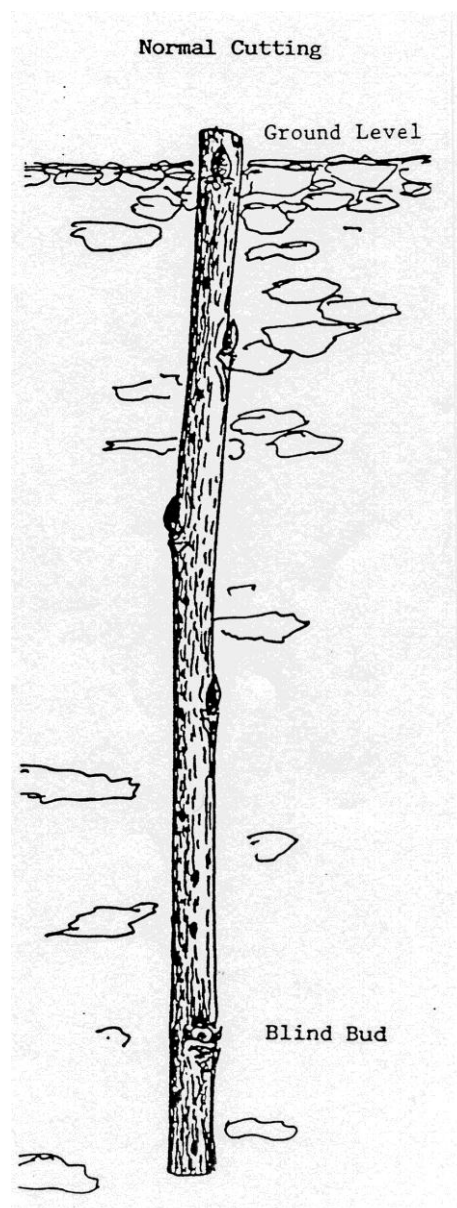
Plants of native willows (*Salix* spp.) are not generally available from the nursery trade. Use of cuttings to propagate willows both in the nursery and *in situ* in the landscape are described.

Introduction

1. Informal amenity plantings, especially in rural areas, are increasingly using indigenous species. Provided suitable plant material grown from seed or cuttings is available from nurseries, traditional techniques of planting may be appropriate. The extremely small seed of willows (*Salix* spp.) is not usually available commercially because the seed remains viable for only a short time after collection. Nurserymen tend, therefore, to rely on vegetative propagation, principally cuttings of woody shoots taken in winter, and concentrate on ornamental and timber crop cultivars.
2. The native species such as *S.cinerea* ssp *oleifolia*, the common sallow, are rarely available in the nursery trade. This may be because plants can be readily produced from cuttings either in a nursery situation or in the final planting position. The one exception is true *Salix caprea*, the Goat willow, which relies on seed for reproduction and does not grow well from winter cuttings. (See appendix 1 for a list of native willows).

Season for cutting collection and planting

3. Hardwood cuttings may be taken at any time during the dormant season, but traditionally they should not be planted (inserted into the soil) before the end of January. It is believed that this practice ensures that roots do not grow until late winter when the soil is warming and there is less risk of frost lift of the cuttings or of rot occurring in waterlogged soils. If immediate planting is not possible moist cuttings may be stored in an air tight polythene bag at 3° to 4° C for up



to 6 weeks. If the temperature in the bag rises to above 6° C roots will begin to grow and the plants then become vulnerable to drying and much more difficult to handle. Planting should be completed by the end of February so that roots develop and the cuttings become established before the risk of spring droughts.

The cuttings

4. Cuttings should be made from strongly grown ripe wood of the last growing season. This can be obtained most easily from coppiced stock plants in a “stoolbed”. The alternative is to obtain cuttings from pollards, coppice or epicormic growths in the field. Cuttings from the crowns of mature trees should be avoided.
5. Cuttings must be at least 20 cm long and 12 – 25 mm thick with a single healthy bud about 1 cm from the top. Cuttings with “blind” buds at the top of the shoot should be avoided because the blind buds are replaced by two small adventitious buds which tend to develop only slowly. Cuttings up to 50 cm long with or without cut back branches can be used where bushy plants are required to produce a thicket.

Method of planting

6. For the first growing season cuttings benefit from being in well cultivated, fertile, moist and weed free ground of the type usually found in a sheltered nursery or garden. Cuttings should be inserted vertically, with the buds pointing upwards, into soft ground so that at least 20cm is below the surface. On firm ground they should not be pushed or forced in but inserted into narrow pilot holes. If a single shoot is required the whole cutting should finally be just at or slightly below ground level. (see diagram)

Method of planting in a nursery

7. The cuttings should be set 30 cm apart in rows 60 cm wide to enable easy access and lifting after 1 year. Roots of more closely spaced plants will become entangled with each other and will inevitably be cut during lifting. Root growth will begin in March but shoots may not start to extend until May. The growing season will continue until the following November when heights of 1 – 2 m, depending on species, may be expected.
8. After 1 year in the nursery bed, plants must be lifted before root spread becomes excessive. At this stage the plants can usually be planted out. Rooted cuttings with shoots shorter than 50 cm can be grown on for a further season.

Method of planting *in situ*

9. Cuttings can be rooted in the landscape position provided the site is thoroughly prepared. Compaction in the soil should be broken either by ripping the site to at least 50 cm or locally by creating planting holes by driving a crowbar or spade into the ground.
10. Although the willows have a reputation for tolerating wet soils they cannot survive in anaerobic conditions and localised drainage may therefore be needed in addition to the destruction of compaction. In addition willows will not tolerate extreme drought conditions in the summer.
11. The cuttings should be inserted as in a nursery but provision should be made to reduce competition from herbaceous plants. As willows are susceptible to foliage scotching if liquid based herbicides are applied in summer, polythene sheet mulches (Davies 1987 a & b) may be worth considering. Alternatives may be pre-planting herbicide treatment or complete cultivation.

Aftercare

12. Once the cuttings, whether planted from a nursery bed or rooted *in situ* are established, they may benefit from being cut back (stumping). The decision to do this will depend on the objectives in planting the species, and the amount of growth during the first year. If single stemmed trees are required, and do not show signs of developing naturally, cutting back is essential. Stumping consists of cutting off the whole shoot, preferably in early March, to within 3 cm of the ground. The subsequent regrowth usually occurs as a single strong shoot. However, if more than one shoot grows, the weaker shoots must be rubbed or cut off at an early stage, unless multi stemmed bushes are acceptable. Adequate weed control is essential in the season after stumping back. Almost no further aftercare will be required. Irrigation is not essential. Artificial fertilizers are unlikely to be required. However, species such as *s. viminalis* may fall over or lean at about 10 years of age due to excessive canopy development. Pruning before this stage to reduce crown size or coppicing may be beneficial.

Appendix 1

British Native Willows (Excluding Dwarf forms) (Meikle (1984))

Bay Willow	<i>Salix pentandra</i> L.
Crack willow	<i>Salix fragilis</i> L. <i>Salix fragilis</i> v <i>furcata</i> Seringe ex Gaudin <i>Salix fragilis russelliana</i> (Sm.) Koch.
White Welsh willow	<i>Salix fragilis</i> v <i>decipiens</i> (Hoffm.) Koch. <i>Salix x meyeriana</i> (<i>pentandra</i> x <i>fragilis</i>) Rostk.ex Willd.
White willow	<i>Salix alba</i> L.
Golden willow	<i>Salix alba</i> v <i>vitellina</i> (L). Stokes.
Bedford willow	<i>Salix x rubens</i> (<i>alba</i> x <i>fragilis</i>) Schrank.
Almond willow	<i>Salix triandra</i> L.
Purple willow	<i>Salix purpurea</i> L.
Common osier	<i>Salix viminalis</i> L.
Goat willow	<i>Salix caprea</i> L. <i>Salix x sericans</i> (<i>caprea</i> x <i>viminalis</i>) Tausch ex A.Kern.
Grey sallow	<i>Salix cinerea</i> ssp <i>cinerea</i> L.
Common sallow	<i>Salix cinerea</i> ssp <i>oleifolia</i> Macreight.
Eared sallow	<i>Salix aurita</i> L. <i>Salix x fruticosa</i> (<i>aurita</i> x <i>viminalis</i>) Doell

Dark leaved willow *Salix myrsinifolia* Salisb.

Tea-leaved willow *Salix phylicifolia* L.

References

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