

# *Windrush Willow*

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## **LIVING WILLOW FACT SHEET**

By

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### **Introduction**

These notes are intended to give basic information on how to make a living willow structure, they have been compiled from information collected from various sources and our thanks go to Stephanie Bunn of Woodland Craft Supplies and Steve Pickup of The Willow Bank.

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## Handling & Propagating Living Willow

At Windrush Willow we are no longer producing rooted willow, any propagating or planting of willow where rooted material is **not** being used is best undertaken when the willow is dormant. This is after the leaves have dropped and prior to the new leaf buds opening or roughly 1<sup>st</sup> December to 10<sup>th</sup> March for the UK.

### Slips

A slip is a hardwood cutting taken from the stem or branch of the parent plant it is simply a 9" long section. No special cuts are needed and a long rod can be chopped into several sections with a pair of secateurs. Best planted straight away by pushing into the soil to a depth of 8" with the leaf buds pointing upwards. ^ . They can be stored in a cool fridge for a couple of months.

### Whip or Rod

A whip is just the whole stem rather than a section of it, these can be between 4 and 11ft long depending on variety.

### Bare Rooted Whip

A Whip on which a juvenile root system has been developed by either placing them in a tank of water or temporarily plunging them into the ground or some form of growing media for a few weeks

### Container grown

A whip that has been rooted into a container and grown for at least one season so that a full root system has been developed.

### Layer Rooting

A Whip which has been planted into the ground but then the lower 12" of the above ground stem has been jacketed in a 9" black plastic sleeve filled with compost. The whip roots both into the ground and into the soil in the jacket. It is harvested by cutting at ground level. The root system in the jacket is not as developed a pot grown whip but is more developed than the bare rooted whips.

The table below summarises the different ways in which willow can be propagated, **we now only supply unrooted material.**

### Propagating Willow % Success Rate

### Key

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Best Time
Unrooted Slip into ground	85	98	98	98	98	90	80	30	N/A	N/A	N/A	N/A	OK
Unrooted refrigerated slip into ground	N/A	N/A	98	98	98	95	85	60	N/A	N/A	N/A	N/A	Caution
Unrooted Whip into ground	90	98	98	98	98	90	50	10	N/A	N/A	N/A	N/A	Is it worth it?
Unrooted Slip into watered pot	95	98	98	98	98	95	85	60	N/A	N/A	N/A	N/A	Not/Available
Unrooted Whip into watered pot	95	98	98	98	98	95	85	50	N/A	N/A	N/A	N/A	Not/Available
Layered whip well watered	98	98	98	98	98	98	98	95	95	80	80	95	
Bare Rooted whip well watered	N/A	N/A	98	98	98	98	95	70	50	20	N/A	N/A	
Pot Grown well watered	98	98	98	98	98	98	98	98	98	98	98	98	

Freshly cut Willow is flexible and pliable but must be treated with some care as any living plant should be. Ideally winter cut rods should be used immediately upon cutting however they can be stood upright with the butts (thicker cut end) in 4 inches of water in a dark shed or garage for a couple of months before use. If this method is used then the bottom 4 inches of the rod should be removed immediately prior to planting. It will have formed roots, which will be damaged on planting, and this section of stem will be deleted of natural rooting hormone, so new roots will not form.

**The willow we despatch should be unpacked immediately upon receipt and used within a couple of days or stood in water as described above.**

## **Willow Varieties to use**

By far the best variety to use is *Salix Viminalis* (Windrush Willow Order Code GP1), but steer clear of some of the hybrid varieties (e.g. Bowles Hybrid as they are prone to canker). Our GP4 Hybrid variety is fine but very vigorous.

To add colour we recommend *Salix alba x fragilis* "Golden Willow" (Windrush Willow Order Code C1), planted as cuttings at the base of the structure.

However it is partly the aim in Living Willow Structures to get the rods to pressure graft where they cross. This is more readily achieved when the variety being used is all the same.

## **Planting Unrooted Willow (Dormant Season Only)**

This is by far the easiest and cheapest way to plant living willow structures. The ground into which the structure is to be planted should be weed free. We recommend cutting down any existing vegetation or mowing the area if it is lawn, the inclusion of organic material in the soil is always a benefit. Spread woven polypropylene (see price list under accessories), dig in the edges of the mulch sheet or secure with ground staples at 0.5 meter intervals and ensuring that the area covered is at least 0.25m beyond the structure. To improve the aesthetics the polypropylene can be covered with bark chipping's or gravel.

Most willows are pretty tolerant of soil and wind conditions however they do best on heavier soils or where the water table is high. They also require lots of light so avoid shaded positions. Willow is very attractive to rabbits and deer so protection may be required from these pests.

**Caution willow roots travel a long way and will seek out drains and other sources of moisture. They also transpire a large quantity of water and will tend to dry out a heavy clay soil – so do not plant near to any building or foundations. We recommend a planting distance of 1.5 times the height you will be allowing the plant to grow too from any structure, building or drain.**

Once the site has been chosen and the polypropylene secured in position, cut 1" long slits in the polypropylene at the positions required for the uprights needed for the structure. For most structures a spacing of around 10 inches works best. Using a metal spike make holes in the ground, through the slits in the polypropylene, to a depth of at least 14 inches. See Figure 1 at the end of these notes. When forming a dome, tunnel or arch it is useful to angle the holes at 45 degrees, (See figures 2 and 3). Push the uprights into the holes, butt first, to a depth of at least 12 inches. **DO NOT FIRM THEM IN AT THIS STAGE.** If arches, tunnels or domes are being made the willow uprights can be tied together loosely with string at the positions where they are required to cross.

## **Weaving Techniques**

Living Willow structures work best when left as open as possible, to allow air and light to the growing rods. It is however sometimes useful to assist in tying the structure together by putting in a row of binders using a pairing stroke, as these binders are not planted they will dry and not sprout, (see figure 4). If more sophisticated weaving is required then it is recommended that a book on basket making be borrowed from your local library. This will have illustrations of many more weaving techniques. A general tip is to put some of the rods within the structure at a slant as this encourages side shoots to grow along the length of the rod. However no part of any rod should curve downwards as willow sap will not flow downhill and the rod will die back to the point that it starts to curve downwards.

## **Planting Rooted Willow (Growing Season Only)**

It is also important to impede weed and grass growth around these rooted willows however a mulch sheet will not be possible to lay. We recommend marking out the planting lines and striping off and removing the turf for 1 spade width either side of the planting line. Then dig a trench 1 spade wide and 14" deep so that the centre of the trench corresponds with the planting line, tip ensure the dug out soil is placed well away from the side of the trench so it does not get kicked back in during planting. Fill the bottom 2" of the trench with compost or well-rotted manure. Strip all the leaves except the top 4 from any bare rooted or layer rooted whips, the leaves of container grown willows can be left on. Place the rooted uprights into position removing any container or plastic sleeve, anchor them in place by pushing the butt ends into the loose soil in the bottom of the trench. Tie 14" long sections of 1.25" plastic pipe to each upright with tube tie such that 2" of the pipe will be visible above ground level when you have back filled the trench. Tie you uprights in position and add your binders as for winter planting then plant your diagonals again remove any container or sleeve. When the structure has the desired shape and planting is completed water the trench heavily. Then carefully back fill the trench and tread down the fill. Mulch the section where the turf was removed with bark or stone. Keep the water pipes filled by watering daily for 2 months then reduce the watering as dictated by local rainfall. The water pipes can be removed after 1 growing season.

## **Fedges**

The name being coined for a living willow fence / hedge is a Fedge, there are two basic styles based on either a criss cross (diamond) pattern or vertical uprights and slanted weavers.

## **Tunnels**

A tunnel is simply two parallel rows of fedge tied together at the top. The shape is assisted by planting the uprights at a 45 degree angle (see figure 3).

## **Arches**

These can be formed in the same way as tunnels- just treat them as a very short tunnel. However if you want a more formal arch with vertical sides then you will need to erect a steel or treated timber frame to tie the uprights to and you will need to plant the uprights vertically rather than at a 45 degree angle.

## Living Willow Maintenance

The maintenance of living willow structures is crucial to their long-term success, a little and often is the rule.

With tunnels, Domes & Arches it is essential to weave in regularly to bind in the top, which has a tendency to open up. In most cases the weaving in technique on a regular basis or at least twice a year is recommended. Take the side shoot in and out of the original rods in a random pattern just slightly uphill from the horizontal, willow sap does not like to travel downhill.

For more formal structures such as a diamond arch fedge the new growth can be cut off back to the original shoots during December to March so that the pleasing pattern of the original structure is maintained.

Long growth can be cut off in December and planted alongside any dead rods in order to grow alongside them and replace them. It is a good idea to trim any long and thick growth off the top of structures at the start of the winter to minimise the disruptive effect of high winter winds. Cut off material can also be used to beef up the binders.

After 3 or 4 years of weaving in some areas of the structure may become too thick to weave more in, at this point shears or a hedge trimmer can be used to maintain the structures shape. Cutting out any dead or thick material will help to allow light in to the new growing shoots.

Pulling out of grass and other weeds around the base of the structure is also a good thing to do particularly for the first 3 years, as this growth will take moisture and nutrients away from the willow. As with all plants a little fertiliser of some description will benefit the health of the willow.

Willow supports nearly as many bugs and diseases as Oak trees inevitably some damage will be done and some rods lost however not many of these pests and diseases will kill the willow – just reduce growth. One pest that can cause an indirect problem is the willow aphid a large sap sucking aphid which is unsightly but not dangerous. The problem comes from the fact that they exude honeydew, which is fed on by wasps and hornets. This problem comes around roughly on a 4-year cycle and it is recommended that children avoid playing around these structures if large amounts of wasps are reported. Fortunately the main problem occurs in the school holidays and is only very bad every 4 years or so.

Fig 1

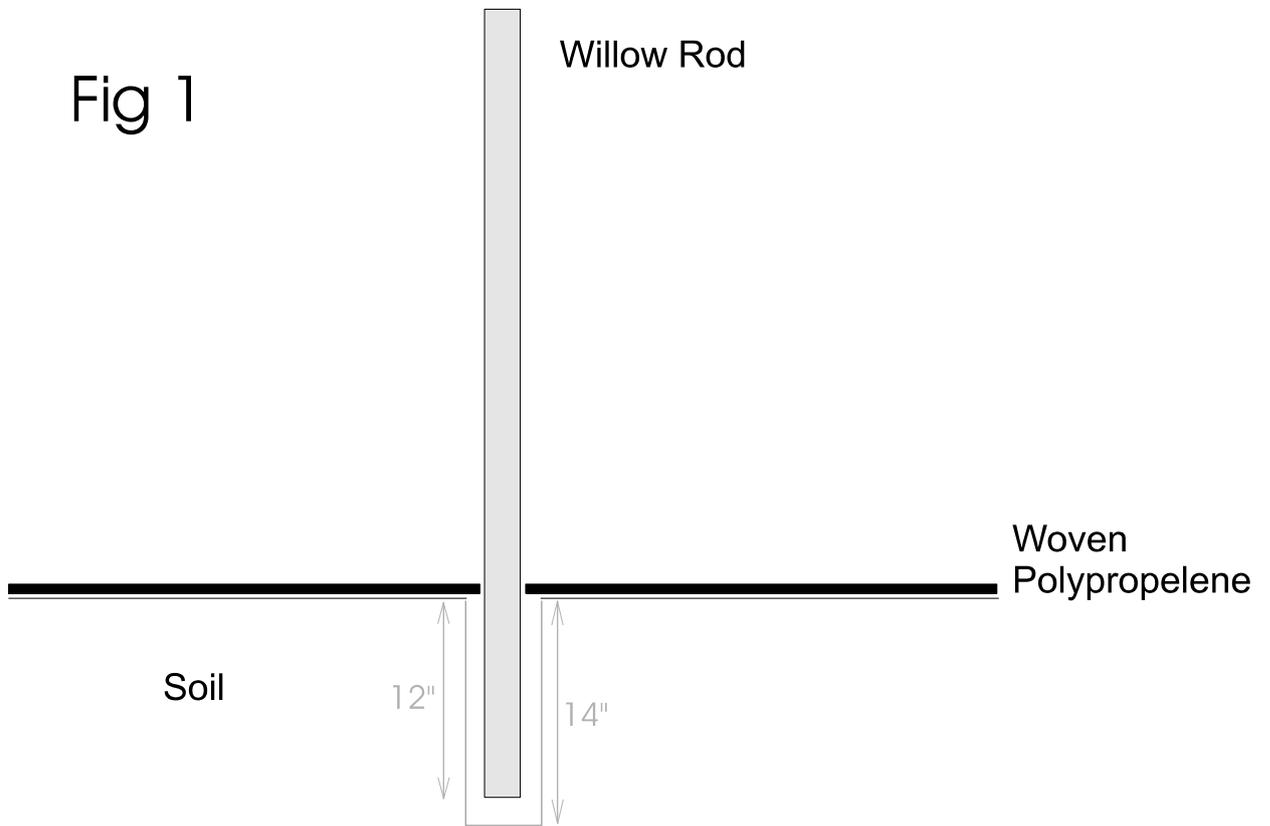


Fig 2

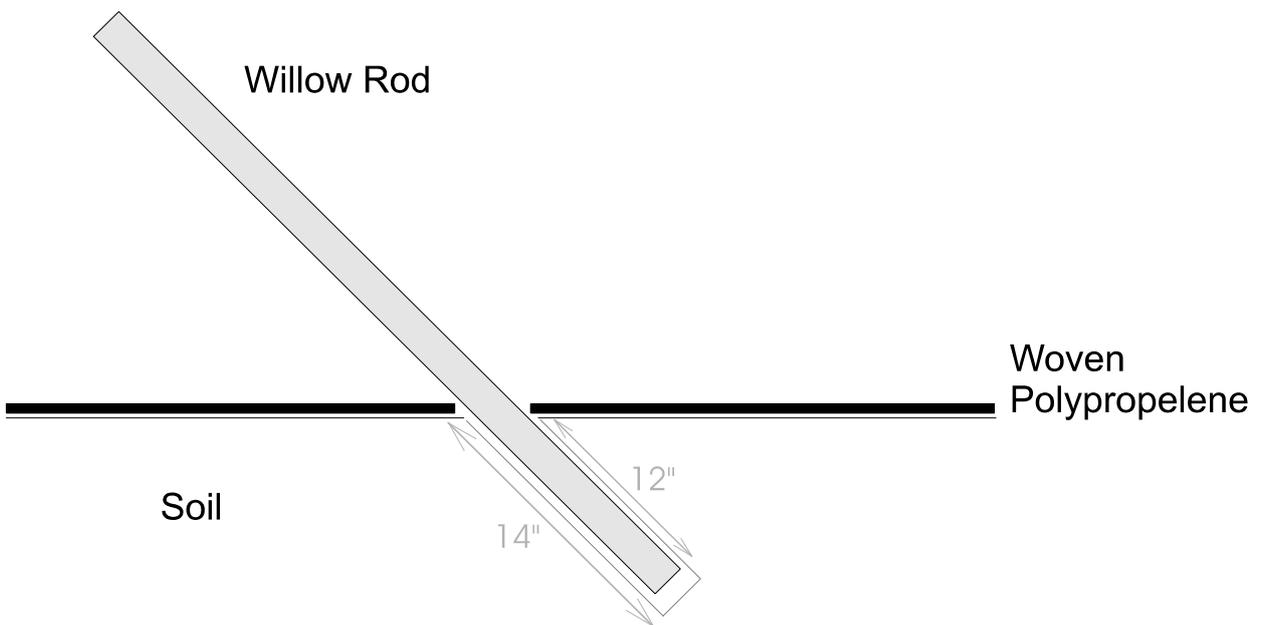


Fig 3

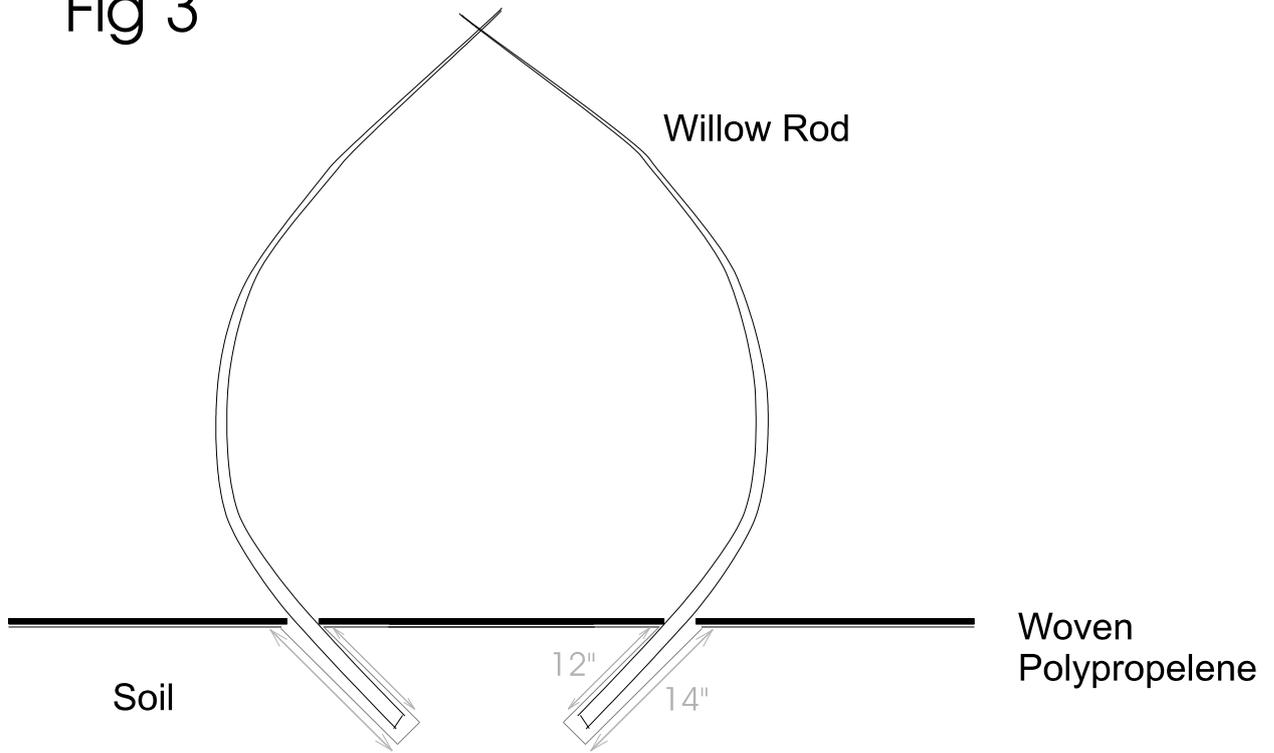
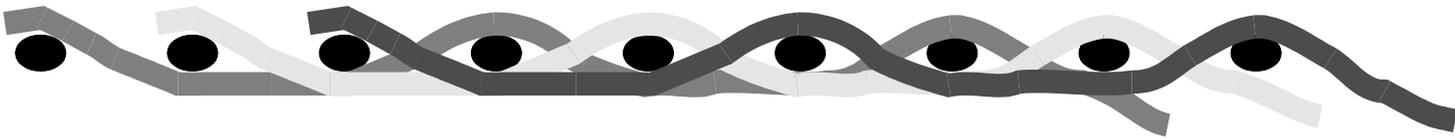
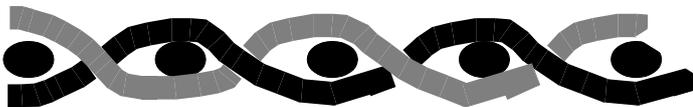


Fig 4 Basic Weaves

Three rod-whaling: this is a basketry stroke which is very useful for holding upright stakes in place at the base of your structure.



Pairing: this is working with two alternate weavers and is a very strong stroke.



Randing: this is the basic in and out weave which is very useful for covering large areas quickly. It can be done with several pieces of willow at a time.

