

Hovells Creek Landcare Group

2017 PLANTING NOTES FOR LINKING PADDOCK TREES FUNDED BY NSW ENVIRONMENT TRUST*

The 20 HCLG members planting linking paddock trees during winter 2017 range from some who have been planting paddock trees for the past 25 years, to others who have never previously planted a paddock tree.

These planting notes are intended primarily as a guide for the newcomers. They aim to summarise the key principles of successful paddock tree planting based on lessons learned over the past 25 years. Hopefully those members with experience may also pick up the odd idea and be able to make suggestions for future versions of the notes.

A. SUCCESSFUL PLANTING OF PADDOCK TREES

Successful planting of paddock trees depends on:

1. **Use Good Tubestock Young Trees** – these will be paid for by HCLG and be sourced from McDonald's Farm Trees, who provide quality tubestock in 50mm x 50mm forestry-type black plastic tubes.
2. **Plant Early in the Season** – it is important to plant in late-April or May, or as soon as the autumn or early-winter rains have softened the ground sufficiently for digging to a shovel depth. Early planting gives tree tubestock time to get their roots established while the soil is still warm from summer and enables continued root growth through the winter. This means the trees are ready to grow in the spring, or if they face a dry hot spring or a particularly dry summer are by then well established and better able to handle such weather.
3. **Loosen the Soil** – it is important to dig and loosen the soil as deep as possible, desirably to at least a shovel depth. Loose soils have much better aeration and water holding capacity than compacted soils, allowing roots to grow and establish themselves more readily.
4. **Leave Mesh Guards as Long as Necessary** - until trees are above browsing range for stock and their trunks can bear rubbing weight of livestock.

B. LAYOUT OF PADDOCK TREES

The objective of HCLG's NSW Environment Trust-funded Habitat Connectivity Paddock Tree Planting Project is to plant paddock trees to provide connectivity between existing patches of trees and shrubs. The paddock trees should be staggered at 30-50m intervals within a corridor that can be up to 50 or even 100m wide, so that birds can use them as a bridge between existing patches of trees and shrubs.

Suzie Jackson has provided project participants who are doing the majority of the plantings with proposed layouts for connectivity tree plantings on their properties. Where connectivity plantings can be organised to coincide with her proposals that is obviously desirable. However, where farm management or other practical constraints make her proposed layouts impracticable then other layouts should be adopted that follow the basic guiding principles summarised in the previous para.

* Formal project title is, 'Habitat Restoration at the Grassy Box Gum – K2W Flyways Interface'

C. CUTTING AND PREPARING MESH GUARDS

Rolls of mesh tree guard are either 1200 or 1650 wide, made of 4mm gauge galvanized wire, and are 28.5m long. (Remember that 1200 high guards with 2 steel posts are only suitable for sheep and cattle need 1650 high guards with 3 steel posts.) The rolls of mesh are cut into 12 lengths each 2.38m long, which can then each be rolled into a tree guard with a diameter of 0.7m.

One approach to cutting up rolls of mesh is to find a flattish location and after untying the roll (**be careful** as the roll is tensioned and can quickly partly unwind when untied) to stake down the open end before unrolling the mesh roll (which is really a two-person job) and then staking down the other end. The cutting lengths to be marked on the unrolled roll ready for cutting are:

2.4m, 4.8m, 7.1m, 9.5m, 11.9m, 14.3m, 16.6m, 19.0m, 21.4m, 23.8m, 26.1m.

Alternatively some people count the number of squares in 2.38m and then count off the squares to find their cutting marks. Another approach is to measure a series of 2.38m lengths one after the other. However, without careful measuring this can result in an error in the twelfth length, which ends up either too long or too short!

We have found the best approach when cutting across the mesh is to first cut across all but the middle two or three wires. This enables you to do most of the cutting and to then go back and cut the last couple of wires, perhaps with somebody to help you to stop the lengths of mesh springing up as you cut them off.

Cutting can be done either with a largish angle grinder or with long-handled bolt cutters. Angle grinders – apart from safety concerns about their use and being rather back-breaking to use – can also be a significant source of sparks. This makes them unsuitable at times of bushfire risk. Cutting is sometimes helped by sliding a piece of wood under the mesh to help lift it off the ground, so enabling the bolt cutters/angle grinder to have some clearance. Long-handled bolt cutters should be well-oiled and have their bolts loosened to make them easy to use

HCLG has three pairs of lightweight long-handled bolt cutters which are good for cutting up the rolls of mesh and which can be borrowed from John Baker.

When forming the 2.38m lengths of mesh into a tree guard it is best to allow an overlap of one row of mesh squares to help keep the roundness of the guard, before tying them with 3 pieces of galvanized tie wire (middle first and then top and bottom). Some people cut the mesh close to the next vertical wire so that the free pieces of horizontal wires can be twisted back on themselves. While this makes a very secure guard such guards are much harder to undo when removing them. Tie wire, which does the job very securely, is easy to cut when removing the guards.

D. BENEFITS OF PREPARING/DISTRIBUTING MESH GUARDS PRIOR TO PLANTING

Carting formed round mesh guards to a paddock location can be time consuming as only 5-7 formed guards will fit on a ute tray. An alternative approach is to load all 12 of the unformed lengths of bent mesh on the ute tray by sliding them inside each other; take them to the paddock and then tie them into tree guards at the planting site.

Things may be busy when it comes to planting time. So one approach in sheep country (less suitable for cattle, which may walk over them and move them round) is in February or March to cut up the rolls of mesh; cart them to the paddock along with the steel posts; form and tie them in the paddock; and then actually stand them with the steel posts laid across their bases where you intend to plant the trees. This allows you to work out your layout and adjust it once you have laid out all of the mesh guards. It also allows you to spray the planting sites with glyphosate (Roundup) if you wish

to, though this may not be necessary except where the ground tends to have a cover of thick grass and weeds.

This means that once the planting rains come sometime from late-March onwards, and you are ready to plant your trees, you can simply load the tubestock, weed mats, plastics and canes and tools onto the ute (see checklist at F.) and then in the one session go to where the guards have been laid out and plant your trees. Done this way one fit person can easily plant 18-24 trees in a day.

E. PLANTING PADDOCK TREES

Tubestock, weed mats, plastics and canes should all be picked up from McDonald's Farm Trees once you are ready to plant. They have been paid for as part of the project. Trees obviously need to be kept well-watered until you are ready to plant them.

Water the tubestock trees well the day you set out to plant them. This is good both for the trees and also makes removing them from the plastic tube very much easier.

Typical steps for planting the trees are as follows:

1. Use a sharp shovel and cut off a 3-400mm square of grass turf from where you are planting the tree. (If you are in good country with heavy grass cover you might have sprayed this with glyphosate previously.) Keep the 3-4 pieces of turf as you will use them later. Then using your sharp shovel dig down as near to a shovel's depth as you can within the square area as per the photo, and at the same time lean back with the shovel lifting the soil slightly. Cutting a small cross in the centre of the square helps to allow the soil to lift. With very little effort this really loosens all of the soil within the shovel cuts, making it much easier for the young tree to establish its roots.

Of course, if you have access to a soil augur then drilling one or more adjacent holes, up to 0.5m deep, is an alternative approach which gives a bigger and deeper hole, which will be better for the tree. Several adjacent augur holes, by creating a large volume of loose soil, can encourage very rapid tree growth over the first few years. Augering deep holes is also particularly useful where there is a clay layer near the surface which impedes root penetration.



2. Next make a hole in the centre of the raised soil with the Hamilton tree planter. (A narrow trowel can also be used to do this if you are only planting a few trees.)



HCLG has three Hamilton tree planters which members can borrow from John Baker.

NB Experience has shown that trees will not grow or establish well if all you do is make a hole into undug ground with the Hamilton tree planter and then plant the tree in that hole without any loosening of the soil around the Hamilton tree planter hole.



3. Assuming you are planting in damp ground water the hole well with a couple of cups of water; remove the tree from the pot; put it in the hole while it still has some water in it; and heel it in. Because of removing the turf earlier you will have created a dish within which the tree is being planted. This helps retain water round the young tree if you wish to water it later.

The benefit of watering before you put the tree in the hole is that it is quick and you are sure the water has got down to where the roots are. Watering after you have heeled the tree in needs more water and you can't always be sure the water is getting down to the roots.





4. Put the weed mat over the tree and push or hammer two canes into the ground through the holes in the weed mat. Put the plastic round the canes and then put in the third cane to hold the plastic open fairly tightly.



5. Now place the pieces of turf upside down on the exposed weed mat outside the plastic guard. They help stop the edges of the weed mat blowing up (especially in exposed areas) and help hold the plastic. If you place them appropriately they also make a wall round the watering dish mentioned at 3. above. The pieces of turf also help retain moisture under the weed mat and round the young tree and discourage heavy grass and weed growth round the young tree.



6. Stand the mesh guard over the tree in its plastic and hammer in the steel posts (post hole drivers can tend to catch on the mesh). Alternatively you can have a spacing template that shows you where to hammer the posts in with the post driver, with you then sliding the mesh inside the posts once they have been put into the ground.

Use tie wire to attach the posts to the steel mesh – one tie wire top and bottom on each post is good. Use 2 steel posts for 1200 high mesh guards for sheep and 3 steel posts for 1650 high guards where cattle may be grazing.



7. Follow-up watering is very labour intensive and not normally done unless you planted late in the season, in which case a number of waterings may be necessary, especially in really hot weather.

In heavy country with thick grass and heavy weed growth it may be necessary in spring to carefully spray with glyphosate around the outside of the plastic guard to reduce grass and weed competition, but this isn't normally necessary in lighter hill country.

The tree below was one of 21 planted in a corridor across one lightish hill slopes paddock on Hillview (former Kondon) in mid-August in the wet winter of 2016, all of which were well-established and growing well in January 2017.



8. The guard should be left in place for at least five or more years as necessary – to protect the young tree until its trunk can bear the rubbing weight of livestock and most of its leaves are, as appropriate, above the sheep or cattle browsing range.

Over a period of 10-20 years you will find that the mesh guards can be recycled repeatedly for new tree plantings and naturally HCLG encourages this. This lowers the cost of plantings and can also be done to fill in the gaps or spread the connectivity further. At Old Graham John & Liz Baker recently used some of their old mesh guards (made out of bin mesh) for a third time.

F. CHECKLIST FOR TOOLS TO TAKE WHEN PLANTING TREES

There is nothing worse than driving for 15 minutes to a distant paddock to plant trees and then remembering that you have forgotten an important tool. The following checklist may therefore be helpful:

1. Mesh guards and steel posts (unless they are already on site)
2. Weed mats, 3 canes per tree plus a few spares, plastic guards. A large plastic bucket or better still one of the new plastic carryalls can be very useful for carrying these and your smaller tools.

3. Tree tubestock that have been well watered - so trees can be easily removed from plastic tubes and to help them establish themselves when planted
4. Long handled shovel – if cutting edge isn't sharp then sharpen it with a file to make cutting turf easier
5. Hamilton tree planter – though a small narrow trowel is ok if you are only planting a few
6. Hammer for canes, in case ground is too hard to push them in (a brickies hammer is good)
7. Watering-can for watering in young trees, with a drum of spare water
8. Sledge hammer to hammer in steel posts (post drivers tend to catch on the mesh). Alternatively mark out where the posts need to be and use a post hole driver to drive the posts in, before sliding the mesh guard inside the posts.)
9. Tie wire and pliers
10. Digging bar – in case the ground is hard or there is a smallish rock in the way of where you want to dig the hole for the tree, or in the hole itself

G. A FINAL THOUGHT ON TREES AND POWERLINES

Remember not to plant your trees either under powerlines or too near to them. The easement for most powerlines is 10m on each side of the powerline, so you need to ensure that when fully grown the tree will not encroach on the easement.

Note drafted in 2017 by John Baker as Coordinator of HCLG's NSW Environment Trust-funded linking paddock trees project (formally titled, 'Habitat Restoration at the Grassy Box Gum – K2W Flyways Interface').

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