



All plant environments are dynamically growing and evolving with all the components competing with each other for the growing niche that suits each organism . . .

Eco-sourcing – Yeah Right!

ECO-SOURCING is a man-made concept about the supposed purity of a given area of plants including trees, that nature constantly strives to overturn/contaminate, and usually over time does so very successfully. It's called 'Succession'.

Many people are jumping on the plant "Eco-sourcing" (ES) bandwagon with what I think is misdirected enthusiasm about maintaining "biodiversity" (BD) within any given site/environment. None of this makes any allowances for the natural agents of seed dispersal, wind, water, birds and animals (including man). We often overlook the fact that many seeds can be spread by one or more of these

agents, so aiding in their dispersal.

To ES seeds/plants is to apply the term to a frozen portion of time relating to the moment the seeds/cuttings are collected. All plant environments are dynamically growing and evolving with all the components competing with each other for the growing niche that suits each organism (plant etc).

The speed of response in any en-

vironment/growing site is controlled by many factors such as availability of water, nutrients and soil type, temperature and light.

When seed is collected from a patch of bush, the collector is selecting the seed that is present on that day. The problem for me is that the collector will usually collect seed from plants/trees where the least effort is needed to collect the required amount of seed. Therefore little or no seed will be collected from those plants/trees that have only a small amount of seed present. This immediately puts a big dent in the BD/seedling variation' potential of that area which is the stated aim of those proponents of the term 'Eco-sourcing'. Seed should be collected from all plants of the target species irrespective of growth habit and seed yield, to remain true to the aims of ES.

How many people, when pricking out ES seedlings, only take the strongest growing ones and then ditch the rest? That does not make any allowance for the genetic variation of that seed batch that in the wild would include fast and slow growing seedlings. So each indi-

"Many people are jumping on the plant eco-sourcing bandwagon with what I think is misdirected enthusiasm about maintaining "biodiversity" within any given site/environment," says retired nurseryman, Ken Davey.

There are many other factors at work. They make eco-sourcing a far from perfect practice and its outcome unpredictable

vidual pricker-outer imposes their individual likes and dislikes on each seed line they handle.

Therefore people must prick out all seedlings in a batch to maintain the genetic variation demanded by and available to the ES purists. In some lines of seed, not all seed germinates at the same speed, so the slow germinating seed is usually discarded and has no opportunity to add its genetic make up to the final planting site.

Dwarf selections

Horticulturally many cultivars currently on the market are dwarf seedling selections from batches of seed collected from the wild or from plants in cultivation. Many of the pittosporum cultivars currently available come under this category.

With cutting material the same applies, as the plant that propagates the easiest from cuttings taken from a group of wild growing plants gets to represent the norm for that species/cv.

In all stands of bush etc, the response to cutting propagation is often as varied as the numbers of plants from which cuttings are taken. So we tend to propagate only from those plants that root easily. This puts a huge dent in the BD of that stand of bush etc.

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Wind-dispersed seed from plants such as metrosideros and hebe will spread considerable distances from the parent plant when strong winds are blowing on the day the seed is released. Just look at pohutakawa seedlings that sprout out of the brickwork of buildings that are quite a way from flowering trees.

Many members of the daisy family also rely on the wind for seed dispersal and can be carried considerable distances. Fern spores can travel hundreds of km. As an example we share a number of fern spp with Tasmania and SE Australia.

Water dispersal affects any seeds whether they float or not. This can range from rain splash to floods.

A good example of water dispersal is sophora. How often have you seen kowhai seed along the high tide line on your local beach, along with gorse, broom and lupin?

The role of birds

Many fruits and their seeds are designed by nature to be processed by passing through the crop and gut of birds. The native pigeon is a good example. If you can find a perch tree, take note of the range of seedlings growing beneath each perch branch.

Any bird that is usually a fruit eater is only after the flesh of the fruit as their crop is not as rough on the actual seeds as are the crops of those birds that are more or less just seed eaters. Coprosma seed is spread far and wide by quite a number of bird species.

Animals including man. Barbed or hooked seed of such plants as acaena and uncinia are reliant on animals and to a lesser extent birds for their dispersal.

The seeds get hooked on to leg and body hair, feathers and clothing and have the potential to be carried many kilometres before falling off or even being noticed. Who has not sat outside a hut after a long days tramp and spent time picking bidibidi seed from their socks, or scraping uncinia seed off hairy legs?

The planting of so-called 'Eco-sourced' plants (usually seedlings) in a given area is only starting the

**Ken Davey --
Nature has
the last laugh**



process of natural selection and regeneration aided by the very things we have no control over – wind, rain, birds and animals including us.

As soon as the plants that you plant out are as large and strong enough to provide perching and nesting sites, birds will bring in seed from the limits of their foraging areas, often measured in square kilometers.

An interesting situation arises when people order ES plants and either run short at the planting site, or forget to order what they have been told they need for the project.

At this point they will contact/visit the contract grower or even other local nurseries and ask for more plants from the original ES. Often the answer is that there are none available. Next the grower is asked if he has any 'near enough or other' lines. If the answer is 'yes' it is then followed by 'How much? - They'll do - I'll take them'.

I'm told that this can happen quite a lot and has been so for quite a while – so much for the purists and their demands on botanical and site (ES) purity!

One final point that really gets me is the amount of weed contamination I have seen growing very well in lines of reveg plants that are being grown as cheaply as possible to remain within contract costings.

They are still claimed to be ES and the weeds are of course ignored, despite the fact that they are not native to the intended planting site or NZ. They are often plant-

ceous; in fact some are vigorous woody weeds. Recently I saw broom, gorse and cotoneaster amongst other weeds in a line of spinifex that was ready to be planted out!

I have not touched on soil and mycorrhizal effects on plant survival, as these factors can have a major effect on the survivability of many nursery-raised plants, where all the plants needs are catered for – and then the shock to the root system when the planting site is nutrient and water deficient, or a dirty great pellet of concentrated fertiliser is placed against the poor roots which then get badly burnt by the reverse osmosis that takes place. The poor grower then gets all the blame for plants that don't grow away rapidly, or die!

I think Nature has the last laugh – right!!!

ed out with ES lines as 'the root ball falls to pieces if the weeds are pulled out at planting time.'

Not all these weeds are herba-

**Ken Davey was for 26 years
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