



*Supporting landholders
with native vegetation*

Dinosaurs in Tathra

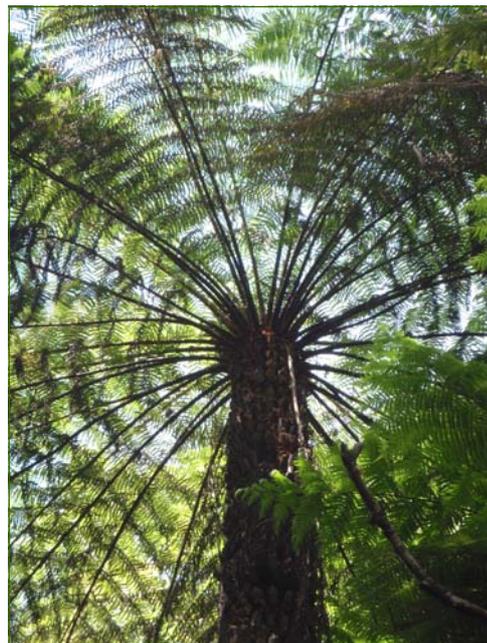
Vegetable dinosaurs are alive and well in the deepest, shadiest gullies of our local rainforests. Why does the Bolwarra, a dinosaur of the plant world, live in this part of the landscape? Local botanist Stuart Cameron explains this and more in a short version of his talk at the Tathra plant identification field day held last December.

Although identifying and naming a plant is an essential first step, the truly fascinating part of the process begins when one explores why a particular plant is here, why it is not over there – when one begins to read the landscape.

To do this accurately you must first determine and take account of your location - geographical, geological and historical.

In the South East corner of Australia certain climate conditions prescribe the limits of distributions: rainfall levels and reliability, the frequency and severity of frosts, the length of the growing season.

A significant number of our species are at their northern or southern limits at or near Tathra. Spotted gums, burrawangs, and rusty figs are at their southern limit; Bootlace bush, climbing lignam (*Muehlenbeckia adpressa*) and the



Rough Tree Fern - *Cyathea australis*, Tathra

Photo: Alison Rodway

daisy bush *Ozothamnus turbinatus* are at their northern limit.

Geology is absolutely fundamental to botany. It determines the availability of moisture and nutrients, as well as the forms and stability of the landscape. Whether it is flat, waterlogged, dry, steep, fire-protected, fire-prone, frequently disturbed or stable and so on.

A significant geological boundary passes through Tathra at Hobbs corner. To the south are volcanic rocks which extend south to Bournda. To the north the substrate is the Ordovician sedimentary rock which outcrops spectacularly in the cliffs at Mogareeka. This boundary has botanical implications. The volcanic

rocks support impressive specimens of the rusty fig (*Ficus rubiginosa*; *Melaleuca armillaris* dominates the volcanic sea cliffs, while eucalypts and casuarinas are



Photo: Alison Rodway

Stuart Cameron leading the Tathra field day

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Propagation Workshop



Ever wanted to propagate your own plants for revegetation projects from local native seed? Learn the tricks of the trade in a hands-on workshop with Karen Walker of the Far South Coast Seedbank.

Sat 5 Mar 2011, 10am-2pm
Riverside Nursery, Bega

Morning tea provided,
BYO lunch.

Please book with the FSCCMN.

Contact the FSCCMN

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Coordinator's column

Welcome to the summer edition of your CMN newsletter. What an amazing growing season we're having. It's a rare summer when people are encouraged to plant trees, but with the ongoing wet conditions, this is exactly what is happening.

I hope you feel as inspired to keep planting as I do after hearing about Liz and Richard's tree plot projects at 'Willow Gem' in Bemboka (see page 5). If you have any questions about your own revegetation or regeneration projects, email or call me and I'll put you in touch with someone who can help.

Those who made it to the plant ID field days we held last spring have asked for more of these days and want them to go on for longer. I'll aim for at least one in late winter or spring this year. In the meantime, you can read about what we got up to on page 7 and enjoy Stuart Cameron's talk on pages 1 and 3.

I'd love to see you again at the

CMN's first event for the year, the Seed Propagation Workshop advertised on this page. For those who attended this workshop back in 2008, I'm interested in hearing about and seeing photos of how your plants grew and the projects you used them for.



Brogo plant id field day

These warm months are perfect for listening to the chorus of frogs coming from our creeks and dams. On page 4 Steve Sass tells us how getting to know which frogs you have can help protect them. There is also the chance to learn more at one of the frog field days in March.

I hope you enjoy the end of our lovely wet summer. Ali

What is the CMN?

The Far South Coast Conservation Management Network (CMN) supports landholders in the Bega Valley Shire to manage native vegetation on their property and caters to all land holders and vegetation types.

The CMN is funded and supported in various ways by the Southern Rivers Catchment Management Authority, Department of Environment and Climate Change and Bega Valley Shire Council.

These agencies are working with landholders to protect native vegetation on private as well as public land.

The CMN's role is to provide motivation, knowledge and skills support to landholders to ensure ongoing management and care is worthwhile for the landholder and the environment.



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prominent on the Ordovician outcrops.

On the highly disturbed beach strand, storms periodically sweep away the entire habitat, and seeds arrive in a lottery distributed by winds, currents and waves. Near the shore salt influence is very strong, exposure to sun and wind extreme, and soil organic content very low. Moving inland all these conditions ameliorate and the vegetation changes accordingly.

Back from the beach a new powerful factor becomes dominant: fire. Australian vegetation can be divided into two broad categories distinguished by their relation to fire - whether plants are adapted to it, have devised ways to survive and even utilise it or, on the other hand, whether its influence is purely destructive.

Those plants on which fire impact is overwhelmingly negative are called rainforest plants, which is rather a misnomer. These are the plants found where the fire influence is absent or attenuated - wet places, deep fire-protected gullies, tracts of land protected by water bodies, marshes or cliffs. Where fire protection is afforded in close proximity to the sea a community blending coastal and rainforest species can form - littoral rainforest.

To understand the nature and composition of rainforest we need to position ourselves in deep, geological time. We are sliding inexorably northwards on a vast chunk of continental crust that is a fragment of the lost supercontinent of Gondwana, which in its heyday made up the greater part of the Earth's land surface.

As Australia has drifted north it has become steadily hotter, drier,

more prone to climatic swings and much more fiery. The oldest, least changed species are in those sites best able to resist these trends. These sites form an archipelago of refugia scattered up the east coast.



Photo: Alison Rodway

*Bolwarra - Eupomatia laurina -
Hobbs Corner, Tathra*

Some rainforests in Australia have remained sufficiently unchanged to support flowering plant species considered to be among the most primitive still surviving - for example Bolwarra (*Eupomatia laurina*), a vegetable dinosaur, is still common in our deepest, shadiest gullies.

Beyond the rainforest refugia the original rainforest genetic stock evolved into species able to deal with the new conditions - the most characteristic Australian plants: the eucalypts, wattles, peas, daisies and grasses. These are encountered on the dry ridges above the rainforest gullies.

We are living in an interglacial, a geologically brief warm spell in midst an ice age. During an ice age ice caps form near the poles; they expand and contract with great rapidity and climatic zones ricochet between the equator and the poles. Huge pressures are placed on vegetation, not least

because sea levels are in constant flux. The coast here is an ephemeral thing, in a century it is likely to be much further inland, 15 thousand years ago it was well off shore. What we see around us is vegetation responding to extreme and rapid climate oscillations.

To read the landscape we need to take account not only of deep geological time but also of human historical time. Aboriginal people have had a major impact on our landscapes by greatly increasing the frequency of fires and thus advantaging the fire-tolerant species. The impact of European settlers on our landscapes has been vastly greater - both the subtraction by clearing and the addition of hundreds of exotic species from all round the world.

Everything we see today is to some extent human-modified. Every plant on the planet is affected by human-induced changes to the atmosphere, especially rising CO2 levels and the associated rise in temperatures.

In order to interpret and take account of human impact we need to look for signs such as cut stumps, fire scars, old fence posts, exotic species. It may well be that what we are seeing is a vegetation community restoring itself after a major human disturbance with a disproportionate representation of gap species and an absence of species which do not readily recolonise.

With all this in mind it becomes possible to begin a reading of the Tathra landscape.

For the full version of Stuart's presentation visit the CMN website www.fscmn.com.au

'Lost Frogs': a threat to the frogs of the South Coast

by Steve Sass, EnviroKey

Why did the stowaway Green Tree Frog cause such a stir in Kalaru this summer? Steve Sass tells all and gives another good reason for getting to know your local frogs.

'Lost Frogs' is the term given to describe frogs that have been moved to a region where they do not naturally occur. In Australia, this translocation of frogs often occurs through the transportation of fresh produce, garden plants, landscape supplies and soils.

Lost frogs can threaten local frog populations. They can compete with local species for food and habitat, with the potential of displacing local species. Translocated frogs can also spread the amphibian disease known as Chytrid (pronounced 'kit-trid') fungus which is potentially fatal and has been attributed to the global decline in amphibian populations (Berger, Speare, & Hyatt, 1999).

In our region, at least two translocated frog species are known. These are the Eastern Dwarf Tree Frog (*Litoria fallax*) and the Green Tree Frog (*Litoria caerulea*).

The Eastern Dwarf Tree Frog has been heard around Tura Beach and Merimbula as well as a number of locations around Batemans Bay. This frog naturally occurs along the east coast of Australia from Sydney in the south to Rockhampton in the north. It is common around

banana and pineapple plantations within its natural range. This, combined with its small size (around 2.5cm) makes it a perfect candidate to become a 'lost frog' when produce is transported to other areas. In Melbourne, the Eastern Dwarf Tree Frog is now commonly found in the vicinity of fresh



Photo: Steve Sass

Green Tree Frog found at Kalaru, *Litoria caerulea*

produce stores and supermarkets, likely the artefact of a person with good intentions releasing the frog into their local bushland, creek or wetland. This species is now breeding in many parts of Melbourne.

In a recent case, a Green Tree Frog (*Litoria caerulea*) was captured by a local resident at Blackfellow's Lake, Kalaru in January 2011. The resident knew that this species was not found locally and contacted me for advice. Our investigations revealed that the frog was most likely to have been a stowaway on a caravan that arrived from Queensland several weeks prior. With an abundance of tourists with caravans visiting the south coast, this scenario is likely to be the most common occurrence of translocation.

To minimise the risks to local frog populations, the NSW Department of Environment, Climate Change and Water has established procedures for dealing with translocated frogs (DECCW, 2011). In our region, either WIRES or NANA wildlife carer groups should be contacted. We can also be contacted at steve@envirokey.com.au for advice as to whether you have a translocated frog.

For the sake of our local frog populations, get to know your local species. If you hear or see any frog that you may not think is a 'local', take action!

For help with frog ID & info: <http://frogs.org.au/frogs/ofNSW/The South Coast>

References

Berger, L, Speare, R, & Hyatt, A.D (1999). Chytrid fungi and amphibian declines: overview, implications and future directions. In A Campbell (Ed.), *Declines and disappearances of Australian frogs* (pp. 23-33). Canberra: Environment Australia.

DECCW (2011). 'Banana Box' Frogs Retrieved 22nd January 2011, from <http://www.environment.nsw.gov.au/animals/BananaBoxFrogs.htm>

Upcoming Frog ID Events

Friday 25 March
at Panboola Wetlands

Saturday 26 March
at Bermagui Wetlands

Contact Justin Gouvernet to register interest in attending:
justin.gouvernet@cma.nsw.gov.au

‘Willow Gem’, Bemboka

by Alison Rodway

Liz Bateman & Richard Hobbs began planting trees on their 500 acre dairy property at Bemboka about 20 years ago. To provide shade for their cattle they planted a number of individual eucalypts in each paddock, adding to the few large remnant eucalypts scattered across the farm.

About five years later they embarked on a much bigger, ongoing planting project, starting with the revegetation of Pollack’s Flat Creek which flows through their property and is part of the Bemboka catchment. Liz and Richard noticed the healthy condition of the creek higher in the catchment which was still well forested. Where it crossed their land it was rocky and barren.

“We both did lots of bushwalking. You notice the diversity in the bush. It’s such a perfect system and you know how it makes you feel. We watched and noticed what was working well in the bush and it made sense to try and make this happen along the creek.”

Liz and Richard were also concerned about water quality. “We were moving the dairy herd across the creek most days and they were making a mess of it. Not only were the banks bare and



rocky, but the water was dirty. We source our water from the creek and there are farms downstream and we didn’t want to keep polluting it. We were able to get some funding for fencing, water troughs and about 200 trees. Once we had the fences in place along the creek we thought we might as well plant more trees so we applied for more funding and kept going”.

Willow Gem now includes multiple, substantial tree plots across the entire farm, with groundcover, understory and canopy species. These provide shade and shelter not only for cattle but for other animals which are returning to the area, like birds and wallabies.

For Richard and Liz, the tree plots are also a way of managing their land well with fairly low maintenance. “Once you’ve planted your tree plots with hardy trees suited to the area, they look after themselves. You have to get used to it not being all neat and tidy, the untrimmed look, but if you can then it isn’t hard to manage. Controlling blackberries and maintaining fences are the main issues.”

They have also left an area of the farm to regenerate back to dry grassy woodland. Management of this area is easier than other parts of the farm, with blackberry control, wattle thinning and the occasional short grazing period for their steers. This area already has an excellent ground cover of native grasses, dominated by kangaroo grass and weeping grass, a shrubby understory and a canopy of redgum, bluebox and applegum. As Richard says, “With labour and time always an issue, you have to be realistic about how much land you can actually farm. Areas that are mostly looking after themselves, those



One of a number of substantial tree plots at Willow Gem

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with good native groundcover and few weeds, can be set aside as a good way to manage the land". These areas increase biodiversity, can provide wind shelter for stock and for pasture in neighbouring paddocks and be used for occasional grazing.

The decision to put environmental works high on the priority list is a difficult one given the financial and time pressures of farming. In spite of this, Richard's view is that "life happens quickly and trees grow slowly. If you wait until you have enough money and time to put trees in on your farm then you won't see the benefits. We've appreciated the work that Jock Waugh (Vegetation Recovery Officer) has put in to get the tree plots on the ground. My advice is to take what help you can get and plant trees now. We've never regretted any of the tree plots we put in."

Part of their motivation for planting trees is that Liz and Richard want to leave the land in a better state than when they began farming. Richard believes it

has been worth putting time and money into planting trees because they are likely to be his greatest legacy. "If you think about what will be left to show when you're gone, it's most likely going to be your tree plots, not your sheds and buildings."



Scuffy with regenerating bulrushes at Pollack's Flat Creek

Apart from the environmental benefits, the trees give Liz and her family great pleasure. Liz's favourite birthday activity each winter is to go for a walk through the tree plots with Richard and their two children, Jack

and Eleanor.

Liz and Richard would have liked to have done even more by now but deregulation of the dairy industry in 2000 meant less financial certainty which affected their ability to plan ahead, and particularly to embark on more tree planting projects. Ideally they would like to have a tree plot in each paddock. This would mean about 15% of the farm would be returned to trees.

Deregulation and the drought finally led to the decision to sell their dairy herd in 2009 and they now farm only beef cattle, which Richard describes as "a lovely but expensive hobby. In the Bega Valley it is extremely difficult to make money from beef farming, so to survive you really need another source of income". Without the time commitment of dairying, Liz has been able to work off the farm. This, combined with the good growing season means they are both feeling ready to launch back into planting trees. "We'd like to be able to put in a small plot each year from now on."

Bumper Harvest for Grass Seed

by Karen Walker, Coordinator, Far South Coast Seedbank



Kangaroo Grass - *Themeda australis*

Photo: dracophylla

December and January are the busiest times of year for a seed collector, and thanks to a drastic change in weather patterns, it has indeed been a bumper harvest.

Many people have been reporting that native grasses are appearing, flowering and seeding in healthy proportions this year. How do you go about harvesting, storing and using this bounty?

1. Correctly identify what grass species it is first (no point collecting a noxious weed).

2. Either cut off whole grass plumes/heads or run your hands along the heads to collect mature seed which is just about ready to drop. Move from one grass clump to another and range over a wide area (ideally): don't just completely strip one plant only.
3. Place seed or heads into a bucket, plastic bag or paper bag; avoid material bags as a lot of grass seed is designed to drill into or stick to natural

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fibres (think of your socks after a paddock walk!).

4. Allow seed to fully dry (best in a paper bag which breathes and releases moisture) and drop (which may involve shaking seed heads) in a dry, warm area out of strong winds and direct sunlight.
5. Try and remove waste bulky material from the seed, then place seed in a jar or sealable plastic bag and label and store in a cool, low humidity area (wine cellar, linen cupboard, cool room). Fridges are OK, but designed to be high humidity so seed can sweat or go mouldy.
6. Be aware that many native grass species (see point 1) have 6-12 month dormancy periods, so very often the seed you collect now will germinate best next year, hence the need to dry and store correctly.
7. Seed can be either sown in tubes or trays, or direct broadcast over a wider area into the ground.

Large vacuum harvesters and other inventions are used to collect whole paddocks of grass seed, or they can be mowed and baled with conventional hay-baling equipment and then spread on the soil as a mulch/germination layer.

Maximum dryness and quick processing to storage times are the aim of the game. The Seedbank coolroom is a dedicated 3 x 3 m low temperature/low humidity unit where all seed collected is stored for maximum shelf life.

You are always welcome to contact me with questions about harvesting and storing any native seed at karen.walker@cma.nsw.gov.au.

Plant Identification Field Days



Local botanists led three inspiring vegetation identification field days for the CMN last spring. These explored three very different landscapes across the Shire, in Towamba, Brogo and Tathra and brought together folks who share a passion for native plants and land management.

Towamba was the perfect place for our Dry Grassy Woodlands day with Paul McPherson. The Towamba hills which circle the valley were wreathed in white clouds. Flowers such as Milkmaids, Tiger Orchids, Curved Rice Flowers, Creeping Bossiaea and Pale Sundew were abundant between the Kangaroo grass tussocks. The drenching thunderstorm at the end of our field day gave us a chance to get wet in Paul Zallicos' excellent patch of 'Bega Wet Shrub Forest'.

Our Brogo adventure unfolded at the Bush Heritage reserve, a 120 hectare property purchased for conservation in 1995 by Bush Heritage Australia. The

reserve includes Brogo Wet Vine Forest, Bega Wet Shrub Forest, Dry Rainforest and Warm Temperate Rainforest. Jackie Miles demonstrated how to identify different eucalypts and where they occur in the landscape before guiding us to a shady gully of Yellow-woods (*Achrocnichia oblongifolia*) and beneath Port Jackson figs festooned with vines. A feature of the reserve is the large granite outcrops which provide protection for rainforest species sensitive to frost, fire and browsing animals.

Stuart Cameron's botanical tour of Tathra could have gone on for a whole day, with so many different vegetation communities to explore in this coastal area. Stuart's introductory talk was a highlight and is printed on page one for your delight.

What a great way to spend a Saturday. As you've requested, I'll try and organise more of these days later this year.