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(CNFN)

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Eryngium vesiculosum - the apdy named prickfoot - found in marsupial lawns

IN THIS ISSUE:

WALKS PROGRAM (see insert for details)

Oct 17 - 19th .....Federation (Weymouth)
Nov 1&2 .. (with Peter McQuillan) Birralee
December 7th..... AGM Weegena
January 4th.....Iris Farm
February 1st.....Liawenee

SOME NOTES ON THE VEGETATION OF THE WEST COAST SOUTH OF MACQUARIE HARBOUR

by Nick Fitzgerald

Last summer I was fortunate to spend two weeks on the remote south-west coast north of the Spero River. This region is rarely visited on account of the isolation and difficulty of access, although traces of the modern world are apparent in the illegal ATV (All Terrain Vehicle) tracks in the northern part and the countless rubbish washed ashore from boats.

The trip was something of a working holiday, with the purpose of removing weeds from this remote wilderness coastline. An Envirofund grant and support from the local Parks and Wildlife Service provided the boat, float plane and helicopter transport for several groups of volunteer beach-weeders, each tackling a different section of the southwest coast.

Sandy beaches, extensive dunes and brackish lagoons are interspersed with sea cliffs, rugged headlands and cobble beaches. The coastal vegetation, including wetlands, contains a large diversity of edible plants which are often abundant, for example glasswort *Sarcocornia quinqueflora*, water ribbons *Triglochin procerum* and native pigface *Carpobrotus rossii*.

The major sand-binding species on the primary dunes are native pigface and pale biddy-biddy *Acaena pallida*, with

occasional patches of beach spinifex *Spinifex sericeus*. Fortunately the invasive exotic marram grass *Ammophila arenaria* is present in very few locations, and these are being targeted by the remote area weeders.

Many beaches have a steep profile composed of cobbles with herbs such as saltbush *Atriplex* sp. and scrub nettle *Urtica incisa* living between the rounded stones. The flat cobbled area behind these beaches typically has an extensive cover of climbing lignum *Muehlenbeckia adpressa* or bracken *Pteridium esculentum*. Eventually an organic soil will develop on this stony substrate provided rising sea levels do not encroach.

Exposed rocky headlands support hardy lithophytes including saltspray plantain *Plantago triantha*, and shore spleenwort *Asplenium obtusatum* subsp. *northlandicum*. Limestone is common on the coast, resulting in rugged headlands and gulches occupied by hardy coastal grasses and extensive patches of glasswort. Weathering has a peculiar effect on the limestone – rather than smoothing the rock it creates razor-like blades and sharp points which threaten to eat the toughest of footwear.

Groundwater seeping from the calcareous rock sometimes forms limestone deposits behind beaches. These tufa herbfields host an array of short herbs, sedges and the like. A characteristic species is spiny everlasting *Nablonium* (= *Ammobium*) *calyceroides*, a small rosette daisy endemic to the west coast and Bass Strait islands.

Herbfields are common elsewhere but are replaced by bracken or grasses on less organic, very sandy soils. Closely-grazed 'marsupial lawns' often occupy old dunes, along with shrubs neatly pruned by wind and wallaby giving an illusory landscaped garden effect. The tiny creeping orange mat-currant *Coprosma perpusilla* is commonly found in these coastal herbfields although it is usually an alpine plant in Tasmania and New Zealand, and also occurs on Macquarie Island.

Low forest of west coast peppermint *Eucalyptus nitida* is patchy and best developed in sheltered basins and gullies.

Meadows of glasswort *Sarcocornia quinqueflora* subject to inundation by the sea.

Tiny insectivorous sundew *Drosera pygmaea*

Apart from very isolated stands of swamp gum *Eucalyptus ovata*, other eucalypt species appear to be absent from the lowlands between Port Davey and Macquarie Harbour. The dampest and most sheltered coastal forest patches support a scrubby rainforest of celery-top pine *Phyllocladus asplenifolius*, manuka *Leptospermum scoparium*, dogwood *Pomaderris apetala*, fishbone waterfern *Blechnum nudum* and, sometimes, native laurel *Anopterus glandulosus*.

Like many coastal areas, scrub is the dominant vegetation type and varies from tall tea-tree scrub with open sedgey understorey to almost-impenetrable low thickets of coastal shrubs such as white correa *Correa alba*.

Two very common shrubs, the closely related seaspray pinkberry *Leptecophylla abietina* and common pinkberry *L. juniperina*, grow in close proximity to each other but rarely occur together. This apparent example of 'niche partitioning' likely reflects differences in competitive ability. Considering that *L. abietina* appears to be the most salt-tolerant woody plant on the coast it seems able to survive where other shrubs cannot, but at the expense of competitive ability in less harsh environments. *Leptecophylla abietina* forms low dense bushes in the spray zone, while its larger cousin grows slightly further inland and can reach remarkable heights on the southwest coast compared to elsewhere – around 12 metres in sheltered sites.

More information about the Sea Spurge eradication project: go to www.wildcareras.org.au and look for 'Wildcare SPRATS' under 'Groups'.

Rounded shrubs of seaspray pinkberry *Leptecophylla abietina* amongst coastal grasses on rocky coast.

PHOTOGRAPHS BY NICK FITZGERALD

Damp coastal scrub with soft waterfern *Blechnum wadum* at Birthday Bay

Nablanium calycoroides in coastal herbfield

Triglochin procerum in outlet of Hibbs Lagoon

Damage to marsupial lawn by illegal offroad vehicles south of Discovery Bay

GROW MORE GORSE?

by Sarah Lloyd

[Editor's note: Articles published in The Natural News do not necessarily reflect the views of our members. I seldom get feedback about the newsletter but *Plant More Pines!* by Bob Mesibov (The Natural News Autumn 2008) elicited a flurry of comments. This is my response.]

In 1995 the Royal Australasian Ornithologists Union (now Birds Australia) initiated the Birds on Farms project. The project aimed to determine the success of revegetation programs in bringing birds back into rural areas, to assess the value of remnant bush on farms and to identify species likely to be adversely affected by farming practices.

From 1995 - 1998 I surveyed three farms in the Meander Valley area. One was a sheep and cattle grazing property near Carrick where I established two survey sites:

Site one was within a 32 hectare remnant. The dominant eucalypt was black peppermint *Eucalyptus amygdalina* with a mid-layer of silver wattle *Acacia dealbata* prickly box *Bursaria spinosa* and native cherry *Exocarpos cupressiformis*. Although gorse *Ulex europaeus* was the main component of the understorey, there was also a variety of native shrubs, herbs and grasses.

During the course of the two year project I recorded sedentary insectivorous birds such as Golden Whistlers, Grey Shrike-thrushes, Scarlet Robins, Yellow-rumped Thornbills, Grey Fantails and Spotted Pardalotes and migratory species including Fan-tailed Cuckoos, Striated Pardalotes, Black-faced Cuckoo-shrikes and Dusky Woodswallows. Numerous Superb Fairy-wrens and Brown Thornbills were observed using the gorse for nesting and/or shelter and on one occasion a Silvereye was seen foraging on the gorse flowers.

Site two encompassed scattered eucalypts in a heavily grazed paddock. The trees showed signs of deteriorating health and the area was dominated by larger birds often associated with degraded farmland including Noisy Miners, Australian Magpies, Eastern Rosellas and Common Starlings.

In 2006 I was asked to write a case study for the gorse best practice manual so I revisited both sites in January of that year.

The spread of gorse made it impossible to access my study area at site 1. However, after several hours of observing and listening from the edge of the bush remnant it was clear that all the species that I had recorded during the Birds on Farms project were present.

A grant from Greening Australia had enabled the landowner to fence Site 2 since the initial surveys. However there had been virtually no regeneration of the understorey and Noisy Miners still dominated the site. Australian Magpies, Eastern Rosellas and Grey Butcherbirds were also present.

Between the two study sites there is an extensive area of unfenced bush with a thick gorse understorey. This provides suitable habitat for the same range of insectivorous birds as seen at site one. Noisy Miners, which shun areas with dense understorey, do not occur here.

Noisy Miners *Manorina melanocephala* are native honeyeaters that live colonially in family groups. They prefer open country with scattered eucalypts or areas of bush with little or no understorey and they have been favoured by management regimes that involve the clearing and fragmentation of the bush and/or burning and grazing that eliminates the understorey. They

Noisy Miner

aggressively exclude other birds from their territory. The birds that can tolerate their aggressive advances and are predictably found in their company include larger species: Grey Butcherbirds, Australian Magpies, Eastern Rosellas, Laughing Kookaburras and Forest Ravens.

Noisy Miners are unlike most other bush birds in that they are generalist rather than specialist feeders. They forage on the ground, trunks, branches and in the canopy. In contrast, the birds they exclude are usually smaller species such as fairy-wrens, thornbills, pardalotes and insectivorous honeyeaters that have more specialised feeding niches; they consume numerous invertebrates that if left unchecked can cause the defoliation and declining health of trees. Not only do Noisy Miners colonise degraded farmland but they cause further deterioration in the health of trees by excluding these insectivorous birds.

Despite a serious infestation of gorse Site 1 has a diversity of bird species with ground, mid layer and canopy foragers present. Gorse provides protective covering from predators and foraging opportunities for smaller birds such as Brown Thornbills, Superb Fairy-wrens and Silvereyes. How long this remains the case is difficult to determine. The area still has some native understorey of prickly box, native cherry, native heath *Epacris impressa*, herbs and grasses. However, without an attempt to stop its spread gorse may eventually outgrow and smother these plants and the bird fauna may suffer as a result.

By contrast Site two has no significant understorey. It provides little suitable habitat for birds other than the larger aggressive species. Like so many areas in eastern Australia, fragmented bush without understorey soon becomes dominated by Noisy Miners and several associated species and there is a concomitant deterioration in the health of eucalypts. There is no doubt that gorse displaces native plant species; however, at the bush near Carrick it is not yet so rampant that it has had a detrimental effect on the bird fauna. Furthermore, it seems that the presence of *any* understorey, whether native or gorse, renders an area unattractive to Noisy Miners. In ecologically degraded areas dominated by Noisy Miners, clearing gorse by mechanical means rather than poisoning and leaving *in situ* may exacerbate the Noisy Miner problem.

It seems typical of Landcare-type activities in Tasmania to base any remedial revegetation work on either the presence of a dominant eucalypt species or threatened plants. Rarely, if ever, is a comprehensive fauna survey conducted before carrying out weed control or removal. Hence, at the property near Carrick, a degraded area that

supports very few bird species was deemed worthy of financial expenditure while gorse-infested remnant bush with a diverse bird fauna has been allowed to deteriorate further. Long Point on the east coast, purchased by the Tasmanian Land Conservancy, a group one would hope would have a more enlightened approach, has conducted similar gorse eradication work without a comprehensive fauna survey. I conducted a bird survey at Long Point and found that in the absence of native understorey gorse is providing valuable habitat for birds.

So far it may seem that I'm agreeing with Bob Mesibov's provocative article *Plant more Pines!* (The Natural News, Winter 2008) by stating that gorse, like pines *Pinus radiata*, has some ecological value. In some situations it does have some value but I'm certainly not advocating growing more of it. Gorse, like pines (and shining gum *Eucalyptus nitens*), is a vigorous weed that should be eliminated, albeit slowly and carefully, from the landscape.

I have not conducted bird surveys in pine plantations, but as Mesibov does not name any species other than the litter invertebrates, I doubt his assertion that 'they (pine plantations) provide good-quality forest habitat for many birds, mammals and insects in an otherwise open landscape.' Quite the contrary. In the summary by Lindenmayer and Hobbs (2007) cited by Mesibov it is stated that:

Particular sorts of vertebrates such as hollow-using birds and arboreal marsupials as well as nectivorous, frugivorous, foliage-gleaning and canopy-feeding birds were found to be absent or greatly reduced in abundance from radiata pine plantations.

Furthermore the research cited in Lindenmayer and Hobbs's report was conducted in Victoria and New South Wales. Tasmania's avifauna is depauperate compared to those of mainland states. (Tasmania has about 40% of the species of equivalent areas in Victoria.) Of the 6 bird species that were found in pine plantations, only three (Golden Whistler, Grey Fantail and Scarlet Robin) occur in Tasmania.

Any monoculture (whether of pines or eucalypts) is a simplified ecosystem without the structural complexity that supports a range of species. As stated in Mesibov's article, one of the reasons that pines do support a diversity of litter invertebrates is because 'predators such as lyrebirds' (and in Tasmania Tasmanian Scrubwrens & Bassian Thrush) avoid such areas.

The occurrence of birds (and other fauna) in an area is closely correlated with the structural complexity (i.e. layers) of vegetation. Dense understorey and rotting logs and litter are essential for many forest birds for feeding, nesting, shelter and roosting sites. Mid-storey shrubs, small trees and canopy foliage also provide nesting sites and foraging opportunities for different bird guilds.

Scarlet Robin

Golden Whistler

Endemic species including Yellow-throated and Strong-billed Honeyeaters are closely associated with eucalypts where they forage on the shedding bark on trunks and branches; Black-headed Honeyeaters forage on eucalypt foliage. Pardalotes, one of the most specialised feeders in eucalypt forests, forage on psyllid insects and an associated exudate called lerp that are found on the leaves of eucalypts.

Despite the growing awareness of the vital ecological functions of fungi (e.g. their mycorrhizal associations with approximately 95% of plant species and their role as decomposers and nutrient recyclers) they have been a long neglected component of Australian ecosystems.

My surveys of the fungi growing in the eucalypt forest at Black Sugarloaf have so far documented over 200 species - and that includes only the named macro fungi. Pine plantations in Australia do not support such fungal diversity. They do have some highly desirable edible (European) varieties such as saffron milk cap *Lactarius deliciosus* and slippery jack *Suillus luteus* but the other species that live in association with pines are weedy and unwelcome. For example poison pie *Hebeloma crustuliforme* is an introduced poisonous species; fly agaric *Amanita muscaria* is a mycorrhizal species introduced into Australia because pine plantations failed to flourish without their fungal partners. This vigorous fungal weed is now known to be invading the southern beech *Nothofagus* forests of Tasmania, Victoria and New Zealand. As with any invasive species (pines, gorse or shining gums) it is disrupting ecological processes. *A. muscaria* is displacing native fungi. (Lebel 2006)

Fly agaric *Amanita muscaria* in the Tarkine rainforest

The landscape of Tasmania is changing at an accelerating and alarming rate. Native bush is being converted to monocultures of shining gum and farmland is being subjected to management regimes that are having a detrimental impact on native flora and fauna. In some areas the intensification of agriculture sees the loss of small remnant patches of native vegetation or single paddock trees that are cleared to accommodate pivot irrigators and all that they entail (chemical fertilizers and pesticides). Where land is deemed unsuitable for agriculture, bush remnants and paddock trees are removed and covered with plantations of pines and eucalypts.

For those of us passionate about the maintenance and regeneration of vegetation communities and the conservation of biodiversity for its own sake, this exploitation of the land is a tragedy. If the money invested in plantation establishment was instead expended on meaningful conservation activities such as the rehabilitation of 'scrappy bush remnants', as Mesibov calls them, the outcome for our native ecosystems might look more hopeful. These 'scrappy bush remnants' are becoming increasingly important as refuges for a range of native species and to advocate the planting of 'a gift' of 'a new pine plantation next door' risks their further deterioration. Wildlings (i.e. pine seedlings) from plantations are known in some cases to eventually overwhelm eucalypts and shade out much of the understorey.

Pinus radiata and *Ulex europaeus* are vigorous species that invade native forests, thus contributing to the degradation of native ecosystems.

I would never advocate planting more gorse or not controlling the spread of this persistent weed. My paper '*Gorse as habitat for birds: a case study from Tasmania*' was not included in the gorse best practice manual. I can only conclude that the committee deliberating the contents of the manual was not prepared to accept that gorse can have any value. It can – but that does not mean we should not make a concerted effort to get rid of it and all other invasive weeds, especially monoculture plantations of pines and shining gums.

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MORE ON WEEDS

Cobbler's pegs *Bidens pilosa*

by Sarah Lloyd

During a recent trip to Queensland's sandstone belt, Ron and I spent some time at Lonesome National Park at the southern end of the Arcadia Valley, east of Carnarvon Gorge. The area was formerly a cattle property and despite being declared a National Park in 1972 to preserve its scientific and aesthetic values, cattle are still agisted there; Noisy Miners dominate.

Most of the park is inaccessible so I explored the camping area.

When in a completely foreign environment it is difficult to know just which species are native and which are introduced and weedy.

Cobbler's pegs *Bidens pilosa*, I later found out, is an introduced species that is spreading like wildfire in New South Wales and Queensland.

It's no wonder it's spreading fast. Like other members of the Asteraceae family,

Cobbler's pegs *Bidens pilosa*

(thistles, ragwort etc) it seeds prolifically. Just brushing against the plant results in a covering of seeds.

Maybe if I'd known its weedy status I would have ignored it or regarded it with prejudice. But there was something photogenic about the plant and on close inspection of its seed heads, called

Cobbler's pegs with mantis fly

spider awaits prey

'pitchforks' for obvious reasons, I found an assortment of dead insects including a mantis fly, several moths and a headless grasshopper. At least four different species of spider, very much alive, were lying in wait for this quarry.

In a relatively short period of time a mini-ecosystem has evolved around this introduced species.

Cobbler's pegs with moth

VOLUNTEERS REQUIRED FOR PLATYPUS SURVEY

BY Josh Griffiths DPIW

The platypus is one of the most unique and widely recognised animals in the world. Despite being widespread in Tasmania it is subject to a number of potential threats including degradation of freshwater systems due to adverse land-use practices and altered flow regimes, illegal netting, pollutants, and the fungal disease, mucormycosis.

There is currently no wide-spread monitoring of platypus populations in Tasmania. Monitoring is needed to determine the impact of these threats and to provide baseline data for assessing any future impacts. The Platypus Partnership Program at DPIW is exploring methods and options for establishing a rigorous state-wide platypus monitoring program using observations by community groups and the general public.

To determine the feasibility of such a survey we need to conduct a pilot study to test our methods and we are looking for volunteers to assist with observations. Briefly, the pilot study would involve establishing a number of surveillance points at water bodies around the state where platypus are known to occur. Volunteers at each point will sit quietly observing the river, lake, or stream for an hour prior to sunset in order to record the presence or absence of platypus. Observations at the same location need to be repeated on five nights, spread over a two week period. The survey is likely to be conducted in October when weather and day length are suitable. The exact locations and extent of the survey will be dependent on the number of volunteers available.

If you would like to be involved or would like further information, please register your interest. Contact details:

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Thynnid wasp on boobyalla *Acacia sophorae*

Crustose lichen

Casemoth *Clania* sp. on *Melaleuca*

White-fronted Chats with food for nestlings

l-r: CNFN members Rod McQueen, Peter Sims, David Leicester & Ron Nagorcka

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