



**Featuring
Tasmania**

Australian Plants

**March 2012
Vol 26 No 210**



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Front / back covers: Pencil Pines, *Athrotaxis cupressoides*, at Artist's Pool, Cradle Mountain, Photo: Dick Burns

This issue features Tasmania and was compiled by Dick Burns, on behalf of the Australian Plants Society Tasmania Inc. It also includes a tribute to Gwen Elliott and Ken Warnes, recipients of the 2011 Australian Plants awards at the ANPSA Biennial Conference in Adelaide.

Australian Plants articles

Australian Plants is published quarterly to promote knowledge of Australian plants.

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Australian Plants No. 210 Issue of Volume 26, which comprises issues 206–213.
Published quarterly and available nationally in 3000 copies by the Australian Plants Society NSW Ltd

© Australian Plants Society NSW Ltd 2011 ACN 002680408 ISSN 0005-0008
Printed by Elect Printing, Fyshwick, ACT Print post approved PP2262530037

Introduction



Dick Burns, Australian Plants Society Tasmania Inc

Welcome to Tasmania – or at least a partial view of it. The Australian Plants Society Tasmania (APST) hopes that readers of the articles in this issue of *Australian Plants* will come to understand why Tasmanians choose to live here.

The Tasmanian flora has fascinated Europeans since the first collections were made here in the eighteenth century. That fascination continues.

This issue aims to give readers some idea of why Tasmanian plants are viewed as special in the plant world, including articles that support two of APST's objects, which are:

- To encourage the cultivation and study of Australian plants; and
- To promote the knowledge, appreciation and preservation of Australian plants, both in their natural settings and in cultivation, with special emphasis on species indigenous to Tasmania.

Botanical research and taxonomy are an essential component of caring for the flora and included is an update on the status of one group of plants, the Tasmanian Epacrids. Other articles discuss means of maintaining local vegetation around the home and the successes in restoring damaged communities.

There is ever the need to raise public awareness of our indigenous plants and the Hobart Group of APST tell how they converted Hobart City Hall into a wildflower wonderland. While the main focus of their 'Garden Spectacular' was on Tasmania, they blended local flora with other Australian flora.

In addition, there is an article on a garden many readers will have visited, providing an update on the changes that are part of the growth of any garden and telling of another kind of blending of Australian plants.

Whilst these activities are occurring throughout Australia, keep in mind that several years ago, at the formal dinner of a biennial Australian Native Plants Society (Australia) (ANPSA) conference, I was presented with an eye-patch, because I was so one-eyed about things Tasmanian. Well nothing has changed, so please enjoy reading about a special part of Australia.



The Tasmanian vegetation – gardens separated by time and change

Dick Burns

Dick is a Life Member of Australian Plants Society Tasmania and a recipient of the ANPSA Australian Plants Award (amateur category). Dick moved from Sydney in 1970 to live in Tasmania. On arrival, he immediately started bushwalking and experienced the many pleasures offered by the Tasmanian bush.

The article introduces several types of Tasmanian vegetation including alpine vegetation, rainforest, open forests, west/south west habitats, coastal habitats and other communities.



Tent Tarn near Cathedral Mountain
All photos by Dick Burns

Alpine Vegetation

Tent Tarn is one of the thousands of bodies of water that are found on alpine plateaus through the Cradle Mountain-Lake St Clair National Park. Each tarn has a distinct beauty but all share the effect of the high altitude, glacial scouring of the dolerite rock and a distinctive combination of plants. Coming close to the tarn, the water is so clear and colourless that depth is impossible to judge. (The tan coloured water comes at lower altitudes.) You can only be in Tasmania.

Because the island juts into the Southern Ocean, the prevailing westerly winds bring a maritime climate. Tasmania was the last hinge of contact between Australia and Antarctica as the two landmasses swung and tore apart. A broken landscape of clustered mountains has resulted, made more spectacular by sheer cliffs of columnar dolerite or white inert quartzite. (I was once asked by a non-venturesome 'townie' after a trip to our highest mountain, Mt Ossa, "Can you see much from the top – or do other mountains get in the way?")

The flora of alpine Tasmania is dominated by flowering or coniferous shrubs, unlike the mainland high country with its characteristic daisy-filled herbfields. Another notable difference is the lack of the distinct tree-line. The flora has many affinities with mainland communities and other Gondwanan lands; but still around half of the alpine taxa are endemic to Tasmania.

The largest areas with alpine communities occur on the Ben Lomond plateau and the Central Plateau, predominately developed on dolerite-derived and relatively rich soils; smaller pockets on dolerite are scattered across the island, as with Tent Tarn in the Cradle Mountain-Lake St Clair National Park. Occasionally alpine communities develop on poor quartz-rich soils, from Mt Wellington and Pindars Peak in the south to Mt Arthur in the north and Mt Murchison and Black Bluff in the north west. The best time to visit for floral displays is summer.

For the autumn colour of *Nothofagus gunnii* (Deciduous Beech or Fagus), visit in late April and to see those great examples of convergent evolution, cushion plants, come any time.



Nothofagus gunnii

Rainforest

Another distinctively Tasmanian environment is the cool temperate rainforest: its dark trees, rocks and ground coated with lush green ferns and mosses feature in every Tasmania pictorial book and calendar. Rainforest is found from sea level to around 1200 m altitude and is generally dominated by the one tree species, *Nothofagus cunninghamii* (Myrtle Beech). Tasmanian rainforest has Gondwanan affinities with the rainforests of the south east mainland, of New Zealand and of the Andean region of south Chile and Argentina. Several factors such as rainfall, altitude and age influence both the structure of the forest and what other species occur: these are outlined in the article 'Rainforest in Tasmania', in *Australian Plants* vol. 22, no. 181 (Dec 2004) pp. 359-366.

Many tourist hubs have well-graded walking tracks through Tasmanian rainforest, for example at Cradle Mountain village. The Dove Lake Circuit enters rainforest at times, with spectacularly large old trees of *Athrotaxis selaginoides* (King Billy Pine) (perhaps 1000 years old). This species is at its northern limit in the rainforest along the Tramway Track under Black Bluff. The walk into Philosopher Falls in the northern Tarkine features good growth of the bane of bushwalkers, *Anodopetalum biglandulosum* (Horizontal). Allow a day for the Bird River/Kelly Basin walk out of Queenstown. Many roads such as the Lyell Highway (A10) and the Gordon Rd (B61) pass through extensive



Mature cool temperate rainforest with *Nothofagus cunninghamii* dominant near Cradle Mountain

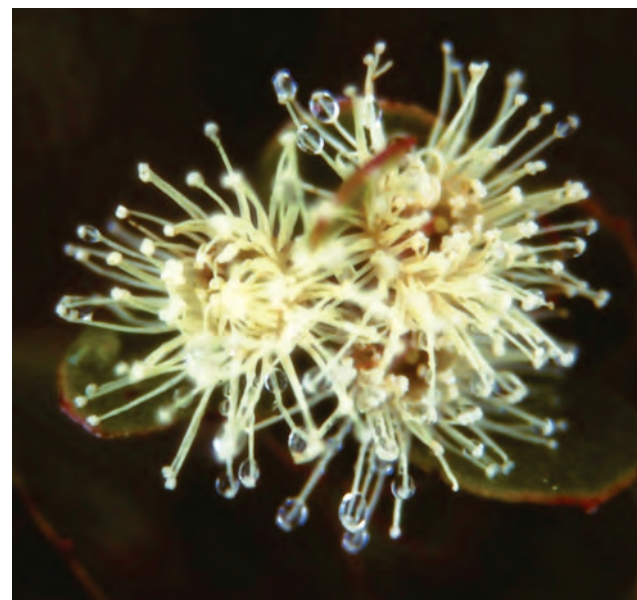
mature rainforest. South of Hobart, Hastings Caves and Duckhole Lake are set in rainforest.

Open Forests

Tasmanian open forests are mostly dominated by eucalypts of which Tasmania has 30 species currently named, from the giants such as *Eucalyptus regnans*, to the diminutive *Eucalyptus vernicosa*. The tallest living flowering plants world-wide are contained within Tasmania's wet eucalypt forests, the highest known being 'Criterion', a 99.6 m *E. regnans* from the Tahune forests in the south of the State. Wet eucalypt forests have a dense understorey dominated, either singly or in a mixture, by rainforest trees, broad-leaf shrubs or ferns. These forests best develop on fertile soils where rainfall is 1000-1500 mm annually. Because tall straight growth is encouraged, wet eucalypt forests are of economic benefit and have been the sites of confrontation.

The timber Tasmanian Oak is sourced from three species, *Eucalyptus obliqua*, *Eucalyptus delegatensis* subsp. *tasmaniensis* and *Eucalyptus regnans*. It is a hard-wearing wood with excellent colour, ranging from honey to chocolate brown. In all, 15 of the 30 species of eucalypt grow in wet forests.

Many of these eucalypts, along with 14 of the other species, also form dry sclerophyll forests or woodlands as on the mainland, but always with



Flowers of *Eucalyptus vernicosa*



a distinctive Tasmanian character. Some species will, under suitable conditions, develop a mallee habit. The distribution of species is affected by not just altitude and rainfall, but also fertility of soils. The most recently described eucalypt, *Eucalyptus nebulosa*, occurs in the west of Tasmania along an outcrop of serpentinite, a highly metamorphosed, high-nutrient rock. It is a small tree with smooth bark. Adult leaves have an overall bluish-grey hue; the smoky/hazy colour from the mass of foliage in populations led to the specific name (*nebulosus* in Latin means misty or cloudy).

The standard concept of eucalypts is that of the dominant plant in a community. This is mostly not the case for the smallest eucalypt, *Eucalyptus vernicosa* (Varnished Gum). On exposed ridges in the west and southwest, it grows as a low dense shrub 10-20 cm high under other species. Occasionally Varnished Gum grows taller; a form, found near Cradle Mountain, was 1-2 m high. As well, the thick glossy leaves vary in size and shape. These characters seem to be genetic: seed-grown garden plants take the size and leaf shape of the wild parent. However, plants grown in the author's Penguin garden have eventually succumbed to stem-boring pests. Two specimens in the Tasmanian Arboretum, over twenty years old, are not as affected.



Near Mount Anne. The low shrubs are *Eucalyptus vernicosa* and the trees are *Leptospermum rupestre*.



South west button grass plains below Ironbound Range.

West/South West Habitats

The arc of Tasmania that runs south from Macquarie Harbour and Queenstown then east towards Hobart and includes the Wild Rivers and Southwest National Parks has escaped exploitative or developmental changes. It is distinctive due to high rainfall, the great geological age of the region and the presence of large stretches of weather-resistant quartzite folded and sheared by earth movements. The silica-rich quartzite lacks nutrients; what nutrients come from other rock types in the South West are quickly leached away.

In the process of decomposition, oxygen is used up and carbon dioxide produced, giving rise to acidic, oxygen-depleted groundwater. This acidic water and Tasmania's cool climate hinder the rate of decomposition, leading to the formation of peat with its soluble brown tannins.

Between the lines of mountains, the valleys are filled with wide flat plains of alluvium. Groundwater waterlogs the gravels favouring the growth of sedges, especially *Gymnoschoenus sphaerocephalus* (Button Grass). An estimate is that around 30% of the South West is button grass plain. Where water courses have cut down into the alluvium, the consequent drainage allows for trees and shrubs to grow along the now-brown tannin-rich creek or river. These plains that make such a marked contribution to the look of Tasmania can be seen along approach roads to Cradle Mountain, along the Lyell Highway and Gordon Road.

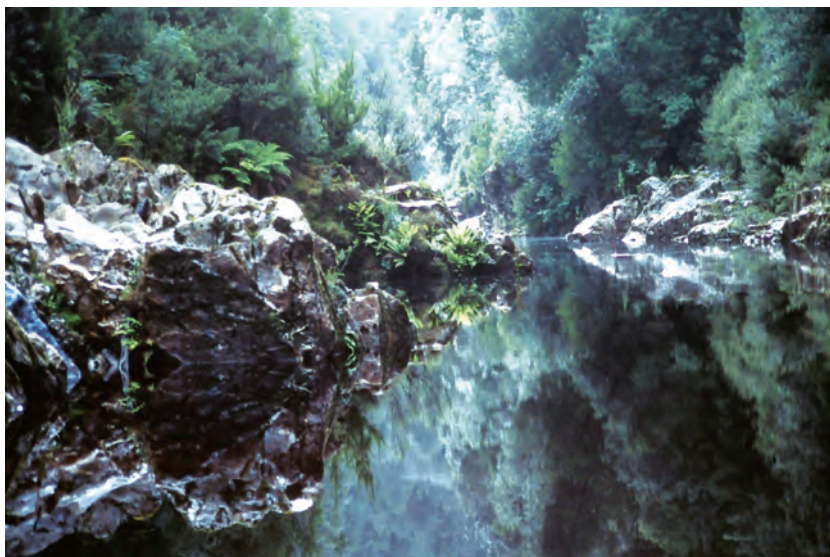


For millennia Aboriginal people travelled through the South West, burning the vegetation to keep their routes open and to encourage new growth to attract herbivores that they could hunt.

European explorers and prospectors also used fire, making it easier to spot likely ore sources. This wide-scale burning encouraged eucalypt forests rather than rainforest. Away from the traditional paths, rainforest did prevail and in the riverine forests, *Lagarostrobos franklinii* (Huon Pine) flourishes.

Coastal Habitats

Tasmania's chaotic geological history has produced a great array of rock types. Nowhere is this diversity more visible than around the island's coastlines. Columns of dolerite rise up to 300 m from the ocean on Tasman Peninsula. An article on its vegetation appeared in *Australian Plants*, vol. 22 (March 2004), p. 211. A different flora has evolved in the dryness and granite and dolerite of Freycinet peninsula and the nearby Schouten Island. The metamorphosed mudstones along the West Coast, with their dark irregularity, have been eroded and shaped by the constant pounding of the Southern Ocean. Around South West Cape and to its east, headlands shelter white beaches flanked by dense forest. Plants in this scenic diversity all have to cope with extreme conditions, including salinity, low-nutrient soils, sun exposure and drying winds.



King River, where the main features of western Tasmania come together – deep valleys, white quartzite, tannin-rich water and rainforest.



Dolerite cliffs along the Cape Pillar Track, Tasman Peninsula. Tasman Island is to the right.



Although only 2% of Tasmania's vegetation is coastal, 60% of the State's vascular plant species are found here – 49% in the coastal heathlands and 21% in salt marshes and fresh-water wetlands.

While the patterns and zoning of Tasmanian coastal vegetation resemble that of the southern mainland, distinctively Tasmanian species are common: on the Freycinet Peninsula, 10% of the vascular plant species are endemic to the State.

Other habitats/communities

James Boyce, in his book *Van Diemen's Land* (2008), points out that the first European settlers around Hobart and the Tamar Valley found a land of bounty with wild game flourishing in the surrounding grassland/woodlands. There was little need for massive clearance to establish their cattle and sheep. The Tasmanian Emu and the Eastern Grey Kangaroo soon disappeared; European imports like cats and gorse became pests. Modern travellers on the Midlands Highway can readily see how degraded much of this land has become. It is only in recent years that efforts have been made to conserve remnants of these environments with their own set of endemic or now-rare plant species. Major players in this effort have been responsible landowners and groups such as Tasmanian Land Conservancy and Bush Heritage Australia.

When the boundary between Van Diemen's Land (later Tasmania) and New South Wales was first established, the majority of the Bass Strait islands were vested with Van Diemen's Land. Environmental conditions and closer links to the mainland have created special island flora. *One Hundred Islands: The Flora of the Outer Furneaux* (Harris, Buchanan and Connolly, 2001) is the prime reference for the eastern islands. Tasmania also has responsibility for Macquarie Island in the Southern Ocean. The Royal Tasmanian Botanical Gardens has a special 'Subantarctic Plant House' to display this unique flora.

Tasmanian Endemism

The proportion of endemic species Statewide is around 20%. This endemism can be explained generally as either being relics of the old Gondwanan flora or having more recently evolved following the melting of the Ice Age ice sheets and the flooding of the Bass Strait land bridge. The relic flora is exemplified by the conifers with nine of the eleven taxa endemic. The short time since the retreat of the ice sheets has not been long in evolutionary terms: this could explain the lack of clear precise distinction between some species in genera such as the Tasmanian *Boronia* species.



Coastal heathland in the Tarkine, near Couta Rocks. Species include *Bauera rubioides*, *Philotheca virgata* and *Sprengelia incarnata*



The concentration of unique species is highest in the mountains of the west and southwest, declining to much lower levels in the dry lowlands of the centre and north east.

Local conditions have produced 'hot spots' in a few places such as the Tasman Peninsula (fertile soils/coastal environment/high rainfall), Freycinet Peninsula-Bicheno (the driest zone of the State) or east of the Tamar, near Dazzler Range (unusual igneous rock low in silica and high in metallic compounds).

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Boronia gunnii (River Boronia) is endemic to Tasmania and is only found in rock crevices or in the shelter of boulders in the flood zones of a few Tasmanian rivers.
Photo: John Simmons



Wildflower garden in Tasmania revisited

Marion and John Simmons Photos: John Simmons

Marion and John Simmons are Life Members of APST and recipients of the Australian Plants Award. For their work on *Acacia* species, they have both been honoured with the award OAM. Marion has written three books on *Acacia* and Marion and John guided the fourth edition of 'A Guide to Flowers and Plants of Tasmania' by Launceston Field Naturalists Club (2008) to publication and are currently working on the fifth edition.

Our property is located at Legana about 16 km north of Launceston on the West Tamar and is about 0.5 hectare in size. The soil is substantially an acidic grey loam, in places over river gravel with an occasional small occurrence of clay.

The climate is rather dry during summer with normally a winter rainfall. Frosts are common in winter and in 2010 were particularly heavy taking out plants that had never been affected before, such as flannel flowers and some dampieras, while a lilly pillly (*Syzigium* sp.) was hardly touched and thrived and provided its first flowers in early February, 2011.

Many changes have occurred since our first article on the garden in 1998 (*Australian Plants* vol. 19, no. 156, pp. 355-359). The tree cover



is more extensive now although a number of large trees of the endemic *Eucalyptus amygdalina* (Black Peppermint) were removed four or five years ago as they were too close to the house and were full of ants. Last year two other eucalypts were taken out because they were growing out over the road and threatening power lines.

The garden has evolved into an informal native plant garden with a backdrop of larger trees that shade part of the garden at some time during the day. Paths wind through the shrubbery and out into the open, their direction at times dictated by the plants overgrowing estimated boundaries. The middle storey includes indigenous plants like *Micrantheum hexandrum* (River Tridentbush), a huge *Correa backhouseana* (Velvet Correa) 2.5 m tall by 6 m wide, *Bursaria spinosa* (Prickly Box), two species of callitris and endemic *Melaleuca pustulata* (Warty Paperbark).

Apart from these, and forming part of the understorey, self-seeding prostantheras and correas, not all naturally occurring in Tasmania, provide an interesting crop of young plants each year. As well as these, numerous *Crowea exalata* offspring appear together with hundreds of paper daisy hybrids that vary in colour from white to bright yellow. A large part of the garden has been mulched which has proved a constant delight to the many blackbirds that invade the area.



Micrantheum hexandrum



Correa backhouseana



Melaleuca pustulata (Warty Paperbark) is endemic to Tasmania. It is listed as rare and is restricted to the central East coast where it is found in a range of habitats including dry open woodland, grassland and scrub, riparian zones and stable dunes in sparse coastal shrubbery.

A major redesign occurred after the removal of a huge *Grevillea* 'Red Hooks' that attained the impressive size of 10 m x 10 m. We now have several large beds that have presented new opportunities and allowed the planting of a wider range of what we hope will be somewhat smaller plants. These include a limited range of eremophilas that have been reasonably successful. Heavy frosts during winter seem to limit the species we can grow successfully here.

Although the range of plants we grow is wide, acacias do form a large part of the mix. There are over 50 species totalling about 100 plants. The main flowering time is spring when the garden is awash with gold. Of the 20 acacias native to Tasmania we have 14 species growing, including three of the four endemics. We have excluded the fourth, *Acacia pataczekii*, because it suckers vigorously with shoots up to 10 m away from the main plant. Its roots ruined the seal in the carport and it has taken us years to eliminate it from the garden.



Thysanotus multiflorus

To grow lime-loving plants such as templetonia, some eremophilas and some acacias we add pieces of limestone rock at the base of the plants. So far we have found this to be effective.

We have planted a lily patch that features mostly species indigenous to Tasmania, among which are bulbines, thysanotus, thelionemas, arthropodiums and several species of diplarrena. A boronia patch with about nine different species is another development that has been particularly successful.

The block was part of a pastoral estate 100 or more years ago and was grazed during that time. Surprisingly, some plants of the original local flora still occur. These include endemic *Eucalyptus amygdalina* (Black Peppermint), *Acacia mearnsii* (Black Wattle), *Bursaria spinosa* (Prickly Box) and *Exocarpos cupressiformis* (Native Cherry). We have lived here for over 30 years and among the smaller plants we still find new plants of *Kennedia prostrata* (Running Postman), *Pimelea humilis* (Dwarf Riceflower), *Billardiera mutabilis* (Green Appleberry), *Astroloma humifusum* (native cranberry), *Dianella revoluta* (Spreading Flaxlily), *Acrotriche serrulata* (Ants' Delight) and *Melicytus dentatus* (Spiky Violetbush) as well as several species of orchid. A number of Tasmanian endemic plants have been planted in the garden and we continue to expand their range. Unfortunately alpine plants are out of the question because of the dryness and lack of altitude that those plants require.



Another part of the Simmons' garden, where wattles predominate.



Acacia simmonsiana, named in honour of the authors, Marion and John Simmons, who have promoted Australian acacias and advanced our knowledge of this genus through numerous writings, illustrations and photographs and their involvement with the Acacia Study Group of the Australian Native Plant Society (Australia). (Editor's comments)

APST Hobart Group's 2010 wildflower spectacular

Maria Honey, Australian Plants Society Tasmania (APST)

Maria has been the Publicist for the Hobart Group's Wildflower Spectacular for several shows. She is a published author and editor of APST's Hobart newsletter who loves the Tasmanian bush and regularly joins the Hobart Group's extended walks. She lives in a bushland hilltop retreat near Margate in southern Tasmania.

Since 1973, 17 flower shows have been held in Hobart, presented by Society for Growing Australian Plants (later to become Australian Plants Society Tasmania) volunteers. Mainly due to the energy and enthusiasm of Bruce Champion, who co-ordinated eight shows and has been on the committee of all except three, these celebrations of our native plants have become major events. From small beginnings the shows burgeoned into three-day extravaganzas held biennially in Hobart's City Hall and drawing thousands of local, interstate and overseas visitors. The 2010 show with the theme 'The Joy of Native Plants' was Bruce's swansong.

Support for another Wildflower Spectacular was overwhelming at the Hobart Group's General Meeting in May 2009, but there was less enthusiasm at a preliminary meeting of the regular Flower Show Committee with vivid memories of what hard work the 2008 show had been. Finally a decision was made. There would be a Wildflower Spectacular in 2010. This time it would be simple and easy - no heavy rocks, logs, trees or plants.

By October 2010 enthusiasm and a sense of excitement had replaced the lacklustre mood of early 2009. In early October, in Tasmanian Seniors Week, APST seniors hauled tonnes of rock, transported large trees and pot plants, lugged timber and gravel, toted soil, sand and mulch and built beautiful imaginative gardens to give pleasure to thousands for a mere three days.

On the two set-up days, City Hall was filled with the sounds of serious construction, and the unmistakeable bushland scent of the Wildflower Spectacular began to permeate the building. City Hall was transformed. Gardens filled its central space, all different and all indicative of the interests and imaginations of their makers. The hall silently enfolded Tasmania's native treasures.

Every visitor was welcomed with a tiny, fragrant posy of native flowers. Volunteers started work early to make sure there were filled baskets in the foyer. Thousands of posies were made in three days.



Setting-up. Photos: Joyce Batchelor, unless specified otherwise.



An overview of some of the Hobart Group's wildflower spectacular displays.



First stop was the Children's Art Exhibition in the foyer. This competition, for primary school children to paint or draw endemic Tasmanian plants, was Bruce's brainchild and produced some delightful works.

The local native plant nurseries – Braeside, Leslie Vale, Plants of Tasmania, Pulchella, Red Breast, Scented Grove, Huon View, Habitat Plants and Provenance Growers – transported thousands of plants, and displayed them with panache.

Allied Displays featured our regular exhibitors and supporters – Hobart City Council and Kingborough Council, Inverawe Gardens, Tasmanian Arboretum, Will Fletcher's Bonsai, the Tasmanian Herbarium, Gardens for Wildlife, Understorey Network, Birds Tasmania, Bushcare's 'Living with Wildlife', The Faces of the Florentine, Kim's Collection and Threatened Plants Tasmania.

The Children's Corner gave parents a break while their supervised offspring worked with feathers, seeds, etc to produce small works of art. Onstage there was adult art, including about fifty entries from APST artists. Christine Howell's display showed how the second edition of *Common Orchids of Tasmania*, an APST Identikit Booklet launched at the show, was put together.

Who would have thought a display featuring just one plant could attract so many people every day? Anne Thwaites and Ken Wright's 'Tasmania's Native Pepper Berry' stall showed *Tasmannia lanceolata* cuttings, how the cuttings look after six months and onwards to beautiful mature potted plants. Many customers were inspired to have their very own Native Pepper.



Tasmannia lanceolata



Star of Bruce Champion's 'I Love Australian Plants in Pots!' was his magnificent *Banksia marginata*, grown in a pot for more than thirty years. He hung small pots of *Rhodanthe anthemoides* above mature *Lagarostrobos franklinii* and *Allocasuarina verticillata* specimens.

Keith Corbett's photo display, 'Some Memorable Flowerings of Tasmanian Wildflowers', was aptly named with a veritable forest of white-flowering *Milligania densiflora*, the extravagant daisies of the Vale of Belvoir and colonies of many-coloured *Richea scoparia*.

The Tasmanian Bushland Garden's photos showed its development from what was practically a wasteland to the unique garden it is today. The Tasmanian Bushland Garden's volunteers also put together a 'Woodland Garden Display' with some of the plants flourishing at Buckland including *Sprengelia incarnata*, *Richea procera*, *Tetradlea labillardieri*, *Grevillea australis*, *Olearia stellulata* and *Boronia anemonifolia*.

Bird songs echoed through the City Hall from Ria and Alan Pegg's 'Garden for Birds'. Logs, mossy rocks, a bird bath, a white-flowering *Anopterus glandulosus* and flowering *Epacris* spp. invited avian visits.

Rocks, water and moss were the essentials of Maria and John Honey's display, as were low drystone walls, *Diselma archeri*, pots of flowering *Pterostylis pedunculata* and *Baloskion tetraphyllum*.



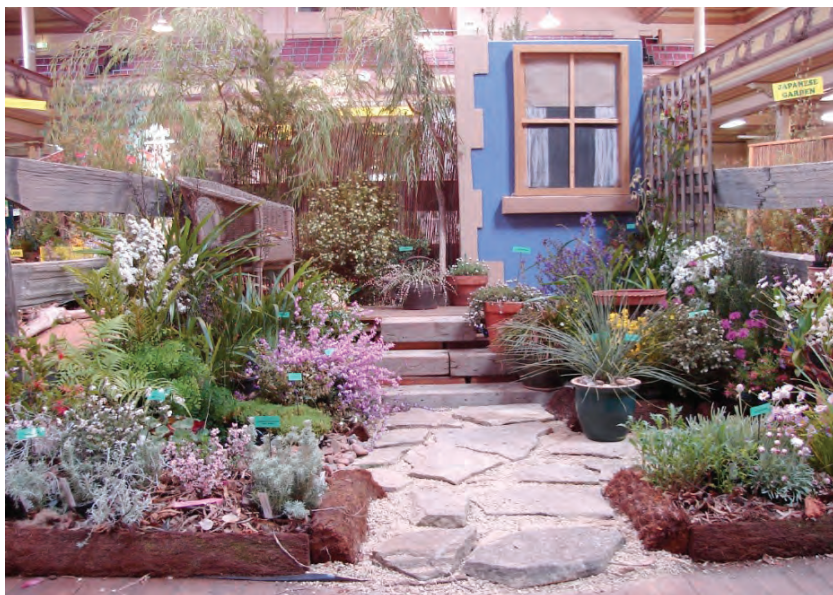
Kay Geeves showed plants suitable as ground covers with a tapestry of colour with cool notes of green from ferns *Phymatosorus pustulatus*, *Blechnum nudum* and *Blechnum penna-marina*. Some of the flowering plants were *Pultenaea pedunculata*, *Tetralochea labillardieri*, *Euryomyrtus ramosissima*, *Grevillea* 'Amethyst' and an eye-catching 'must have' – *Philotheca* 'Cascade of Stars'.

The Kingborough Group's traditional Cut Flower display included *Micromyrtus ciliata*, *Boronia crenulata*, *Hakea salicifolia*, *Styphandra glauca*, *Brachysema lanceolatum* and *Lechenaultia biloba*.

Mark Geeves' elegant 'Oriental Garden' featured simple screens and crowded greenery, predominantly the green leaves and red branches of *Tasmannia lanceolata*. In front of this abundance there was simplicity - raked gravel, stepping stones, rocks, moss and a dark-red ceramic pot where orange goldfish swam.

Susie Meech's superb 'Cottage Garden' showed how natives can be used in a traditional-style garden.

Beyond the tracks of a long-disused railway, just visible through the conquering plants, were the crumbling remains of a prospector's hut. Rusty tools, traps and tackle for horses hung outside. Inside past a tall *Dicksonia antarctica* was the skin of a Tasmanian tiger, a rusted kettle,



Susie Meech's superb 'Cottage Garden' Photo: Christine Corbett

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Australian Plants awards, 2011

At the 2011 ANPSA Conference, Australian Plants Awards for 2011 were conferred upon Gwen Elliott (Professional award) and Ken Warnes (Amateur award). The photos, by Cathy Powers, show Gwen and Ken making their acceptance speeches on receiving their awards.

Gwen Elliot AM



Gwen has been an active native plant enthusiast, propagator, grower, educator and promoter for over 40 years. With experience from owning and operating both wholesale and retail nurseries specialising in native plants from 1963 to 1992, Gwen has promoted Australian plants in many ways: as an author of 10 books on Australian plants, through guest appearances on radio and television gardening programs, as a guest speaker and lecturer to numerous groups, as a tour leader and as a regular contributor to *Australian Plants* and *Horticulture Australia*.

Gwen's immeasurable contribution to Australian plants has been recognised with awards including Honorary Life Membership of APS Victoria (1987) and Membership of the Order of Australia (AM) (2001) for service to horticulture of native plants, particularly through the Society for Growing Australian Plants. Her leadership roles include past President of the Friends of the Royal Botanic Gardens Cranbourne Group, founding member of the Horticultural Media Association (Victoria) and leader of the ANPSA Epacris Study Group. Her involvement at so many levels has ensured continued prominence in the understanding of our unique Australian flora.

Ken Warnes

Ken has been a keen observer of plants since childhood. Since joining SGAP (South Australia) in 1963, he has been an active and enthusiastic scholar and mentor on eremophilas and has been unstinting in his research and assistance to others for over 50 years. He has contributed articles to many APS publications and assisted other authors on eremophilas. He has made numerous presentations to APS and community groups and has assisted with displays at APS and other shows. At the Arid Lands Botanic Garden he has advised and assisted in layout, planting and introduction of new species. He has consulted botanists from the SA Herbarium in conjunction with field expeditions for over 40 years. At his property at Owen, which many community and APS groups visit, Ken has extensive plantings of eucalypts and many other genera and manages 25 acres of remnant mallee vegetation. With about 300 different species of *Eremophila*, he is keeping a record of a number of hybrids that are being collected in the field and evolving in members' gardens. In a sustained effort throughout his life, Ken Warnes has made a very significant contribution to the knowledge, propagation and growing of Australian plants, particularly in the genus *Eremophila* and has been generous in sharing his knowledge.



Old West Coast prospector's hut.

Photo: Christine Corbett

rocks and crystals. This was Sib Corbett's display 'Traces of the Past'. The hut was surrounded by vigorous *Lagarostrobos franklinii*, *Eucryphia lucida*, *Phyllocladus aspleniifolius*, *Atherosperma moschatum*, *Nothofagus cunninghamii*, *Anopterus glandulosus*, *Tasmannia lanceolata*, *Bauera rubioides*, *Sprengelia incarnata*, *Eucalyptus* spp., and *Epacris* spp.

The Wildflower Spectacular united us all as we worked to achieve as close to perfection as we could get, in our desire to share our love for the bush with others. Hopefully we educated the general public in the most pleasant way possible to respect and appreciate our natural flora and fauna and to think about why it makes so much sense to grow native plants. Visitors from Germany, Canada, the UK, the USA, interstate and, of course, Tasmania offered their praise via the Comments book.



Australian Plants Society Tasmania Inc

Visit the following websites for information on the:

Hobart District Group: www.apstas.com and

Northern Group: www.apstasnorth.org

North West Group: <http://apstasnorthwest.org.au>

The Epacrids – ten years on

Ron Crowden

Ron was formerly a botanist at the University of Tasmania. Although he retired from his position some years ago, he did not retire from the Epacridaceae. His interest in this plant group has continued whilst he has been a research associate at the Tasmanian Herbarium.

This article summarises alterations and additions to Tasmanian epacrids since the article published in *Australian Plants*, vol. 21 nos. 166-169. Of major significance is the general acceptance by current taxonomists that the family Epacridaceae should be reclassified as the Sub-Family Styphelioideae within the Family Ericaceae. However, this reclassification at the family level does not affect the lower levels of the taxonomic hierarchy. At the 'hands on' level, growers and field observers can still refer to the plants by the familiar names of the genera and species they have always used.

The changes include:

- Renaming of species in the genus *Leucopogon*
- Creation of a new Tribe Archerieae
- Additions to *Epacris*
- Renaming of *Cyathodes dealbata*
- Changes in *Sprengelia* species.

Three species formerly included in the genus *Leucopogon* have been renamed. *L. milliganii* is now *Androstoma verticillata*. *A. verticillata* is a low, bushy shrub found in montane heaths of the southwest. It can be identified by its whorled leaves, and by the persistence of old bud scales on the stems.



Androstoma verticillata, showing flowers, fruit, whorled leaves and persistent bud scales.
All photos by Ron Crowden



Acrothamnus hookeri. Male flowers and section (top); female flowers and section (bottom)

Leucopogon hookeri and *L. montanus* are now *Acrothamnus hookeri* and *A. montanus* respectively. *Leucopogon* and *Acrothamnus* in Tasmania are readily distinguished by their flowers. In *Acrothamnus* the flowers are unisexual and the plants dioecious. The larger male flowers have well-developed anthers, while in the smaller female flowers, the anthers abort or do not develop. In *Leucopogon*, on the other hand, there are no morphological indications of gender differences; the flowers appear as hermaphrodite and the plants as monoecious.

A new Tribe Archerieae, comprising just the one genus *Archeria*, has been created. *Archeria* previously was a member of the Tribe Epacreae (along with the genera *Epacris*, *Rupicola*, *Woolfsia* and *Lysinema*). *Archeria serpyllifolia* ssp. *minor* is a rare endemic, which is found in damp, seepage places at high altitudes. Bentham, from a single 'rather poor' specimen (*Flora Australiensis* 1868), referred to it as a subspecies



of *A. serpyllifolia*, which 'appeared smaller than the species in all its parts' hence the epithet *minor*. From our herbarium material and several recent new collections it is clear that it is sufficiently distinctive from *A. serpyllifolia* to give it species status. It differs in habitat, habit and in floral moral morphology, and is anything but 'smaller in all of its parts'.

There have been several additions to *Epacris*.

1. The reference to *Epacris* aff *mucronulata* (*Australian Plants* vol. 22, p. 221) has been clarified and the taxon identified as *Epacris franklinii*, thus reinstating a former name.
2. There are three new *Epacris* species and one new subspecies.
 - (a). *E. graniticola*. Although known for a number of years, it has only recently been named. It grows on the granite mountains of Stronach and Cameron in the northeast and also at Rossarden.
 - (b). *E. cerasicollina* is extensively distributed on east coast dolerite between about Seymour to just north of Triabunna, and on and for a short distance inland of the East Coast Range. Previously confused as part of the *E. tasmanica* complex, it can be distinguished from *E. tasmanica* by difference in anther exsertion. *E. tasmanica* sens. str. is limited to areas south of Triabunna, and on the Forestier Peninsula and at relatively low altitudes on the Thumbs and nearby ranges.
 - (c). *E. moscaliana* is a mainly riverine species, most common along the St Pauls River and some of the swamps which feed into it, as well as on faster flowing stretches of the Nile (at and upstream of Lilyburn Bridge) and Mersey (upstream of the Union Bridge) rivers. It has also been collected on Gog Range and on Mt Claude. It is most similar to *E. exserta* and *E. glabella*, differing mainly in leaf characters.
 - (d). Two subspecies of *Epacris heteronema* are recognised. Subspecies *heteronema*, with entirely glabrous sepals and bracts, is the common form found typically in buttongrass areas. Subspecies *gigantea* has hirsute sepals and bracts, and is more likely to be found in the scrub margins of wet sclerophyll and rain forest. This subspecies can sometimes attain the height of a small tree. The type specimen recorded by F. von Mueller (1854), from the base of Mt La Perouse, has a height range of 6-11 m and stem diameter of 10-15 cm.



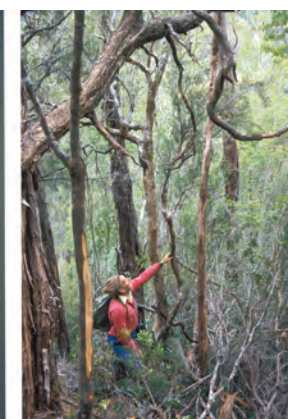
Epacris franklinii, anthers enclosed.



Epacris graniticola, anthers exserted, leaves reflexed.



Epacris cerasicollina, anthers half-exserted.



Epacris tasmanica (left) *E. moscaliana*; (centre) *E. heteronema* ssp *gigantea*, at Second Splits, Gordon River (right).



Cyathodes dealbata. The remaining component of the former *Cyathodes* genus, after separation of the new genera *Leptecophylla* and *Planocarpa*, has been reassigned to a new genus, where it is included with the New Zealand species *Cyathodes pumila* (actually conspecific with *C. dealbata*). The new name is *Montitega dealbata*. (*Montitega* means a 'mountain mat').

Sprengelia montana and *S. propinqua*, although recognised as separate species by early botanists, were later incorporated into a highly variable *S. incarnata*. *S. montana* and *S. propinqua* are now reinstated as distinct species. There is a significant floral difference between *S. incarnata* sens. str. and *S. montana* and *S. propinqua* in that the anthers of *S. incarnata* are persistently connivent (converging, but not actually touching or fused) to the style throughout anthesis and afterwards. In the other *Sprengelia* species, the anthers are connivent in the bud and in early anthesis, but as flower opening progresses, the anthers separate and become erect and spreading.

Sprengelia minima is a new species which inhabits the cushion plants *Dracophyllum minimum* and *Donatia novae zelandiae*. It can most readily be seen at K. Col and on the Mawson Plateau (Mt Field, in *D. minimum* cushions) and at Lake Esperance (Hartz Mountains in both



Sprengelia incarnata (left), anthers coherent to the style; *S. propinqua* (right), anthers separate from the style during anthesis.



Above: The flowers *Sprengelia minima* barely emerging above the cushion surface.



Left: The branching pattern of *S. minima*, revealing that most of the plant is within the cushion.

cushion types). The plant is for the most part embedded in the cushion, with only the flowers and the very uppermost leaves being exposed and slightly spreading on the cushion surface. The tiny flowers are solitary, white or pink-tinged, terminal on the main branches only, and cup-shaped, rather than the star shape typical of *S. incarnata*, *S. montana* and *S. propinqua*. (The pink flowers of *S. distichophylla* also are cup shaped). The same cushions may also house plants of *S. montana* though this species is more likely to be found around the margins or between adjacent cushions. However, *S. montana* is easily distinguished from *S. minima*, because of its erect, usually multistemmed stature, star shaped flowers and the compound flower heads.

Main references:

- Crowden, R.K. and Menadue, Y. (2001) *Australian Plants* Vol. 21, Nos. 166-169.
- Crowden, R.K. (2007) *Australian Systematic Botany*. Muelleria 25; 115-128.
- Crowden, R.K. and Duretto, M. (2012) *Flora of Tasmania Online* (available soon at www.tmag.tas.gov.au/floraonline).



Gardening for natural biodiversity

Phil Collier and Robin Garnett, Rubicon Sanctuary, Port Sorell, Tasmania

Phil and Robin manage a covenanted property Rubicon Sanctuary that is a refuge of natural biodiversity amongst rural and rural residential development. They have been working with Council planning processes to re-create bushland inter-connections with nearby natural habitats.

Over the years, ANPSA and its member societies have provided enormous encouragement for people to consider growing native plants for several benefits including bird attracting and drought resistant gardens. There seems to be a lesser focus on protecting native (plant) habitats, which ultimately provide the “ecological services” that enable native plants and animals to survive and evolve. Meanwhile, our local council has a policy for rural residential development of bushland that disallows the clearance of more than one half of each block. If this were adequately implemented, rural residential development would extend ANPSA’s vision to gardening with indigenous Australian plants in their natural habitat. Ideally such habitat would simultaneously look great and reduce natural risks while also retaining or enhancing its natural values.

Three years ago we purchased a 20 hectare property called Rubicon Sanctuary near Port Sorell in Tasmania. The property supports several threatened plant and animal species and we have set about managing these key species and the overall natural biodiversity. One of our first decisions was to avoid the introduction of any organism that did not belong naturally (ourselves excluded!). The immediate consequence of this decision is no vegetable garden and our ornamental gardening only includes plants and their progeny that grow here naturally. The sandy soil is naturally infertile, if not positively poisonous, being very acid. Under an open tree canopy, we have heathland shrubs, herbs and graminoids with ubiquitous *Pteridium esculentum* (Bracken) amongst and/or overtopping.

Our first major challenge was to rehabilitate the surrounds of our new home. Considerable sand was disturbed and some undisturbed areas were repeatedly driven over during the building project. We have tried to work with nature to rehabilitate this ground. Our approach is simple: keep exotics out. We have mulched bare sand with local slash debris partly saved from initial site clearing. Very limited transplanting from our fence lines and elsewhere in winter gives us some opportunities for landscaping.



Mixed shrubs with bracken removed in the foreground with managed graminoids rehabilitating near the house.

We have found that numerous indigenous plants have appeared from the slash debris and/or seed. Some of the pioneer indigenous species now require management to avoid a monoculture, especially *Austrostipa flavescens* (Speargrass).

As with many rural properties in bushland, we are very focused on the prospect of wildfire and other natural threats to our built assets. We initially removed trees that were a direct threat to the buildings out to about 25 m. Around the house and shed, we have a 20 m inner fire protection zone with an outer protection zone between 20 m and 35 m. This conforms to fire service recommendations on our flat land. Plants over 1 m tall have been removed from the inner protection zone. The inner 10 m or so of this zone is subject to slashing and we encourage graminoids, especially *Lepidosperma concavum* (Sand Swordsedge), which remains green all year. Ground covers are also welcome, for example *Hibbertia procumbens* (Spreading Guineaflower), *Kennedia prostrata* (Running Postman) and *Styphelia adscendens* (Golden Heath). Selected feature shrubs and trees are retained in the outer protection zone, with managed gaps between these features.

In our climate, bracken tends to decay very slowly, so a climax understorey tends to consist of bracken in varying states of green and brown. The dead bracken creates a significant fire hazard especially when collapsed in the ground layer, is unsightly



Kennedia prostrata



Hibbertia procumbens



Styphelia adscendens

and hides the spring flowers. We have made it our priority to remove bracken, perpetually in the inner zone and annually in late autumn in the outer zone. This allows us to admire the extensive display of flowering shrubs in spring.

Young bracken crosiers can be frosted naturally in mid to late spring, but this relief is brief. While fronds are young they are easily dispatched with a fern hook in the inner zone. Our annual clearing in the outer zone is fairly labour intensive, requiring a cut to each standing stem. Such cutting needs to be raked up, which also collects other ground litter to further reduce the fire hazard. We hope that over time the vigour of the bracken will decline and it may largely disappear.

Once it is significantly altered, the one thing that we can never recover fully is natural biodiversity. It is our genesis and surely our future will be more assured if we actively look after it. If we can find a formula to live in harmony with natural biodiversity we create a win-win, especially if any threatened species are cared for. The formula presented here is one way we can do this. The protection zones acknowledge that



White season – the view towards the house showing *Epacris impressa* and *Leucopogon virgatus*. The disturbed ground near the house is rehabilitating.



Yellow season – the view from the house showing the understorey dominated by *Aotus ericoides* with the bracken removed.



A 'reference garden' under construction. It aims to display many of the indigenous plants with labels.

nobody wants to recklessly expose themselves to risk, but these are designed to minimise disturbance. For several weeks in spring native plants in sandy areas like ours create a spectacle almost unparalleled in cultivated gardens. We have a white early spring season and yellow late season. We also do a fair amount of weeding; but everyone will have their own level of fastidiousness.

The total area that is disturbed and managed by the inner and outer zones is about 6,500 m², assuming the dwelling is about 20 m by 20 m. On the basis of the old five acre block (approx. 20,234 m²), this is a little less than one third of the block size that is managed for the dwelling. Of course, if natural biodiversity is a focus, the reminder of the block has to be managed for its natural values, and not horses or motorbikes! That's another story.

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Bush recovery at Knocklofty Reserve

Bruce Champion, Australian Plants Society Tasmania.

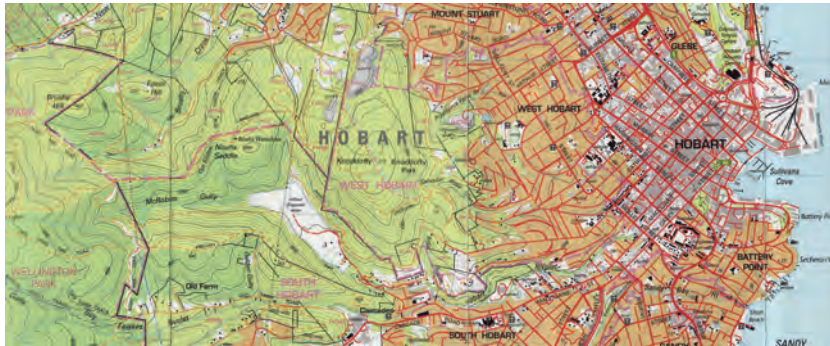
Bruce has been admiring, growing, propagating, displaying and photographing Australian plants for over 45 years. He is a Life Member of APST, the Coordinator of the Hobart Group's Nursery and the past Convenor of many Wildflower Spectaculars. For the past ten years, Bruce has been Flora Officer of the Friends of Knocklofty Bushcare group (FoKL).

Hobart's Knocklofty Reserve lies in front of Mt Wellington, as shown in the photo above. It covers over 140 hectares of mostly natural bushland and links Hobart City to the Mt. Wellington Reserve. It is a refuge for native animals and plants, some of which are threatened or endangered, and for the many birds that are displaced by clearing and residential development.

History of Knocklofty

For thousands of years Aboriginal people would have used the reserve and surrounding hills and mountains, at that time draped in natural vegetation and rich in plants and animals to provide their families with food, medicine and other necessities.

The first settlers of Hobart Town arrived in 1804. By 1829, when the settlement was still largely confined to a few blocks, 'the hill' (now Knocklofty Reserve) behind the town had already been completely cleared for firewood and building timber, earning it the name of Woodman's Hill.



Map of Knocklofty Reserve, centre, showing it linking Hobart with Wellington Park. Scan by Photo: B. Champion of part of "Hobart" 1:25,000 TasMap Base image by TASMAP (www.tasmap.tas.gov.au)

Quarrying of sandstone was a major industry on the eastern slopes of Knocklofty and many of the fine buildings in Hobart were constructed from Knocklofty sandstone including public buildings, major banks and churches as well as many of the humble cottages.

Knocklofty was also one of the major brick making sites in Hobart. Brickworks were established in 1882 in response to a shortage of bricks. One continued in a small way until 1965, when the old works finally closed and all the buildings were demolished.

Knocklofty has always been a popular picnic and recreation area. An early John Glover painting, which hangs permanently in the Colonial Gallery of the Tasmanian Museum and Art Gallery, shows some hunters coming into the reserve from Poets Road, on what is now the Glover track. *Eucalyptus globulus*, *Bedfordia salicina* and *Diplarrena moraea* are easily identified in this painting. The area was a popular destination for artists in the early days and many of them painted a view over the city from the reserve.



John Glover information board near his painting site
Photo: B. Champion

The reserve was privately owned until 1942, when it was purchased by the Hobart City Council (HCC) who opposed plans to recommence timber cutting on the reserve. The City of Hobart Plan of 1945 stated 'The immediate timber-clad background of the city has been preserved by the action of the City Council in purchasing the slopes of Mount Knocklofty'.

Although Knocklofty was reserved for the use of the people of Hobart from 1945 onwards, it was neglected and mismanaged for many years. It became so degraded and choked with gorse and broom that when the old 'green' was cleared in 1975, bulldozers were used to clear the gorse. Annual burns of the gorse and broom and frequent wildfires weakened the vigour of the trees and prevented the development of the healthy plant species, which once characterised Knocklofty.

In 1983 a management plan was adopted which recognised the poor state of the area. A programme was put in place to begin the removal of weeds and the regeneration of the indigenous bushland. At the same time tracks were upgraded to encourage visitors back to the reserve.



The 'Green' after gorse spraying 1986.

Hobart City Council archive print



Friends of Knocklofty Group

The Friends of Knocklofty Group (FoKL) was formed in 1992 to protect and restore the reserve. Three years later, Hobart City Council provided a Bushcare Coordinator to facilitate community involvement in bushland restoration and regeneration on this Reserve and other areas near the city. Since 1993, with help from the Hobart City Council and funds from the Federal Government, FoKL has used a Weed Management Plan to clear over 150 sites, mostly on the eastern side of the reserve, and planted seedlings of indigenous plants.

Grants to Friends of Knocklofty Group by the Federal Government between 1999 and 2009 also made it possible to carry out more restoration works such as extensions to wetlands areas, the clearing of areas choked with gorse, track signage, additional fauna habitat and erosion control down the Salvator Rosa Glen which drains the eastern side of the Reserve.

FoKL volunteers have spent many hours over the past 18 years helping to restore the reserve. FoKL works three half days per month from February to November, mainly weeding. Woody weeds (held in such disdain that only common names will be used) such as briar rose, blackberry, broom (both English and Spanish), Euryops, gorse,



The 'Green' in 2008, 14 years after planting.

Photo: A. Ault



Eastern wayleave 1986
HCC archive print



The eastern wayleave, July 2008 after 12 months
Eucalyptus & Acacia clearing. Photo: A. Ault

hawthorn and Spanish heath are cut and pasted using glyphosate loaded dabbers supplied by the Hobart City Council. Small seedlings are pulled only after good rain, but bone seed is nearly always pulled then the ground stamped flat again. Monthly activity signs are displayed at six entrances. FoKL has encouraged the wider community (via the National Tree Day) and local school children to help with planting and weeding. During this time FoKL has evolved into a very dedicated group and is delighted with the increased numbers of people using the area for dog walking and general recreation. The reserve is not on a tourist route so is mainly used by local residents, most of whom access it on foot.

FoKL has forged a business relationship with the local electricity supplier Aurora. When the transmission lines were installed through the reserve, Spanish heath and gorse were introduced by the construction vehicles. Also, Aurora regularly had the tall eucalypts and acacias cut, leaving the saplings on the ground and the stumps to resprout. Since 2005, with a contract through the Hobart City Council, FoKL has been responsible for weeding and cutting and pasting the tall species along the wayleaves under the powerlines, thus eliminating coppicing. This area is now becoming a wonderful healthy grass land and payments have helped fund other improvements in the reserve.

Botanical surveys commissioned by the Hobart City Council and FoKL have identified that Knocklofty Reserve contains over 250 species of Australian plants growing in ten dry and wet sclerophyll forest



communities. Of the 309 species in the FoKL Plant Species List, 240 are Tasmanian indigenous, five are introduced Tasmanian, nine are introduced Australian and 55 are introduced overseas species. Nine rare and threatened plant species have been identified, including the Knocklofty Leek Orchid (*Prasophyllum perangustum*), which is unique to the reserve. Plantings have been designed to restore indigenous plants to areas disturbed by quarrying, grazing and woody weed infestations and to provide habitat for the various fauna species living in the reserve.



Prasophyllum perangustum
Photo: A. Ault

Removal of woody weeds from 150 sites on the reserve has been most successful, and now over 98% of the reserve is weed free. Over 30,000 indigenous seedlings, most from the Hobart City Council nursery, but many propagated by FoKL from cuttings and seeds collected on the reserve, have been planted using weed mats at first and now eucalypt mulch. Many plantings have been successful. Unfortunately drought periods have followed some of the larger planting activities and the failure rate has been high after these events.

Species

Recovered flora communities include heathland over sandstone as well as dry and wet sclerophyll over Tasmania's igneous dolerite. Species planted are underlined below.



Chiloglottis reflexa
Photo: B. Champion

Species in the heathland areas include *Aotus ericoides*, *Boronia pilosa* var. *pilosa*, *Dianella revoluta*, *Dillwynia sericea*, *Epacris impressa*, *Hibbertia riparia*, *Leucopogon collinus*, *Persoonia juniperina*, *Pimelea linifolia* subsp. *linifolia*, *Stylidium graminifolium*, *Tetratheca labillardierei* and *Thelionema caespitosum*. Many other species abound under *Eucalyptus pulchella* and *E. viminalis*. Several orchid species including *Acianthus pusillus*, *Chiloglottis reflexa*, *Pterostylis nutans* and *Thelymitra ixioides* are also found in these areas.



Knocklofty summit before gorse clearing



Knocklofty summit, now a beautiful woodland.

Photos: A. Ault



Growing in the dry sclerophyll areas are typical Australian dry bush species such as *Acacia dealbata*, *A. genistifolia* (upright and prostrate forms), *A. gunnii*, *A. melanoxylon* (small form), *A. myrtifolia*, *A. stricta* and *A. verticillata*, *Allocasuarina littoralis* and *A. verticillata*, *Banksia marginata*, *Cassinia aculeata*, *Chrysocephalum apiculatum*, *Coronidium scorpioides* (syn. *Helichrysum scorpioides*), *Craspedia glauca*, *Daviesia ulicifolia*, *Diplarrena moraea*, *Dodonaea viscosa* subsp. *spatulata*, *Exocarpos cupressiformis* and *E. strictus*, *Goodenia ovata*, *Leptospermum scoparium* var. *scoparium*, *Linum marginale*, *Lissanthe strigosa*, *Lomatia tinctoria*, *Ozothamnus obcordatus*, *Pomaderris pilifera*, *Pultenaea daphnoides* var. *obcordata*, *P. juniperina*, and *P. pedunculata*, *Senecio biserratus*, *S. quadridentatus*, *Stackhousia monogyna*, *Velleia paradoxa* (rare) and *Wurmbea dioica* subsp. *dioica*. These are stand alone and understorey species to *E. globulus*, *E. obliqua*, *E. ovata*, *E. pulchella* and *E. viminalis*. The dry sclerophyll species of orchids include *Caladenia cracens*, *C. echidnachila*, *C. gracilis* and *C. rubra*, *Chiloglottis triceratops*, *Diuris chryseopsis*, *D. pardina* and *D. sulphurea*, *Eriochilus cucullatus*, *Gastrodia sesamoides*, *Glossodia major*, *Microtis unifolia*, *Prasophyllum brevilabre*, *Pterostylis malogramma*, *P. pedunculata* and *P. williamsonii*, *Thelymitra pauciflora* and *T. rubra*.

The wet sclerophyll community was little affected by the introduced weeds and under the afore-mentioned *Eucalyptus* canopy, some of the species that can be found are the tall form of *Acacia melanoxylon*, *Bedfordia salicina*, *Coprosma hirtella*, *Correa reflexa* var. *reflexa*, *Dianella tasmanica*, *Dicksonia antarctica*, *Gonocarpus teucrioides*, *Olearia argophylla*, *O. viscosa*, *Polystichum proliferum* and *Zieria arborescens*.

All over the reserve many indigenous grass and sedge species abound, including *Austrodanthonia caespitosa*, *A. induta*, *A. setacea* var. *setacea*, *Gahnia grandis* (in wetter areas) and *G. radula* (food of the endangered *Chaostola* skipper butterfly), *Lepidosperma concavum*, *L. curtisiae*, *L. ensiforme* and *L. laterale*, *Lomandra longifolia*, *Poa gunnii*, *P. labillardierei* var. *labillardierei*, *P. rodwayi* and *P. sieberiana* and *Themeda triandra*.

Introduced climbers such as banana passion fruit, ivy and *Billardiera fusiformis* (syn. *Sollya heterophylla*) are removed when found. Indigenous climbers include *Clematis aristata* and *Comesperma volubile*, while ground cover creepers are represented by *Bossiaea prostrata*, *Clematis gentianoides*, *Goodenia lanata*, *Kennedia prostrata* and others.



Old disposal site with 3 m+ English Broom (left). The same site four years after weeding, planting and mulching with Eucalyptus bark. Photos: A. Ault

Fauna

Indigenous fauna have been identified including insects, birds, frogs, reptiles, and marsupials. Over the past eight years, the presence of these fauna has been detected by bird watching and listening with experts from Birds of Australia; observing scats, foot prints, diggings and trapping of marsupials with a wild life vet; listening to frog calls, catching tadpoles and frogs; and looking for and identifying insects and reptiles.

Actions such as plantings, pond restorations, and weed removal have helped to improve the habitat of these fauna and encourage numbers and varieties to prosper on the reserve.

Building or rehabilitating 13 frog ponds began after a study into the loss of frogs in the reserve. The main cause was the mistaken belief that draining the water catchments would reduce mosquito numbers. An old farm dam was emptied of small basalt boulders, bentonite clay lined, fenced to keep dogs out and replanted inside with *Juncus pallidus* and on the edges with *Poa labillardierei* var. *labillardierei* and *Lomandra longifolia*, and is now a splendid teaching frog habitat.



Frog dam, now Janet's Pond, when re-established 2000 (left) and in 2008 (right)
Photos: A. Ault



The Bandicoot corridor in 2001 after planting.



The same site in July 2008 following three plantings Photos: A. Ault

Providing or improving habitat for the Eastern Barred Bandicoot has been undertaken with low prickly shrubs. After trapping showed that these beautiful little animals prefer to live under grass tussocks, hundreds of *Poa labillardieri* var. *labillardieri* were planted.

After gorse clearing, the Bandicoot corridor was planted to provide habitat for the Barred Bandicoots when the gorse in a down hill neighbouring property is removed. On two National Tree Days many visitors joined FoKL members to plant hundreds of indigenous plants in this narrow corridor.

Eucalyptus globulus, *E. obliqua* and *E. ovata*, some of the preferred habitat for the Swift Parrot, have been planted where once there were grass paddocks.

The reserve now supports over 78 bird species, 8 fauna species, 5 or 6 frog species, and uncountable insect species.

FoKL are very grateful for the help and assistance received from the Hobart City Council Bushland and Reserves Unit, Aurora and contractors who supply tree pruning mulch. The Federal Government and Telstra Country Wide provided financial assistance.

For further information please refer www.friendsofknocklofty.org

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