HFNC Excursion to 'Brie Brie' Scrubby Hill on 22 October 2023

Rod Bird & Diane Luhrs

Participants: Diane Luhrs & Rod Bird, Peter Hocking, Ross Simpson, Wendy & Peter McDonald, Sandy Vanrenen & Doug Gardner, Judy Vanrenen & Peter Prasser.

We left Hamilton at 9.0 am on a day that promised rain. That duly arrived at Dunkeld where we met others, and there were some showers throughout the day but we were lucky that it was not very cold or windy and did not affect us unduly. The main negative was that the sun orchid flowers were not open.

Our interest in this bush block stems from the fact that it is the only large remnant of native vegetation remaining in substantially its original state in the Glenthompson area of non-basalt plains geology. Indeed, very few (if any) farms in western Victoria have retained such a large area. After settlement, much of the landscape in this general area of Glenthompson was eventually cleared. Bushy Creek and other waterways were severely eroded and, in the last 50 years, considerable planting of trees and fencing off of the streams has been undertaken across the landscape, including Brie Brie.

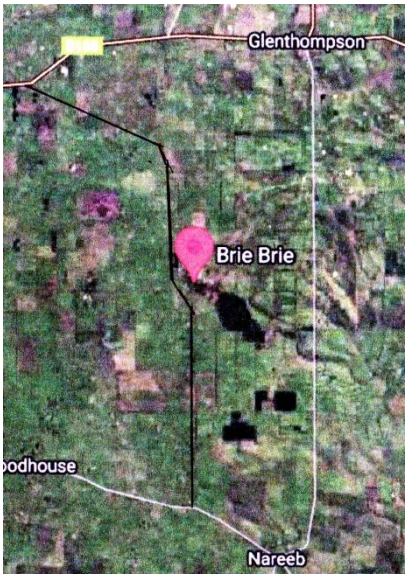
A background to the history of Brie Brie may be seen in the book by Richard Allen & Kimbal Baker, entitled *Great Properties of Country Victoria – the Western District's Golden Age* (publ. The Miegunyah Press, 2015). The Brie Brie area was settled in 1840 as part of the Lake Repose station and very little clearing occurred in the early years. One reason that the bush still exists may be that only 2 families have controlled the farm since the Murrays acquired it in 1873 and the Mann family succeeded in 1936. For whatever reasons, both families were happy to leave the bush block intact. Ted Mann is certainly proud of the family record in resisting pressure to clear the bush in the 1960-80s.

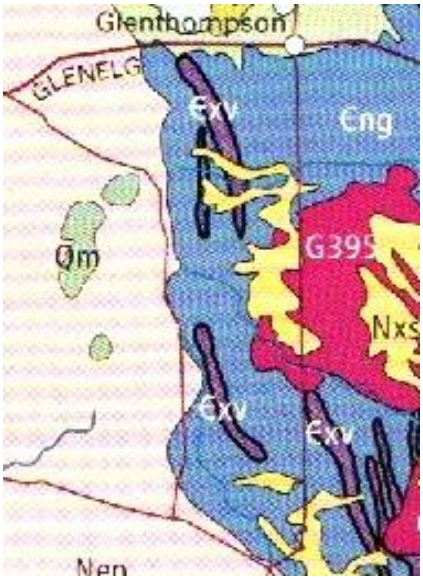
The Glenthompson landscape (the Stavely Tableland) consists of rolling hills (often deeply dissected), sandy plains and saline flats and seeps. The sandy to sandy-loam duplex soils have developed over basement rocks of varying types. For an appreciation of the complex geology see Leon Costermans & Fons VandenBerg (2022) *Stories beneath our feet: Exploring the geology and landscapes of Victoria and surrounds* (Costermans Publishing). The basalt plains ('newer' volcanics) are mostly to the west of the south-heading part of Bundooran Lane and appear to feature only on the western fringe of Brie Brie.

From Costermans and VandenBerg (2022), the geological units that comprise much of Brie Brie are:

1. Nxs Marginal-marine siliceous sands – Pliocene, 2.6-5.3 ma
2. €ng Glenthompson Sandstone (sandstone, mudstone, shale) – Cambrian, 485-541 ma
3. G395 Bushy Creek Granodiorite – Ordovician, 444-485 ma
4. €xv Metamorphosed mafic (Mg-Fe, feldspar) volcanics, upfaulted – Cambrian, 541 ma

Much of the Stavely Tableland has a lateritic regolith, with leaching of iron and other minerals from the topsoil and deposition on clay below. Some areas have a partial cover of Cenozoic (2.6-66 ma) sands.



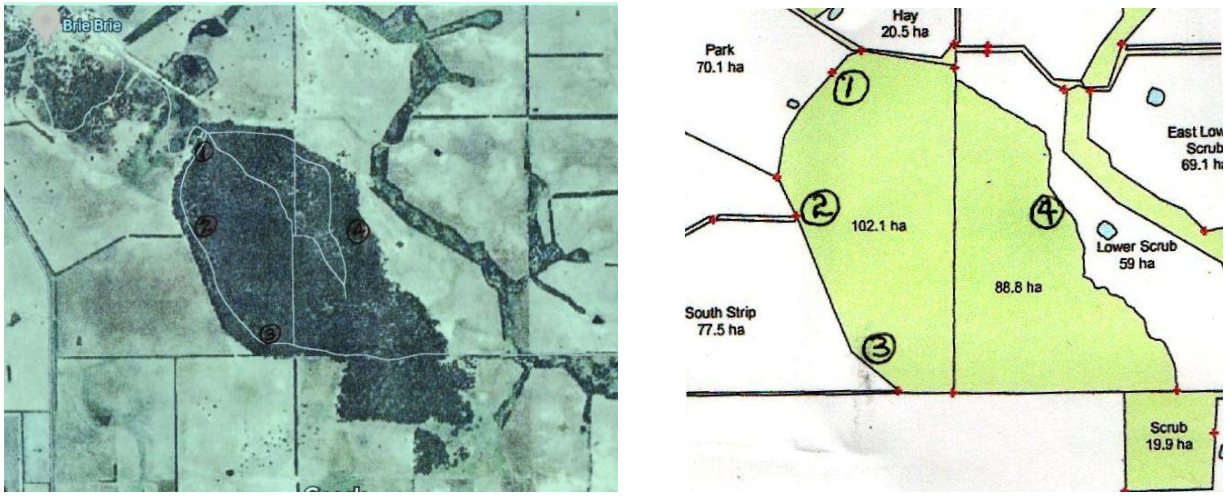


The maps show Glenthompson Sandstone (€ng) and possibly tiny parts of Metamorphosed mafic (€xv) and Bushy Creek Granodiorite (G395) form the bulk of Scrubby Hill.

Based on difference in elevation one might also expect some variation in the vegetation over the unit.

Ross Simpson was our local guide for the day. He has been observing the flora of the 2 blocks of Scrubby Hill bush and conducted us to 4 sites.

The main block is 102 ha in area and stock do not have access to it. The other block of 89 ha is adjacent, a fence separating the two, but unfenced on the east side. Another 20 ha unfenced block lies to the south.



Scrubby Hill blocks and sites visited (1-4)

Lou Mann welcomed us to Brie Brie shortly after our arrival at the property. Ross then led us around to the first of 3 stops in the main block.

Approaching the site we observed many old Rough-barked Manna Gums (*Eucalyptus viminalis* ssp. *cygnetensis*) near the homestead area. Some of the old trees further away in the paddocks may have been River Red Gums (*Eucalyptus camaldulensis*) but none were identified in the two Scrubby Hill blocks.

Our first impression at Site 1 was the dominance of what appears to be a single eucalypt species – Manna Gum – and that of Austral Bracken (*Pteridophyta esculentum*). That is not unlike the vegetation of Mount Napier State Park where the soil has developed on basalt that is only about 36,000 years old.

Manna Gum and Austral Bracken woodland

Looking for wildflowers amongst the bracken

It soon became apparent that there was a much greater diversity of species in this woodland than at Tappoc (Mt Napier). We saw quite a few Silver Banksia (*Banksia marginata*) here and none at Tappoc, but there was a similar paucity of Black Wattle (*Acacia mearnsii*). At both landscapes Manna Gum and Blackwood (*Acacia melanoxylon*) are the major components of the tree vegetation. Unlike at Tappoc, Ross showed us one small area (Site 4) where a second eucalypt species, Messmate Stringybark (*Eucalyptus obliqua*), can be seen and is prominent there.

Bracken dominance is a characteristic of some ecological vegetation classes (EVC), particularly those with sandy or 'new' volcanic soils. Often, repeated fires induce that dominance but we saw no evidence of that at Brie Brie. The fires of 1939 and 1944, if they affected Brie Brie, may have had an impact here on the flora. A fire near Lovatdale Lane in the 1980s (?) might have impinged upon this area too – if so that may have been the most recent fire.

We do not know what this woodland looked like and how it was managed in the early days. It was unlikely to have been fenced and livestock would have had access to it, at least until 'wire fencing' became available in about 1850 [Rod Bird (2011) *The Hamilton region of south-western Victoria: an historical perspective of landscape, settlement and impacts on Aborigine occupants, flora and fauna*]. Fencing was expensive and not widely adopted until the 1870s. The Murray family acquired the property in 1873 and it is likely that any substantial internal fencing was done by them in later years.

Apart from sheep, cattle and horses, rabbits arrived in the Hamilton area by 1890 and were a severe problem through the 1930s to the introduction of Myxomatosis in the 1950s and Calicivirus in the 1980s. One can imagine that rabbits would have loved the sandy terrain at Scrubby Hill! Their grazing preferences would have had an impact on many species, some probably no longer present and others (including Austral Bracken) enhanced by selective grazing of preferred competing species.

Tiger Orchid

Smooth Parrot-pea

Pink Fingers

Tiny Caladenia

Small Gnat Orchid leaves

Large Mosquito Orchid leaf

Stop 1. The first orchid we saw was a multi-flowered Tiger Orchid (*Diuris sulphurea*), growing on the fence line near the gate into the Scrubby Hill reserve. We did not see many more but, as we followed wallaby or kangaroo trails through the bracken, we found Pink Fingers (*Caladenia carnea*), Tiny Caladenia (*Caladenia pusilla*), Salmon Sun-orchid (*Thelymitra rubra*), Slender Sun-orchid (*T. pauciflora*), a large Sun-orchid (flower not open, possibly *T. holmesii*), masses of Small Gnat Orchid (*Cyrtostylis reniformis*), Nodding Greenhood (*Pterostylis nutans*) and a few Large Mosquito Orchids (*Acianthus exsertus*). The latter has a heart-shaped basal leaf with a purplish underside. We did not see many of the orchids noted by other observers in earlier times (see Appendix 2).

Many other species of flora were noted (see Appendix 2 for botanic names), including Common Rice-flower, Smooth Parrot-pea, Rough Bedstraw, Common Lagenophora (a small daisy), Dwarf Mat-rush, Variable Groundsel, Yellow Penny-wort, Hidden Violet, Tiny Violet, Austral Indigo, Austral Trefoil, Common Rice-flower and Fringed Brachyloma. The latter heath species was a major groundcover.

Common Lagenophora

Silky Guinea-flower

Dwarf Mat-rush

Common Rice-flower

Variable Groundsel

Yellow Penny-wort

At this stop we walked up the slope to a clearing. We saw several Blackwood and a couple of Silver Banksia among the Manna Gum there.

We had expected to see Drooping Sheoak (*Allocasuarina verticillata*), Sweet Bursaria (*Bursaria spinosa*) and perhaps Cherry Ballart (*Exocarpos cuppressiformis*) but none were apparent there, or on our limited search elsewhere.

Stop 2. The vegetation here, particularly near the edge, was much different from that at Stop 1.

Open area on a rise

This site was less sandy and more exposed to the weather. There was much less Austral Bracken (scarcely any near the edge), more grass and more bare ground. On the plus side, some species not seen

earlier included Dwarf Bush-pea, Heath Tea-tree, Flame Heath, Silky Guinea-flower, Bent Goodenia, Sheep's Burr, Common Everlasting, Blue Pincushion, Magenta Stork's-bill, Bulbine Lily, Milkmaid, Common Raspwort, Grassland Wood-sorrel, Wallaby Grass, Austral Grass-tree and Clover Glycine. The latter species is officially regarded as rare. Love Creeper (*Comesperma volubile*) may also be present.

Clover Glycine

Chocolate Lily

Bent Goodenia

Flame Heath

Dwarf Bush-pea

Ross with Dwarf Bush-pea

Dwarf Bush-pea

Austral Grass-trees & bush-peas

Hidden Violet

Dwarf Bush-pea colour variant

Austral Trefoil

The Bush-peas (including Smooth Parrot-pea seen earlier) and Flame Heath were very showy.

There were at least a dozen healthy Silver Banksia in that area – this is a significant remnant for the district. This species was once widespread and common across the plains and hills of Western Victoria but is now uncommon, found mainly in a few places on railway lines. The *Friends of the Forgotten Woodlands* are striving to replace the species, from seed collected from the remnants, before that genetic diversity is lost. HFNC has been involved with that work, particularly at Yatchaw and Kanawalla.

We found a few African Weed Orchids (*Disa bracteata*) here and pulled them up.

Stop 3. The most obvious 'new' species was Hedge Wattle (*Acacia paradoxa*). This tall, prickly shrub seems to be proliferating at this site – as it has done at the Wannon Flora Reserve, Fulham Streamside Reserve and many other places – it may become a dense thicket in years to come. That can be unfortunate because it suppresses almost everything else. It does not need fire for its seeds to germinate.

Other species seen here were a tall specimen of *Senecio* and Blue Squil. There were several Black Wattle near the edge and Manna Gum as the only eucalypt, although it is possible that the Scentbark (*E. aromaphloia*) could also be present. We looked in vain for the Slaty Helmet Orchid (*Corybas incurvus*), Dwarf Greenhood (*Pterostylis nana*) and Maroonhood (*P. peduculata*) Ross had photographed last year.

We returned to the shearing quarters to have lunch, just as another shower of rain arrived. Apart from damp trouser legs and boots we had managed the conditions quite well. Luckily there was little breeze.

Site 4. Ross took us back to the Scrubby Hill to look at trees on the east side. Stock (and kangaroos, wallabies and deer) have open access to this block but probably the cattle and sheep do not penetrate far.

The main point of interest here were some tall trees that had a stringy bark on trunk and lower parts of the branches. Upon inspection of leaves, capsules and buds it was apparent that the trees were not Brown Stringybark (*E. baxteri*) but Messmate Stringybark (*E. obliqua*).

Messmate Stringybark

The photo shows the details. Brown Stringybark has much squatter, wider, urn-shaped capsules. Note also the oblique junction of the lower part of the leaf to the petiole – the reason for the naming.

Messmate on the edge of this block

Buds, capsules & leaves of Messmate

Ross pointed out trunks of trees that had been rubbed by feral deer. That can be a problem in some areas where there are tree or shrub species easily damaged or destroyed by such action. It may be unlikely here. Lou mentioned seeing 20 deer and the population may expand quite rapidly from now.

The occurrence here of this outlier eucalypt species is interesting (fringing on G395 Bushy Creek Granodiorite or Nxs siliceous sands?) – are there more Messmate trees in other parts of the block? Are there remnants of this species on areas that are truly G395 or Nxs geology?

We found the Ivy-leafed Violet here – we probably missed it earlier – and a tall *Senecio* sp. The garden weed called Cleavers (*Galium aparine*) and Yorkshire Fog-grass (*Holcus lanatus*) were also found. Cleavers can, at least in areas such as Tappoc and small reserves such as the Nigretta Flora Reserve and our Kanawalla Rail Flora Reserve, dominate almost everything small (except Austral Bracken). The burs are carried into the bush on the hair, wool or fur of animals. It usually gets its start from garden rubbish dumped in the bush.

Fire history is of interest, as the frequency, severity and extent (mosaic or total) influence the abundance of various species of plants and animals. Each species has a particular preference. This patch of bush is an island in an agricultural landscape that permits little natural reintroduction of native species that may be lost there as a result of unfavourable fire events. We do not know what has disappeared from this landscape over the last 183 years, or how the bush was 'managed' before settlement in 1840. Surely fire was as important as grazing. Introducing fire to germinate species (e.g. wattles, bush-peas and other hard-seeded genera) or promote flowering (e.g. some orchids), is tricky and time-consuming. It involves making firebreaks (destroying vegetation and allowing weeds to enter) and the loss by fire of some old, hollow trees that are essential for a hundred or more species of wildlife (birds, mammals, reptiles).

Returning to the homestead area we were fortunate to see Lou and thank her for the opportunity we had to look at this important bush reserve.

Ross led us out to Bundooran Lane via 2 major constructed wetlands on Brie Brie. Wendy was busy recording birds there (see Appendix 1). We stopped at the first wetland but rain intervened and made observation and photography too difficult. There were 3 odd-looking birds that defied identification – tall, grey-backed and creamy-fronted – standing on the far shore. They appeared to be like greatly oversized White-necked Herons!

A list of native flora was made for Scrubby Hill (see Appendix 2), although this is far from complete as only a few sites were seen and visits in more than one season and year also have to be made to get a complete picture. We have also noted the orchid species recorded by Dave Munro and others in October 2000 and by Ross Simpson in 2022.

We saw extensive diggings of Short-beaked Echidna (*Tachyglossus aculeatis*) and the runs in the bracken of kangaroos/wallabies. Ross informed us that there are Eastern Grey Kangaroo (*Macropus giganteus*), Red-necked Wallaby (*Macropus rufogriseus*) and Black Wallaby (*Wallabia bicolor*) present. Sugar Gliders (*Petaurus breviceps*) and Common Brush-tailed Possum (*Trichosurus vulpecula*) would be expected here, along with Koala (*Phascolarctos cinereus*) but the latter has not been observed by Ross.

Clearly, this woodland reserve on Brie Brie is of exceptional interest. A student with botanical expertise could undertake a Masters Degree on this resource. That would provide a comprehensive list of species. An associated background search of literature might provide a history of fire and management, sufficient to allow an interpretation of the changes in vegetation that are likely to have occurred over time. That would be a significant result – something that is probably impossible to do in other areas of Victoria.

Appendix 1: Birds recorded by Wendy & Peter McDonald at Brie Brie on 22 October 2023

Common Name
Australian Magpie
Australian Pipit
Australian Shelduck
Australian White Ibis
Australian Wood Duck
Black-shouldered Kite
Common Blackbird
Common Starling
Crimson Rosella
Eastern Rosella
Eurasian Coot
European Goldfinch
Galah
Grey Fantail
Grey Shrike-thrush
Grey Teal
Hardhead
Hoary-headed Grebe
House Sparrow
Laughing Kookaburra
Little Pied Cormorant
Little Raven
Long-billed Corella
Masked Lapwing
New Holland Honeyeater
Pacific Black Duck
Pied Currawong
Red Wattlebird
Red-browed Finch
Red-rumped Parrot
Royal Spoonbill
Shining Bronze-cuckoo
Straw-necked Ibis
Striated Pardalote
Sulphur-crested Cockatoo
Superb Fairy-wren
Tree Martin
Wedge-tailed Eagle
White-faced Heron
White-naped Honeyeater
White-necked Heron
White-throated Treecreeper

Appendix 2: Native flora recorded on Scrubby Hill on 22 October 2023 and earlier

		Species first recorded Oct 2023				2022	2000
Common name	**Botanic name**	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**RS**	**DM**
Blackwood	*Acacia melanoxylon*	*					
Hedge Wattle	*Acacia paradoxa*			*			
Sheep's Burr	*Acaena echinata*		*				
Large Mosquito Orchid	*Acianthus exsertus*	*					
Silver Banksia	*Banksia marginata*	*					
Fringed Brachyloma	*Brachyloma ciliatum*	*					
Blue Pincushion	*Brunonia australis*		*				
Bulbine Lily	*Bulbine bulbosa*		*				
Milkmaid	*Burchardia umbellata*		*				
Pink Fingers	*Caladenia carnea*	*					#
Musky Caladenia	*Caladenia moschata*						+
Ornate Fingers	*Caladenia ornata*						#
Tiny Caladenia	*Caladenia pusilla*	*					
A Spider Orchid	*Caladenia* sp. aff. *calcicola*						#≠
Eastern Mantis Orchid	*Caladenia tentaculata*						+
Purple Beard Orchid	*Calochilus robertsonii*						#
Blue Squil	*Chamaescilla corymbosa*			*			
Common Everlasting	*Chrysocephalum apiculatum*		*				
Slaty Helmet Orchid	*Corybas incurvus*					*	
Small Gnat Orchid	*Cyrtostylis reniformis*	*					#
Smooth Parrot-pea	*Dillwynia glaberrima*	*					
Leopard Orchid	*Diuris curvifolia*						#
Eastern Donkey Orchid	*Diuris orientis*						+
Tiger/Hornet Orchid	*Diuris sulphurea*	*					
Messmate Stringybark	*Eucalyptus obliqua*				*		
Rough-barked Manna Gum	*Eucalyptus viminalis*	*					
Rough Bedstraw	*Galium gaudichaudii*	*					
Clover Glycine	*Glycine latrobeana*		*				
Common Raspwort	*Gonocarpus tetragynus*		*				
Bent Goodenia	*Goodenia geniculata*		*				
Silky Guinea-flower	*Hibbertia seracea*		*				
Yellow Penny-wort	*Hydrocotyle foveolata*	*					
Austral Indigo	*Indigofera australis*	*					
Common Lagenophora	*Lagenophora stipitata*	*					
Heath Tea-tree	*Leptospermum myrsinoides*		*				
Dwarf Mat-rush	*Lomandra nana*	*					
Austral Trefoil	*Lotus australis*	*					
Grassland Wood-sorrel	*Oxalis perennans*		*				
Magenta Stork's Bill	*Pelargonium rodneyanum*		*				
Common Rice-flower	*Pimelea humilis*	*					
Nodding Greenhood	*Pterostylis nutans*	*					#
Dwarf Greenhood	*Pterostylus nana*					*	#
Maroonhood	*Pterostylus pedunculata*					*	
Dwarf Bush-pea	*Pultenaea humilis*		*				
Wallaby Grass	*Rytidosperma* sp.		*				
Variable Groundsel	*Senecio pinnatifolius*	*					
Fireweed	*Senecio* sp.			*			
Flame Heath	*Stenanthera conostephioides*		*				
Sun-orchid sp.	*Thelymitra holmesii ?*	*					
Slender Sun-orchid	*Thelymitra pauciflora*	*					
Salmon Sun-orchid	*Thelymitra rubra*	*					
Hidden Violet	*Viola cleistogamoides*	*					
Ivy-leafed Violet	*Viola hederaceae*				*		
Tiny Violet	*Viola sieberiana*	*					
Austral Grass-tree	*Xanthorrhoea australis*		*				

Records from a visit by Dave Munro and others on 15 Oct. 2000 ≠ identified by Gary Backhouse
+ Visit by Dave Munro, Sally & Angus Jackson and Andrew Pritchard on 17 Oct 2000