FPA
FOREST PRACTICES AUTHORITY

Forest Practices News - September 2009 Vol. 9 no 4 ISSN 1441–1288

Contents

All photographs by the Forest Practices Authority, unless otherwise stated.

Brown guineaflower (*Hibbertia rufa*) re-discovered after 116 years in the wilderness

Mark Wapstra, Environmental Consulting Options Tasmania (ECOtas)
Roy Skabo, amateur botanist
Brian French, Environmental Consulting Options Tasmania (ECOtas)

In December 2008 *Hibbertia rufa* joined the ranks of Tasmania's presumed extinct species that have been rediscovered after many years lost in the wilderness. Roy Skabo, a part-time resident of Binalong Bay with a keen interest in botany, visited a wet heathland in the Doctors Peak Forest Reserve and came across a species previously unknown to him. A sprig with photos sent to the Tasmanian Herbarium and to Australia's *Hibbertia* expert at the Adelaide Botanic Gardens confirmed the initial identification: *Hibbertia rufa* had been found again!

Hibbertia rufa's common name is 'brown guineaflower', which alludes to the reddish-brown stems (Figure 1). The name guineaflower is usually applied to species of *Hibbertia* having large, bright yellow flowers, like the old British gold coin. The flowers of *Hibbertia rufa* are actually quite small and inconspicuous and, unlike the petals on most species of *Hibbertia*, the petals stay attached when the flowering stem is collected, rather than falling off and scattering through the collecting bag (the botanical readership will understand this very annoying habit of *Hibbertia*!).

Figure 1. Open flower of Hibbertia rufa *showing the small petals, the small number of stamens and the distinctive tuft of hairs at the acute to obtuse leaf apex. Note that this specimen does not show the usual characteristic reddish-brown branchlet colouration (photograph by R Skabo).*

Trim 2010/127043

Banner photograph: FPA staff discuss the effects of fire on biodiversity values within a streamside reserve.

Hibbertia rufa (brown guineaflower) re-discovered after 116 years in the wilderness

Hibbertia rufa has only been recorded on one previous occasion in Tasmania – this was in 1892 by W. Fitzgerald, also from the St Helens-Georges Bay area. Specimens are held at the Tasmanian Herbarium with duplicates at the National Herbarium of Victoria. The specimens are annotated 'George Bay' and 'St. Helens, Tasm', respectively. The precise location and the route of Fitzgerald's botanical forays are not known, although we do know he lived for two or three years in the St Helens area. It is likely that 'George Bay' referred to a relatively large area of coastal and near-coastal hinterlands in and around the modern town of St Helens and the bay now known as Georges Bay, the outfall of the George River. Most of the environs of Georges Bay have been substantially modified since 1892 and it is impossible to know precisely where Fitzgerald collected his specimens.

Hibbertia rufa is presently listed as extinct on the *Tasmanian Threatened Species Protection Act 1995*. A re-assessment of its formal conservation status has been undertaken and it is likely that the species will be re-listed as rare (lowest threat status), oddly (for a previously presumed extinct species) bypassing the endangered and vulnerable categories.

Rediscovering *Hibbertia rufa*

NRM North funded a project to determine the wider distribution and habitat requirements of *Hibbertia rufa* in the St Helens-Ansons Bay area. We spent many pleasant days wandering through buttongrass moorland and wet heathland looking for the species. We found it to be relatively widespread between Priory and Thomas Creek (Figure 2), often occurring in massive numbers over tens to hundreds of square metres. A polygon encompassing all positive sites indicates a minimum extent of occurrence of about 53 km^2, a substantial area for a species that was presumed to be extinct!

As part of the project, we surveyed approximately 85 'wet heathland' sites: 27 were positive for *Hibbertia rufa*. We targeted wet heathland patches because the species was re-discovered in such habitat (Figure 3).

Hibbertia rufa occurs mainly in wet heathland but also extends through to buttongrass moorland and occasionally sedgy-scrubby *Eucalyptus ovata–E. amygdalina* forest/woodland. It is almost wholly restricted to very gentle slopes in the low-lying parts of wet heathlands (Figure 3). Most *Hibbertia rufa* sites occur in classic north-eastern Tasmanian wet heathland dominated by low sclerophyllous shrubs with a dense ground layer of sedges and rushes (Cyperaceae/Restionaceae species). *Hibbertia rufa* rarely extends into sites that would be considered as dry heathland, but it can occur in the transition zone between classic wet heathland and adjacent dry heathland/heathy woodland. Most wet heathland sites are topographically and vegetatively distinct from surrounding vegetation, which is usually open heathy/shrubby *Eucalyptus amygdalina* (occasionally *Eucalyptus sieberi*) forest/woodland. *Hibbertia rufa* rarely occurs in the wettest parts of a wet heathland, instead usually occurring several metres from the dense shrubby vegetation that often characterises the most poorly-drained areas. Because the adjacent open forest is usually close to the drainage depression, *Hibbertia rufa* often occupies a narrow band of wet heathland.

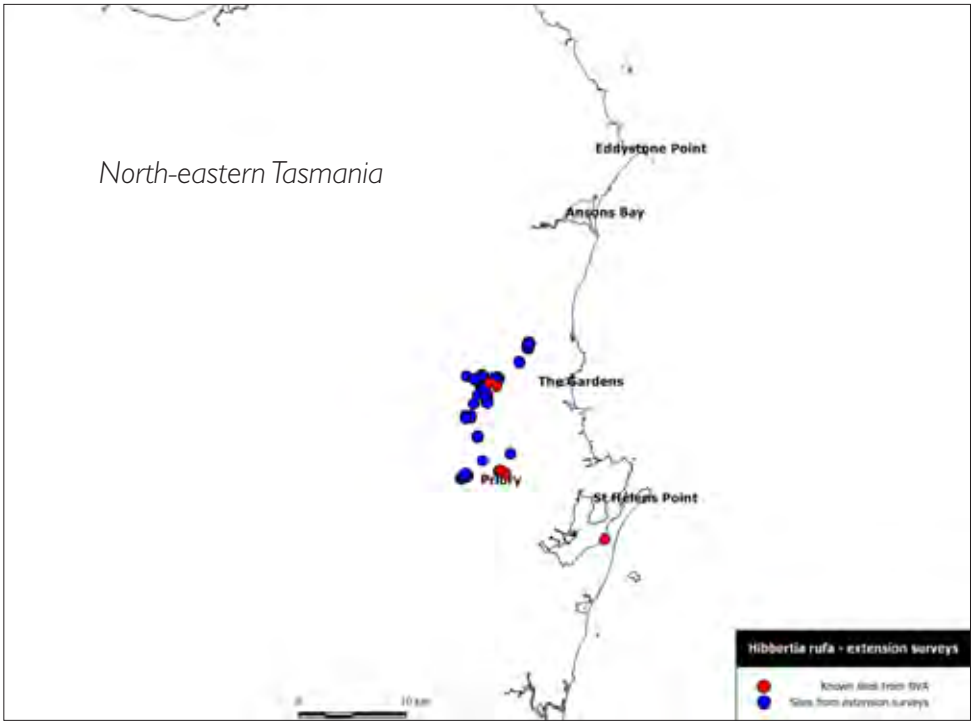


Figure 2. Distribution of Hibbertia rufa. Note that the NVA record from the St Helens Point area is indicated for the sake of completeness only (it is the 1892 record and appears in databases with very low precision).

Despite a relatively restricted distribution, *Hibbertia rufa* is relatively well reserved. Many of the identified subpopulations are within the Doctors Peak Forest Reserve, and part of a large subpopulation also occurs within the Bells Marsh Forest Reserve. Several populations occur on State forest, with most sites already provided protection through Forestry Tasmania's Management Decision Classification (MDC) land-use planning system. Virtually all sites on State forest occur in vegetation types usually excluded from forestry activities and coded as 'protection', 'non-commercial' or some other non-forestry land use.

Rediscoveries of species presumed to be extinct are often welcomed with surprise and excitement and the rediscovery of *Hibbertia rufa* was no different (even attracting the attention of the Tasmanian media). Often such rediscoveries are followed by extension surveys and the species in question is found to be locally restricted, this explaining why we didn't re-discover the species earlier. In light of the present surveys it is clear that we are not dealing with a particularly 'uncommon' species. We have a species that occurs at several sites and is often locally abundant and widespread. Nor can we use the excuse that the species occurs in a remote location or is restricted to private property and is therefore difficult to access. Virtually all sites supporting *Hibbertia rufa* are readily accessed from public roads and occur on

Figure 3. The site of re-discovery! The foreground is typical open well-drained heathy Eucalyptus amygdalina *woodland that supports* Hibbertia acicularis. *The middle ground between the people and the denser buttongrass drainage line is relatively open wet heathland supporting* Hibbertia rufa *(Photograph by J Skabo).*

public land: some sites are literally on road and track margins. And it is quite a distinctive species, easily detected once you have your 'eye in', and difficult to confuse with other wet heathland species.

So how did we miss it? Did we simply overlook it in our surveys of sites now known to support it? Or did we just look in the wrong spots? Perhaps these questions are best left unanswered, and we should simply swallow our pride and take the next steps! So what are the next steps?

Where to from here?

We have identified limited direct threats to the conservation of *Hibbertia rufa*. Potential threats include inappropriate fire regimes, grazing pressure, competition with weeds, risk of disease, disturbance to wet heathland habitat from adjacent activities and from road construction/maintenance, and clearing of habitat. Land clearing has probably reduced the area occupied by *Hibbertia rufa*, although to test this supposition we would need to survey some areas of private property, which were not sampled as part of our project.

The three of us are now sufficiently hooked that any remaining wet heathland sites in the possible range of the species will be visited in coming months. We expect that some gaps will be filled but that significant range extensions won't be made because our initial surveys have already tried to find the outer edges of the species' distribution.

More exciting, however, is that Forestry Tasmania (the main agency with responsibility for sites occupied by *Hibbertia rufa*), has responded quickly and positively to the news. Mark Wapstra met with planners from Forestry Tasmania and their planning maps will now display a potential range boundary map. Special Management Zones have been placed over mapped populations, which will provide an early alert system to forest planners. A field day is being planned for November this year to discuss management with land managers, forest planners and conservation managers. And lastly, it is hoped that some laboratory testing of the susceptibility of the species to the root-rot pathogen *Phytophthora cinnamomi* will be undertaken (field evidence suggests that this species is not susceptible, but other species of *Hibbertia* are highly susceptible).

For those wanting to read more about this exciting find, a report is available from NRM North or the author (via a web site login): *Extension surveys for* Hibbertia rufa *(brown guineaflower) in north-eastern Tasmania, report to the Northern Tasmanian Natural Resource Management Association Inc. by Environmental Consulting Options Tasmania (ECOtas), 1 June 2009.* And for forest planners in the northeast, watch out for information on the upcoming field day.

Authors' contacts:

Mark Wapstra: mark@ecotas.com.au

Roy Skabo: rlskabo@gmail.com

The authors (from left): Mark Wapstra, Roy Skabo and Brian French.

It's time to see what's going on with Tasmanian bats – a new PhD project

Lisa Cawthen, PhD Candidate, School of Zoology, University of Tasmania and CRC for Forestry, Tasmania.

*Lisa, has been working for the FPA researching possum den use in logged and unlogged forest (*see Forest Practices News *September 2008), but has now turned her attention to researching bats. Her PhD is supervised by Sarah Munks of the FPA, and university academics Stewart Nicol and Hamish McCallum.*

This large forest bat (Vespadelus darlingtoni) weighed 6 grams and was captured at Warra in southern Tasmania. This is considered a common species, occurring in most habitat types throughout Tasmania and mainland Australia. (photograph by Lisa Cawthen)

Bats have been largely overlooked in monitoring and research in Tasmania, where all eight species of bat are insectivorous and forest-dwelling (i.e. they don't regularly use caves). A look at the literature and government reports shows that there is very little information on the current distribution, abundance, ecology and conservation status of Tasmania's bats, one of which – the Tasmanian long-eared bat (*Nyctophilus sherrini*) – is endemic.

Given bats' reliance on tree hollows for roosting and breeding sites, it is thought that bat populations are likely to decline if large tracts of mature forest are cleared or converted to regrowth or plantation. My project is going to use bat call surveys and trapping to explore how Tasmanian bats use different types of forest remnants, ranging from isolated trees and small patches (wildlife habitat clumps) to larger patches at the local scale. One of the questions I will focus on is how the availability of mature forest affects bats' use of forest remnants, and then species composition and demographics at the landscape scale.

As there is no bat call identification key for Tasmanian bat species, I will develop a key by working with previous and current Tasmanian bat researchers. I hope that the results of this study will contribute to better bat management, will lead to a greater understanding of the distribution, ecology and conservation status of Tasmanian bats and will promote future bat work in Tasmania.

*Tasmania's smallest bat – the little forest bat (*Vespadelus vulturnis*) weighing in at 3g. (photograph by Lisa Cawthen)*

This project is supported by the CRC for Forestry, University of Tasmania, Holsworth Wildlife Research Trust, the Forest Practices Authority, Forestry Tasmania, Wildlife Preservation Society of Australia, M.A. Ingram Trust and the Ecological Society of Australia.

I begin field work very soon. If you would like to volunteer to help me trap bats for an evening, night, weekend or longer, please visit the project's website http://tassiebatproject.jimdo.com for dates and locations. Likewise, if you have any ideas, potential sites, equipment (bat detectors or large harp traps), know of bat bat hot-spots, or just want to say hello, please e-mail me at lcawthen@utas.edu.au.

Update on the review of the *Forest Practices Code*

Graham Wilkinson, Chief Forest Practices Officer, Forest Practices Authority

Reviewing the *Forest Practices Code* after 22 years of operation is a bit like moving house after living there for 22 years. You want to upgrade and find something that will serve your requirements into the future but there is always the decision about what to take with you and what to leave behind. What are the improvements that you want and can you afford them? What impact will the social and regulatory environments have on your decisions and budget?

In general, changing houses should not be rushed. It is an opportunity to make great improvements in lifestyle; it can also be fraught with uncertainty, stress and aggravation. Likewise with updating the code. It has served us well but the world has changed and it will continue to change. Our next code, the fourth edition, needs to be at the forefront of the changes in knowledge and attitudes. It will need to be forward looking; there is no future in trying to codify the past.

So how are we going with the changes to the code? Here is an update so far:

1. Various technical reviews have been undertaken in recent years to 'prepare the ground' for improvements in key areas such as smoke management, research and the use of chemicals. These reviews have been supported by the Forest Practices Advisory Council (FPAC).
2. A major review of the biodiversity provisions of the code has been completed by an independent expert panel (Brown et al. 2009) – a copy of this report is publicly available from our website. This report is being used by FPAC to identify specific improvements that can be incorporated into a revised code.
3. A working group, comprising Forest Practices Officers (FPOs) and other experts, is preparing a draft revised code. This work is being assisted by consultant Gary King and staff of the FPA.
4. The current plan is to break the code into two documents. The first will be a combined planning and operational manual designed primarily for FPOs and other forest planners. The second will be an operational manual designed primarily for forest operators and landowners.
5. Forums for FPOs will be held around the state in the week commencing 26 October 2009. These will provide an opportunity for FPOs to put forward their views on any changes to the code. Further details will be sent out to FPOs separately.
6. The working group will incorporate ideas and comments from the FPO forums into the draft revised code and this will be forwarded to FPAC by early 2010. FPAC is an important body in this process as it represents all of the major stakeholders. It will provide advice to the board of the FPA on the views of stakeholders with respect to any proposed changes to the code.
7. The draft revised code will be released for public comment. Submissions will be considered by FPAC in drawing up its advice to the board of the FPA on the final composition of the code.
8. Once the above process has been completed, the board of the FPA has the statutory responsibility for finalising and releasing the new code. We should have a new code in place by late 2010. Prior to its release, the FPA will conduct briefings for all FPOs and other interested parties.

The FPA looks forward to the involvement of all stakeholders in the development of the new code. You don't necessarily have to wait until an opportunity for input presents itself as outlined above – the FPA welcomes submissions or comments on the code at any time. Our challenge, as always, is to formulate a code that provides practical guidelines for sustaining the environmental, social and economic values of our forests. We want your input!

Author's contact:

Graham.Wilkinson@fpa.tas.gov.au

Streamside reserves, such as the one in the centre of this plantation, have played an important role in the Forest Practices Code.

Revegetation proceeding well in Mathinna plantations

Peter McIntosh, Manager, Earth Sciences Program, Forest Practices Authority
Chris Ringk, Area Forester, Timberlands

Following intense rainfall in 2004 and 2007, some streams in the Mathinna plantation area, managed at that time by Rayonier, and presently by Timberlands Pacific, were found to have eroded badly. All the erosion occurred in areas of pines that had been planted in the late 1960s through to the early 1980s, before the introduction of the *Forest Practices Code* and without regard for streamside reserves. The erosion highlighted the environmental impact that can occur through the clearing and planting of stream zones and steep areas. The damage prompted the Forest Practices Authority and Timberlands staff to investigate how the errors of the past might be addressed in order to reduce the risk of erosion when the next (second) rotation is harvested in about 30 years' time.

Timberlands staff, with the assistance of the FPA, have developed a catchment-scale management plan for the area – *The Fingal Management Strategy*. A key element of the plan is to plant all riparian areas, including those of headwater (Class 4) streams, with native vegetation. In addition, areas where native vegetation would be allowed to regenerate naturally were defined on some slopes, and especially on ridgelines, with the intention of producing a mosaic of different forest types in the landscape. By varying planting dates it was also hoped that the original even-aged pine plantation could be converted into a mixed-age forest, which will not only add to landscape variety but, together with the intervening native forest areas, will decrease the risk of windthrow in future harvests.

The riparian revegetation plan was difficult to implement because of dry winters and preferential browsing of seedlings by mammals. Wetter conditions this winter, and the use of 'socks' for browsing control, have improved current planting successes; earlier plantings and aerial sowings are now showing signs of successful establishment.

Apart from having a direct effect on stream stabilisation, through their effect on stabilising banks, the riparian trees and the intended mosaic of different-aged trees should have the indirect effect of reducing the amount of increased runoff that inevitably happens after harvest.

Author's contact:

Peter.McIntosh@fpa.tas.gov.au

A planting contractor with a load of eucalypt seedlings for restocking riparian areas.

In every gully visible on this photograph (taken near the Griffin Road picnic area) hand planting of streamside reserves has occurred, both on hilly slopes as illustrated in the foreground and on the steep shady slopes on the right of the photograph. The plastic netting socks protect the young trees from browsing.

Revegetation proceeding well in Mathinna plantations

Planted eucalypts (arrowed) in the riparian zone of a Class2 tributary of Merry Creek near Mathinna. Achieving success by planting without burning is difficult because of browsing, competition from native vegetation (particularly bracken) and competition from wilding pines. At this location most wildings have been hand-pulled to reduce competition with planted eucalypts. The minimum density of one eucalypt every 10 m has been achieved, and over time the riparian area should be dominated by eucalypts.

In the upper catchment of Oxford Creek an arson-originated fire made the revegetation plan much easier – sites could be aerially oversown with seed to achieve a much higher density of native trees than could be achieved by planting. Here a dense forest of wattles interspersed with eucalypts and a few pines has established itself three years after the fire. Future harvest of the surrounding pines (seen on the skyline) will leave this riparian forest largely undisturbed.

Editors' corner

We hope that many readers will enter the first ever *Forest Practices News*' photograph competition – see page 14. We suspect that many of you working regularly in the forest will have great photographs tucked away, waiting for just such an occasion to show them off. Don't be shy!

Forest Practices News aims to publish material that you, the reader, find relevant, useful and inspiring. For this issue, we emailed an appeal to all FPOs to write in about some of their experiences. Richard Shoobridge responded with a great article on alternative methods for plantation establishment. The forest practices system is based on adaptive management and we are always keen to document these adaptations. If you are working on developing a new approach that you would like to share, please get in touch and we will work with you on writing an article.

We are also keen to publish case studies of challenging coupes which show the forest practices system in action. Or you may have another great idea to include in the next issue. So, please get in touch!

If you would like to send in a contribution to *Forest Practices News*, please contact the editors. Include illustrations and a photo of yourself with your contributions. Contributions can be supplied either as hard copy or electronically. If forwarding material electronically, please ensure that figures/pictures are sent as separate files and not embedded in Word documents. Our address is: Chris.Grove@fpa.tas.gov.au

Chris Grove and Peter McIntosh
Forest Practices News Editors

Deadline for contributions to next *Forest Practices News*: Monday 16 November 2009

Introducing the new members of the board of the Forest Practices Authority

Interviews by Chris Grove, Publications Officer, Forest Practices Authority

Last financial year saw many changes to the membership of the board of the FPA. Geoff Willis, who had been Chair for almost one and a half years, resigned in November 2008 when he became Chair of another organisation. After nine years on the board, Mark Leech resigned in January 2009 to work in California. Penny Wells and Alan Watson both left the board in June 2009 after four years of service. Penny and Alan share their thoughts on the board's recent achievements at the end of this article. Now, meet the new members of the board...

Gordon Duff

Forest Practices News *met up with Gordon shortly after he was appointed as the new Chair of the board of the Forest Practices Authority and had a chat about the professional experience he can bring to the board of the FPA.*

How long have you lived in Tasmania?

I grew up in Ulverstone and did my first degree at UTas in Hobart, but then I moved away from Tasmania for 25 years. I came back in 2006.

Do you have a favourite place in Tasmania?

I think it's probably Mount Field. I love the alpine country and it's amazing that it's so accessible to Hobart.

What did you do before becoming Chair of the FPA's board?

I've worked in research on forest science and natural resource management for most of my career. It's a very rewarding role to work at the interface of science, public policy and sustainable development. I've been the CEO of the Cooperative Research Centre for Forestry since 2006. The CRC for Forestry is an Australia-wide joint-venture supported by the Australian Government, research organisations, state agencies (the FPA is one) and industry. Our role is to support a sustainable and vibrant Australian forestry industry through research, education, communication and collaboration. CRCs are set up to translate research capability into practical outcomes. These could be changed practices in industry or changes in policy or regulatory environments.

> 'It's a very rewarding role to work at the interface of science, public policy and sustainable development.'

Before I returned to Tasmania, I was the CEO of the CRC for Tropical Savannas Management in Darwin where I worked with many different interests – Aboriginal communities, pastoralists, conservation interests, government agencies and mining companies. I gained experience over the years in helping resolve conflicts between groups and recognising common interests.

During this time, I was appointed the first Chair of the Northern Territory Environment Protection Authority. Environmental monitoring and regulation in the NT is carried out by individual government agencies, but there was a growing need for independent overseeing and better coordination. The government wanted to not only do the right thing by environmental protection, but also to create greater public confidence.

The EPA worked with interested groups to develop a model and legislation for the EPA – a small, independent body capable of conducting its own investigations and making recommendations to government. We found that big companies were happy to have a rigorous environmental regulation process provided that there was some certainty about where the goal posts were. I think, broadly speaking, big companies have the same reaction to the forest practices system in Tasmania – it's important to have certainty and clarity about the key elements of the *Forest Practices Code*. I'm still on the NT EPA board, but am no longer chair. – it's still in its formative phase so I want to stay with it for a while longer.

What elements of that experience will be useful in your new role?

A large part of the CRC for Forestry's activity is structured around research which contributes to the social licence for forestry to operate. FPA staff are directly involved in this research. The last two-and-a-half years have been a steep learning curve for me, working out where the greatest research needs and conflicts lie. Through the years I have become familiar with the relationship between research and science and how that translates into policy and regulation.

The NT EPA is a statutory authority with a strategic advisory and watchdog role, similar to the FPA. The experience of chairing the board of the NT EPA has shown me that good governance is about knowing where the board's responsibilities end and the level of involvement required to meet these responsibilities. I've also gained some experience in how best to achieve outcomes in a regulatory environment and the answer is not necessarily more pressure or more resources.

The FPA's board is a skills-based board where people are appointed specifically because of their experience. There is a good collection of experience and knowledge on the board. Being a good chair means making use of the experience on the board – it's not a one-man show.

Introducing the new members of the board of the Forest Practices Authority

What do you see as the strong points of the forest practices system?

In 2007, Yale University and Australian National University researchers produced a paper comparing different forest practices systems around the world[1]. The FPA system came up very strongly in that comparison.

I see the emphasis on self-regulation as a strong point of the forest practices system. Current thinking is that all good regulatory processes are self-regulated, though you obviously need monitoring and checks and balances to make sure that the system is working.

To me, the *Forest Practices Code* is another strength of the system. It is very important that people in the working environment clearly understand what the rules are. They also need confidence about where the goal posts are and what the framework will look like in the future. I think that the FPA carries out consultation and engagement about changes to the system very well, for example in the current review of the code.

> 'People need confidence about where the goal posts are and what the framework will look like in the future.'

The forest practices system is based on adaptive management, which allows for us to continually learn, improve and adapt our practices. A critical part of that is having a good science research base, which the FPA has – there is a strong engagement between the FPA and the CRC for Forestry. It's not a case of generating research and then finding ways to apply that research into practical outcomes. Researchers need to engage with end-users right from the beginning to find out what information is needed and how it is used. Once you have the questions on which to carry out the research, it's not a matter of turning up three years later with the answer – the research has little impact unless there has been engagement between the researchers and the end-users all the way through. That is one of the strengths of the FPA – there are people who are involved in research who also work in the organisational environment where the decisions are made.

However, there is a tension between the adaptive management approach and the need for certainty, especially in the forest industry. One of the things that make people nervous about adaptive management is that the rules might change. You have to allay that nervousness with a good level of consultation and engagement – a two-way dialogue.

> 'Key to this engagement are the Forest Practices Officers.'

My understanding from what I've seen is that the engagement level of the FPA with industry is very good. Key to this engagement are the Forest Practices Officers who are trained by the FPA and have responsibilities to the FPA but are embedded in the forest industry. The FPA board acknowledges the central role the Forest Practices Officers play and we are looking forward to the opportunity to engage with the practitioners and learn more about what they do, how things are going and what the major issues and challenges are for them.

Are there any elements of the forest practices system you would like to see improved?

It's a bit early for me to comment in detail on the forest practices system, but one thing I would like to see is improved public awareness that we do have a good regulatory system in Tasmania. I think the media and the general public rarely acknowledge that the management of public and private forests is regulated by a world's best practice regulatory system and that it is continually improving. I'm certainly prepared to take up opportunities as they arise to engage with the media and get the message across. One of the things that needs to be publicly known is that we have a board which is committed to principles of good corporate governance, transparency and independence. *Forest Practices News* is a very important part of getting this message out.

> 'I think the media and the general public rarely acknowledge that the management of public and private forests is regulated by a world's best practice regulatory system and that it is continually improving.'

What would you like to achieve as Chair of the FPA's board?

The FPA has a key role in ensuring the sustainability of the industry. Our forestry sector is all about sustainably maintaining and even enhancing the range of values that are important in the forest – production, community, biodiversity, aesthetics, water and carbon. I think the board has an important role to play in that big picture. We won't achieve sustainability without good, adaptive regulatory mechanisms, and you don't get those unless the organisation responsible can think and work strategically. In a few years' time, I would want to be looking back and saying 'Yes, we got the strategy right, and the sector is in good shape partly because of the decisions made by the board.' I would like to see a good working relationship between the board and FPA's management team, based on trust and confidence.

Are there any parts of you new role that you are particularly looking forward to?

I am looking forward to learning more about what individuals in the organisation do. There is always a sense of excitement in being involved with organisations whose business is learning and finding out new things.

[1] McDermott, Constance L, Cashore, Benjamin, and Kanowski, Peter, 2007, *A Global Comparison of Forest Practice Policies Using Tasmania as a Constant Case*, Yale University School of Forestry & Environmental Studies Global Institute of Sustainable Forestry <http://research.yale.edu/gisf/publications/index.html>

Introducing the new members of the board of the Forest Practices Authority

Steve Luttrell

Steve Luttrell is the new member of the board of the Forest Practices Authority with applied knowledge and expertise in sustainable forest management on public land.

How long have you lived in Tasmania?

I was born in Tassie and went to school in Hobart. When I left school, I chose forestry as I was looking for a science career that had some practical, outdoor focus. I won a state forestry scholarship to study forestry – the first year was at UTas and the next three years were in Canberra. In the summer holidays I worked for what was the Forestry Commission, now Forestry Tasmania, and I moved back to Tassie when I finished my course.

Do you have a favourite place in Tasmania?

I was District Forest Manager for an area that included the highlands and I came to appreciate the diversity in both the forests and the landscape. I still spend a fair bit of time up there, fishing and looking at what's happening.

What did you do before joining the FPA's board?

After more than 20 years as District Forest Manager, my last role was manager of domestic sawlog and pulpwood sales. I've been doing some project work since I retired.

Some of your experience was obtained well before the Forest Practices Code *was introduced in 1985. What practices were common then that we don't see now because of the code?*

There used to be a lot of mud involved in wet weather logging in those days. This has changed partly because of the requirement to stop operations in very wet conditions and also because of improvements in machinery.

Another major change is the protection of streams. Before the code, streams could be used as snig tracks and when we established plantations we cleared right up to the stream. Fortunately we have moved on from that kind of operation, although stream side reserves have brought operational challenges in that the native forest running through the plantation has different fire management requirements.

What was the initial reaction to the Forest Practices Code*?*

There was a significant consultation during the development of the code, with the opportunity to have input into it. The majority of people could understand the need to move forward. We were starting to consider many of the changes brought about by the code anyway. It wasn't as if the goal posts were entirely moved, it was more that we were trying to take the best practices from around the state and apply them uniformly to bring everyone up to a good standard. The code gave direction to where we needed to head to and what we needed to achieve as a minimum standard. It gave some basis for moving some of the more reluctant people forward as they had to conform to the standards.

What do you see as the strong points in the forest practices system?

One of the keystones of the system is its self-regulatory nature which relies on having FPOs who have a wealth of experience and knowledge and a very strong pride in their work. This is what I think holds the whole system together – without the FPOs it would just fall back to being an enforcement system which would require inspectors trying to pull everyone along. But the FPOs have a hard role as they are answerable to two masters – the FPA and their employers. They have to report breaches which have occurred in their own jurisdiction. However, there is support for their role in the forest industry because the alternative policing system would be far less palatable. I think FPOs have matured with the system and are happy to accept their dual role and the challenges and frustrations that it brings.

'I think FPOs have matured with the system and are happy to accept their dual role and the challenges and frustrations that it brings.'

I admire FPOs as the Forest Practices Plans they prepare these days have so many issues which they need to consider. The complexity is a good thing, but we have got to make sure that we continue to resource the FPOs with the support and information that they need. The training and planning tools provided by the FPA are critically important, but these need to keep pace with changes in the forest practices system.

The continued evolution of the system is another strong point – like any standard these days, it is a process of continuous improvement. The system needs to be able to continue to do this to maintain its credibility; it needs to develop as our knowledge increases and people's expectations rise.

However, the continual improvement of the system can be challenging when dealing with a long-term crop like forestry. Some of the plantations being harvested now were planted pre-code and their re-planting involves major changes. And who knows where the goal posts will be when the plantations being put in now are ready to harvest?

I think that it is important, when managing changes in the forest practices system, to evaluate the impact of the changes on people and businesses. I think that the board and the Forest Practices Advisory Council

have a strong role to play in this – they have the expertise to evaluate the impact of specific changes on various aspects of the forest industry.

Are there any elements of the forest practices system which you would like to see improved?

In my opinion, the spread of plantations is starting to test people's acceptance of forestry. For example, lots of fishermen who have accepted native forestry in the highlands are querying some of the locations of new plantations there. The conversion of native forest to plantations is drawing to a close now as the limited area available for conversion runs out.

There has been pressure to plant farmland rather than convert native forest. However, this can be unpopular too because often the farmland has been cleared for the entire living memory of locals and people have forgotten that it used to be forest. Re-planting the land brings about landscape and community changes which some communities are reluctant to accept.

I'm not saying that there is too much plantation in Tasmania, but I would question a few of the places where plantations have been created. I think that in the rush before conversion stops, some native forest has been converted to plantation which, from a forester's point of view, would have been better managed as native forest.

You've had a wealth of experience. Are there any elements of that experience which you are particularly looking forward to applying in your role on the board?

I think all my forestry experience will be useful, though it will be a steep learning-curve for me as I become familiar with my role on the board and with current strategic issues. I'm really looking forward to the opportunity to contribute something back into the forest practices system. I retired early because I had cancer at 50 but I'm in the clear now. It would have been hard after a lifetime in forestry to switch off – I still feel that I have a lot to offer.

Ian Whyte

Ian Whyte is the new member of the board of the Forest Practices Authority with applied knowledge in sustainable forest management on private land.

Have you always lived in Tasmania?

Far from it! I spent most of my childhood in India, where my parents were missionaries. In fact my interest in forestry stems from that time. I grew up on Rudyard Kipling's stories, and his second Jungle Book has the adult Mowgli working as a forest ranger for a boss who seemed to do little more than ride round on a horse shooting deer that ate tree seedlings. I decided that I wanted a job like that. I finished my schooling in Sydney and went on to do a science and then a forestry degree in Sydney and Canberra, finding very quickly that Kipling is no guide to Australian forestry. Following graduation, I worked for 10 years, through the 1970s, with the national forest service in Papua New Guinea. PNG gained its independence in 1975, so I worked for both a colonial and a national forest service. I met and married a Tasmanian teacher in PNG, and we moved to Tasmania in 1979.

Do you have a favourite place in Tasmania?

The Ragged Jack area on the western slopes of Ben Lomond has many special memories for me. That was where I did a lot of my early field work in Tasmania and where our family used to go camping in an old van we had for the purpose.

What did you do before joining the FPA's board?

When I first came to Tasmania, I joined a company called APPM Forest Products, and stayed with it for 16 years in various roles, first in the north and then in Hobart. In 1996, I left the company to take up the role of Chief Executive with the Forest Industries Association of Tasmania. In 2002, I moved from FIAT to the Tasmanian Farmers and Graziers Association to work on farm related environmental and NRM policy, and from there to semi-retirement in 2008, although remaining a member of the Forest Practices Advisory Council.

What elements of that experience will be useful in your role on the board?

I've been active in private forest land management in Tasmania since 1980 in either a forestry or farming context. When the *Forest Practices Code* came along in 1985, I'd already had five years of operational forestry experience in the state and I've been essentially continuously involved with the development of the forest practices system in one way or other since then. I've also had the opportunity to work in both government and the private sector in my career. I believe I can bring perspectives to the board which are both important and not necessarily that common as a result of this mix of experience.

What do you see as the strengths of the forest practices system?

> 'I see the forest practices system as fundamentally important for forest management in Tasmania ... (because it) underwrites the legitimacy of forest land use in Tasmania ...'

I see the forest practices system as fundamentally important for forest management in Tasmania. It provides a good framework for practitioners, for sustainable management of forest land. It also provides

Introducing the new members of the board of the Forest Practices Authority... and comments from outgoing board members

important reassurance to the community that our forest land is indeed being managed sustainably. Together, these mean the system underwrites the legitimacy of forest land use in Tasmania, for wood production and for other land uses.

A key strength of the system is that it applies equally to public and private land. A tenure neutral system is essential for good land use policy here as Tasmania is the only state where private forests form an important part of the wood resource. Another strength is the design of the system, in particular its emphasis on delegation of important decision-making to FPOs while ensuring accountability in that regard. Very important here is the training and other support that is provided to FPOs. I think our FPOs do an excellent job, because they are well trained and supported but also because they are given authority and respect.

> 'I think our FPOs do an excellent job, because they are well trained and supported but also because they are given authority and respect.'

Are there any improvements you would like to see to the system?

The demands on the forest practices system change continuously. The requirements of 10 years ago are not the requirements of today, and in 10 years time they will be different again. For example, 10 years ago the system did not regulate non-forest threatened native vegetation, but now it does. In the circumstances, I think there needs to be an ongoing development of our knowledge base so that measures in the *Forest Practices Code* continue to reflect the best science. It is also important to keep an ongoing eye on the costs of the system to land owners. Our objective should be to achieve excellent environmental outcomes but to do so in the most cost effective way possible.

What are you looking forward to in your new role on the board?

I'm looking forward to bringing to the board a solid understanding of private sector forestry, in both a forest industry and a farming context. A key challenge for the FPA is to keep the allegiance and support of private forest growers for the forest practices system as the system necessarily changes and adapts. I am looking forward to playing a part in that process.

> 'A key challenge for the FPA is to keep the allegiance and support of private forest growers for the forest practices system as the system necessarily changes and adapts.'

... and comments from the outgoing board members

Penny and Alan share a few thoughts on the major achievements during their time on the board.

Alan Watson

From my point of view, the most outstanding achievement of the board during my membership has been the establishment of the Forest Practices Awards.

> '... the most outstanding achievement of the board during my membership has been the establishment of the Forest Practices Awards.'

These provide some recognition of the excellent work being carried out in the forest and in my view were long overdue. Secondly, the progressive review work on the *Forest Practices Code* has been essential in maintaining the currency of the code in the light of updated science and practice. Thirdly, and most recently, the creation of the smoke management system, which has largely been prompted by the CFPO, is a major initiative. This will, with a bit of tweaking, substantially mitigate the smoke problems of the recent past.

My period on the board has strengthened my great respect for the staff of the organisation and the outstanding work that is produced under the exceptional direction of the CFPO.

For the next year or so we will be completing our house renovations, renovating a large garden and travelling this year to north Queensland and next year to France.

Penny Wells

I am now General Manager of the Resource Management and Conservation Division in the new Department of Primary Industries, Parks, Water and Environment. These are very challenging times with a very challenging budget environment! However, despite this change I am excited by our future work program, particularly in the areas of landscape ecology, climate change, private land conservation, and development of tools to assist in threatened species and habitat conservation, biological monitoring, land resource assessment and wildlife management. Our major investments in combating the dual threats of the devil facial tumour disease and the establishment of foxes in Tassie have lead to complex and challenging projects.

I would probably vote for the following as the two greatest achievements of the board during my time:

- improving business and governance processes and improving transparency and consistency in these
- improving investment in key tools for getting better outcomes for forest management.

The development of tools for smoke management has been complex, but is a good example of both of the above.

Author's contact:

Chris.Grove@fpa.tas.gov.au

Book review:
Half a lifetime by Garry Richardson

review by Chris Grove, Publications Officer, Forest Practices Authority

Many *Forest Practices News* readers will have come across Garry Richardson at some stage during his long career (half a lifetime, in fact) with Forestry Tasmania. Garry has taken the unusual step of documenting his work experience in a self-published book. The book starts with Garry's appointment as a Junior Forest Ranger in 1966 at the age of 15 and then systematically describes his career in various places around the state until his retirement in 2005.

Garry's book will be of particular interest to those working in forestry as he has focussed on recording individual personalities, but the book will also be understood by people with no experience in forestry as he takes care to explain technical terms.

Forest Practices News caught up with Garry a few weeks ago and asked him about his book.

What encouraged you to write the book?

It was good therapy after nearly forty years of working in forestry. I initially wrote it up from my diaries just before I retired as I was finding the prospect of leaving that life behind a bit daunting. When I retired,

I started volunteering in the St Helens History Room, a local interpretation centre, and I worked on a couple of other book projects. I was just starting work on a third when I realised that this would be the perfect time to polish off '*Half a lifetime*', while the memories were still fresh. I wanted to document my story and the old methods we used in forestry. The book centres around the characters I came across in my career, as it's the people, the individuals with all their different qualities, which make the forest practices system work.

What do you think about the forest practices system?

When the forest practices system was introduced in 1985, I was a reluctant participant on the first Forest Practices Officer course. We all thought we had enough to do without all this extra work coming in. But I went along to the course and soon got into the swing of it – in fact I say in the book that the *Forest Practices Code* became our bible. We had already been implementing some of the ideas in the code before it came in anyway. I remember that before the code came in, I planned a coupe so that the contractor would not have to cross any of the creeks during harvesting. I went through the plan with him, went off on holiday and came back to find that he had crossed every creek on the block. There was nothing I could do about it as the plan was not a legally enforceable document. That is one of the good things about the forest practices system – the plans are legally enforceable.

How did the contractors react to the system?

One of the hardest things in the early days of the forest practices system was getting it out to the people in the bush – the contractors. I had many an argument trying to convince them that it had to be done this way. I still think that there is not enough training for contractors. Forest Practices Plans are extremely complicated now, but they have to be understood by the contractor for the system to work.

What do you think the future of forestry in Tasmania is?

If we did not have the forest practices system, we wouldn't have a Tasmanian forest industry today. Forestry cops enough flak as it is – without the system it would have been a lot easier for the people that target forestry to stop the industry. I think the system is going in the right direction, but we have to make sure that it does not become too complicated. In Forestry Tasmania's Bass region we had a team working on preparing the prescriptions for the special values in Forest Practices Plans as there was so much to consider. Retired FPOs find it hard to prepare the occasional Forest Practices Plan as the system changes and more training, which we would have to pay for ourselves, is required to keep up to date.

The role that forestry plays in rural communities has changed since I first started working. There used to be forestry staff in many small communities in Tasmania, but now the offices have been centralised and rural residents often don't have a close connection with forestry anymore. We used to be respected and integrated with the community, which helped a lot in our work.

But despite these changes, I still feel optimistic about forestry in Tasmania. We have to have a forest industry because we all use wood and paper products. If we didn't produce them, the products would come from Southeast Asia or some other region where they don't have a system anywhere near as comprehensive as ours.

Author's contact:

grichard@tassie.net.au
or PO Box 135, St Helens, Tas 7216

Garry's book can be bought from most Tasmanian bookshops for around $45 or you can buy a signed copy from Garry for $45, postage free.

Changes to the exemptions for Forest Practices Plans under the Forest Practices Regulations

Graham Wilkinson, CFPO, Forest Practices Authority

The Forest Practices Act 1985 requires a Forest Practices Plan (FPP) to be prepared and certified with respect to any harvesting or clearing of forests or threatened non-forest vegetation. Exemptions to this requirement are prescribed in the Forest Practices Regulations, which are available on the FPA's website <www.fpa.tas.gov.au>.

Most FPOs would know that changes to the Act over the years have captured many 'non-forestry' activities, such as mining and residential subdivisions, where those activities involve clearing of forest or of threatened non-forest vegetation. These developments are covered by planning and approval processes under separate legislation, and the requirement to also obtain an FPP has resulted in significant additional costs and bureaucratic duplication. To provide a more streamlined and integrated planning and approvals process for these 'non-forestry' developments the government has approved their exemption from the requirement to be covered by FPPs.

The new regulations are expected to be gazetted in the near future. The likely exemptions will cover the clearing and conversion of trees and threatened non-forest vegetation for the purposes of mining and mineral exploration and for the construction and maintenance of railways, electricity infrastructure, subdivisions, buildings and associated infrastructure.

The exemptions for FPPs will only apply where the above activities have been approved under the relevant legislation. For example, a person cannot clear land for a sub-division *before* obtaining planning approval from their local council. They will need to have an approved permit under the *Land Use Planning and Approvals Act 1993* before they commence clearing; otherwise the clearing will need to be covered by an FPP.

Further advice will be sent to FPOs once the new regulations have been gazetted.

Author's contact:

Graham.Wilkinson@fpa.tas.gov.au

Forest Practices News photo competition

Now is the time to gain some recognition for all those wonderful photos you have taken over the years, because *Forest Practices News* is holding the first ever forest practices photo competition. The winners will be announced in the December issue.

Who can enter?

Anyone can enter. To eliminate any personal bias, the judges will not know who took the photos that they are considering. This means that even FPA staff can enter!

What kinds of photos can I enter?

You can enter as many photos as you like in any or all of the following categories:

- Working in the forest
- Natural values – flora
- Natural values – fauna
- Natural values – rocks and water
- Cultural values
- Forested landscapes
- Quirky

What format should the photos be in?

The photos must be in electronic format. Please ensure that the images are of high enough resolution to print well – if in doubt, please email Chris.Gove@fpa.tas.gov.

How do I enter my photos?

Please download the electronic form on the news section of the FPA website's home page, fill it in and email it to Chris.Gove@fpa.tas.gov.au, attaching the electronic image(s). Please make sure that the file name matches the name you have entered on the form. Entries must be received by close of business on Friday 6 November 2009. If you do not have internet access, please call Chris Grove on 6216 4455.

What are the conditions of entering the competition?

Entry is free, but the FPA may use your photo in future publications. If this occurs, you will be acknowledged as the image's author.

What are the prizes?

There will be one winner in each category, and one overall winner. The winning photos will be published in a colour supplement of the December issue of *Forest Practices News*.

Who will judge the competition?

The competition will be judged by a three-member panel including the Chair of the board, an FPA staff member and an external judge.

Edge effects and tree fern epiphytes: a college student takes a closer look

Nina Roberts, Scientific Officer, Forest Practices Authority

In 2008, Elizabeth College year 11 student Priya Kitchener completed a research project with the FPA biodiversity program. This project was initiated under CSIRO Education's Student Research Scheme (SRS). The topic Priya investigated was how epiphytes growing on manferns (*Dicksonia antarctica*) in retained aggregates were affected by adjacent logging. She is the third SRS student to undertake a tree-fern related project with FPA over the past few years.

Assisted and supervised by Biodiversity Program staff member Nina Roberts, Priya conducted a day of field work in an aggregated retention coupe (logged in 2005) on State forest in the Styx Valley. The aim of the field work was to collect data on epiphyte health and abundance on manfern trunks at various distances from the forest edge. Transect sampling was carried out, with transects up to 40 m long. Manferns at 10 m intervals along these transects were sampled for epiphytes.

Although the dataset was too small to detect statistically significant trends or to account for the multitude of other environmental variables that influence local epiphyte health and abundance, Priya clearly observed an increase in epiphyte health and abundance with increased distance from the forest edge. This was especially the case for epiphytic ferns, which were almost entirely confined to the sampling points 40 m into the retained forest (i.e. the furthest point from the forest edge). These results can be explained by the fact that tree fern epiphytes are generally moisture-loving mosses, liverworts and ferns (e.g. the delicate filmy ferns) and are largely intolerant of the increased light and decreased moisture associated with an exposed forest edge.

The observations from Priya's study suggest that the depth of edge-effects on epiphytes is at least 30 m, and possibly more. Further data, including deeper sampling points would be needed to confirm this. Site aspect and edge orientation are expected to have a strong bearing on the depth of edge effects, with north facing edges likely have deeper effects due to greater light exposure.

As well as providing an interesting insight into forest ecology and field research methods for Priya, this research project is a useful pilot study for potential future research into this topic. Tree-ferns are known to support a high diversity of epiphytic species, contributing significantly to the overall biodiversity of Tasmanian wet forests. Better understanding of epiphyte habitat preferences and in particular the depth and extent of edge effects may allow improved retention of this component of biodiversity at the coupe level through planning measures such as modifying the size and shape of aggregates.

Author's contact:

Nina.Roberts@fpa.tas.gov.au

Priya carrying out her research, which showed an increase in epiphyte health and abundance with increased distance from the forest edge

Geomorphology 2009, Melbourne: Lichenometry to badlands

Adrian Slee, Geoscientist, Forest Practices Authority

Over the week of the 6–11 July 2009, the 7th International conference on geomorphology was for the first time held south of the equator, at the newly developed Melbourne Convention and Exhibition centre.

The conference theme of 'Ancient landscapes – modern perspectives' summed up the variety of talks and posters presented throughout the conference, and was especially relevant to some of the modern methods of scientific experimentation described during presentations, such as advanced and powerful ground radar and the use of wind tunnels for aeolian studies. Also presented were new ideas on relatively old-fashioned methods, such as the use of lichenometry (the growth rates of lichens on rocks) to date a rapidly retreating glacier in the Andes. This is a technique that could possibly be used for dating land disturbance events like rock topples and landslides in Tasmania.

Over the course of the conference around 460 verbal and numerous poster studies were presented to around 600 delegates. While the number of concurrent sessions resulted in difficult choices on what to attend, several sessions dealing with land management were relevant to Tasmanian geomorphic studies. These include, but were not limited to:

- geomorphosites (geomorphic sites of importance) and geotourism
- land degragation: adaption to climate change
- Quaternary landscape formation and impact on recent processes
- glacial and periglacial geomorphology in a warming world
- aeolian processes and geomorphology.

Other subjects that proved interesting included those related to the dating and/or mapping of geomorphic environments on different scales, and included:

- terrestrial laser scanning within geomorphology
- applied geomorphological mapping
- advances in geochronology.

Some of the interesting presentations included the development of a coastal geomorphic map of Australia, terrace mapping projects in Belgium and New Zealand using geochronology, and a talk on the community management of badland terrain in Taiwan. At the very detailed level was an impressive (and generously financed) study of coastal cliff collapse frequencies using very high resolution terrestrial laser scanning in Great Britain; this left the majority of the audience very jealous of British research funding. I also had a conversation with a British researcher who described a study of a landslide composed of bat guano within a cave in Malaysian Borneo.

I attended three plenary presentations: one by Professor Goudie on deserts; one by Professor Fort on the hazard geomorphology of the greater Himalaya; and a very charismatic presentation by Professor Nott on the negative role lawyers and politicians play in determining land management guidelines – they commonly fly in the face of well developed geomorphic principles. In a hall packed with geomorphologists, it was very well received.

During the karst geomorphology session, I presented a talk on possible future sinkhole management guidelines in areas of agricultural land undergoing plantation development, which was well received.

This was the first major conference I have attended and I found it a motivating and educational experience. It has given me some idea of the level of scientific study undertaken around the globe, as well as introducing me to methods of project identification and development that may be used as models for future work in Tasmania. Tasmania's thick vegetation and undeveloped regions may still hold many geomorphic and climate change secrets.

Author's contact:
Adrian.Slee@fpa.tas.gov.au

Pond in a large sinkhole, Mole Creek Karst (note car bonnet for scale) During the conference, Adrian presented a talk on a new classification of sinkholes. The classification promotes the use of the term 'passive' to describe large sinkholes with well developed bowl depressions and shallow slopes; the term 'active' for sinkholes displaying signs of erosion and/or evidence of water inflow into an underground karst aquifer; and 'connected' for actively collapsing shafts and suffusion sinkholes that may channel surface water directly into karst conduits. This classification may be utilised in future revisions of the sinkhole management guidelines in areas of agricultural land undergoing plantation development. The talk was well received and generated some conversation with other relevant land managers.

Overdue CoCs hit for a six

Jo Field, Forest Practices Advisor, Forest Practices Authority

The FPA launched a program in February 2009 to ensure that the overdue Certificates of Compliance (CoCs) for expired FPPs were lodged. The Compliance Section sent out letters to applicants for Forest Practices Plans that had overdue CoCs. The letters reminded the applicants that, under s.41 of the *Forest Practices Act 1985*, their outstanding CoC must be lodged within a given time frame or they would face enforcement action (see article on CoCs in *Forest Practices News* vol 9 no 3 in June 2009).

Of the initial 531 CoCs outstanding as at 31 December 2008, only six CoCs remained outstanding by June 2009. Persons responsible for the remaining six CoCs have been contacted and compliance reports have now been completed. This is a great result and is due to the hard work of Forest Practices Officers and to the support of their managers and clients.

The FPA intends to run regular checks on the lodgement of compliance reports in order to ensure that high standards are maintained. FPOs can now do an online check of the due date of CoCs. Please contact Jo Field or Daniel Livingston (Daniel.Livingston@fpa.tas.gov.au) if you have any queries.

Author's contact:
Jo.Field@fpa.tas.gov.au

Researching the Tasmanian masked owl

Mick Todd, PhD Candidate, School of Zoology, University of Tasmania

Mick fills us in on how he is using recordings of owl calls in his research. Mick is co-supervised by the FPA's Sarah Munks, and the FPA also provides in-kind support, mainly through the Eagle Project Officer's assistance in carrying out fieldwork.

The research that I am carrying out is investigating the ecological requirements of the Tasmanian masked owl, *Tyto novaehollandiae castanops*, which is the largest *Tyto* or barn owl species in the world. The project is in part funded by the Forestry CRC. Call playback surveys have been conducted throughout most of Tasmania over the last 12 months. These involve playing back pre-recorded calls of the Tasmanian masked owl through a megaphone and listening and looking for responses of any masked owls in the area. Contrary to popular opinion, not all owls hoot – masked owls screech and chitter.

Over a thousand such surveys were conducted, many of them in land managed by Forestry Tasmania.. Over 80 new records of the masked owl were thus obtained. While the results are yet to be fully analysed, there appears to be a greater density of masked owls at lower altitude, particularly below 450 m, and also in dry forest types as opposed to wet forest types. Similar results were obtained for the southern boobook and the Australian owlet-nightjar, which were often heard during the surveys even though their calls were not broadcast.

Author's contact:

maskedowl@gmail.com

Mick Todd and a masked owl. The owl is an adult female which weighed 1080 grams. She was captured at Lime Bay, Tasman Peninsula, using a modified Dho Gaza net designed by Jason Wiersma of the Forest Practices Authority. Playback of pre-recorded calls of the Tasmanian masked owl brought her down to investigate the apparent intruder and resulted in her flying into the net. On capture she was fitted with a VHF radio transmitter and is being tracked to determine her range and use of habitat. To date, she has only used one roost tree, a dead stag in mature forest on a hill.

Alternative techniques for cultivation of plantations

Richard Shoobridge, Forest Resource Team Leader, Norske Skog Fibre Division

As our plantation estate moves into the next rotation, finding the best treatment for site preparation is something that plantation managers have been looking at for some time. Over the last three years, Norske Skog has supported one of our contractors, Aprin Pty Ltd, to develop a Swedish made machine produced by the Bracke company. The machine can be mounted on a variety of machines: tractors, skidders and dozers. It comes with a couple of attachments which can either spot cultivate or line mound. Initially slash can be cleared by windrowing or by broadcast burning. Excavator raking to windrows is a good option as it extends the cultivation 'weather window', and there is lower impact on the site (see the article on the Forest Practices Award-winning work carried out by Neil Denney and Bob Knox on excavator heaping in *Forest Practices News* vol 8 no 1 in April 2007).

Spot cultivator

The first set-up used was the spot cultivator. The original machine was designed for cultivating peat bogs and required some modification to achieve the best result in our soils. It produces two rows of spot cultivation at a pass and can be adjusted to a range of row widths and spot spacings via the computer control. The first trial did not provide adequate cultivation on some sites, but the addition of rippers to break the surface fixed that problem. The machine was mounted on a dozer, which travelled over the stump lines with the cultivator working in each inter-row. One site was inspected by Peter McIntosh, the FPA's soils specialist, who was satisfied that the machine provided a result comparable with other spot cultivation treatments. The planting crews were pleased with the result, and tree growth has been fine to date.

The Bracke twin spot mounder has the ability to do two mounds at a time. The on-board computer can be set to dig the spot mounds at the required spacing. Effectiveness can vary due to the presence of rocks, and sometimes the machine misses spots.

Richard and his dog Toby examine the mounds. 'Our planters loved planting in these mounds as they were not too high. In some situations the machine may not cultivate to the depth required by some companies.'

Once the preferred spacing is set on the spot cultivator and the mounder is put in the ground, all the operator does is drive the tractor and the Bracke automatically does the rest – essentially the attachment (photograph on top right of previous page) alternatively 'scrapes' and 'dumps' the soil into regularly spaced mounds, ready for planting (above).

The Bracke mound plough. As all our work is in second rotation sites, this machine has the ability to straddle the stump line and place a mounded line over the existing stumps; as pine stumps break down very quickly they'll contribute of nutrients. The plough turns hydraulically, which produces a better tilth than the savannah plough. (photograph by Richard Shoobridge)

Mound cultivator

The mound cultivator was used this season for the first time. It has two hydraulically driven discs that can be adjusted to a multitude of positions to get the best result. The action of the discs provides very good cultivation and it has been found to work very well over stumps – provided they are low enough for the dozer to get over. On stump-free sites, a ripper can be used where required. One coupe it was used on was an ex-pasture site with very turfy cover. A conventional mound plough was used on a previous section and required double cultivation to get a satisfactory result, whereas the Bracke produced a good mound in one pass. With the computer control, it should also be possible to produce an interrupted mound, which would be a good option on sites where slopes exceed limits for line mounding but are predominantly not at levels where only spot cultivation is justified. The current machine did not have quite enough hydraulic flow for this but in the coming season the mound cultivator will be on a bigger dozer and will be trialled again.

Future options

Reducing the need to slash burn, and looking at alternative slash treatments, are ongoing foci. A number of options have been trialled but more work is needed. As markets for bio-fuel grow, the options will increase and in the meantime we will continue to look at alternatives. Use of fallow periods to facilitate better weed control and to reduce reliance on residual herbicides is another treatment with good prospects, provided we can find the best balance with keeping land out of production for a period. Expect more on this in future issues!

Author's contact:

Richard.Shoobridge@norskeskog.com

Editors' note: thanks Richard for sending us this article. It's always great to get contributions from FPOs.

Mick in Malaysia

Mick Schofield, Compliance Manager, Forest Practices Authority

I recently had the opportunity to spend a week in Malaysia carrying out a consultancy on behalf of the FPA.

The visit was part of a wider project, involving several countries in Southeast Asia and the Pacific, to review the monitoring and evaluation (M&E) systems used to implement national codes of practice for forest harvesting. It was funded by the Australian Government's Asia-Pacific Forestry Skills and Capacity Building Program (APFSCBP), and organised with the FAO Regional Office for Asia-Pacific.

Although it was a short trip, we achieved a lot as the Malaysians were wonderful hosts and there were many opportunities for them to explain how they implement their codes, generally referred to as Reduced Impact Logging (RIL) Guidelines.

I was able to meet with both public and private sector representatives in the capital Kuala Lumpur and was hosted by the Sabah Forestry Department – the state forest manager – in Sandakan, on the island of Borneo. The time in Sabah was a highlight and included a couple of days out at the Deramakot Forest Reserve. The 55,000 hectare Deramakot Forest Reserve is tropical natural forest and is one of the 27 Forest Management Units managed by the Sabah Forestry Department. This particular reserve has the distinction of being the first tropical forest in the world to receive Forest Stewardship Council certification.

On the information presented and from my observations during the field visit, the guides and protocols components of the M&E systems appear to be of a high standard. Interestingly, some of the protocols incorporated into RIL guidelines such as directional felling techniques were first trialled and developed in the tropical forests of North Queensland.

The challenge, as noted by the foresters and forest managers, is that it is difficult to ensure that contractors and staff working in the forests have adequate training. Within the forest departments the capacity to ground check and enforce the RIL guidelines also requires strengthening.

While it was a short visit, it was apparent that there is tremendous pressure on forested land from alternative land use such as palm oil plantations. As a forester, it struck me that the best long-term prospects for maintaining forested land, and therefore the benefits of forested land, might be achieved through sustainable forestry. Strengthening existing codes of practice could help deliver and demonstrate sound forestry.

In all, a good visit and some fantastic forests. Plus a heap of photos.

Author's contact:

Mick.Schofield@fpa.tas.gov.au

This big tree has been retained as a potential crop tree for both its future timber value and as a seed source. RIL guidelines place a clear focus on tree marking, directional felling and planning of the snig track placement to minimise impact on potential crop trees. This forest is planned to be harvested again in 25–30 years time.

Mick on a landing site with staff from the Sabah Forest Department. The forest contains a large diversity of commercial species mainly from the Dipterocarpaceae family. Most of the logs harvested are used for sawn timber and plywood; there is a minimal pulpwood market from natural forest.

Mick in Malaysia

This tree was initially marked for extraction, using the metal tags on the trunk. However, the faller discovered it was hollow and marked it for retention (the circle with the line through it), illustrating the flexibility in the system.

Second-cut forest in Deramakot Forest Reserve. This natural forest is able to deliver a wide range of benefits, including sustainable wood production and maintenance of many biodiversity values.

FPA Forward Training Programme 2009

Course	Contact	Timing	Duration	Location	Course Content
Forest Practices Officer course	Jo Field, Forest Practices Advisor Jo.Field@fpa.tas.gov.au Phone: 6336 5380 Mobile: 0428 354 061	22–24 Sept 20–22 Oct	Orford Deloraine	3 days each location	Pre-requiste course for appointment as FPO
Forest practices for supervisors	Katie Sciberras, HR Training Officer, Forestry Tasmania Katie.Sciberras@forestrytas.com.au Phone: 6233 8114	12–15 Oct	4 days	East Coaster, Orford	General training in forest practices for forest industry supervisors
Tree hollow training day	Amy Koch, Tree Hollows Project Officer, FPA Phone: 6216 4455 Amy.Koch@fpa.tas.gov.au	November	1 day	1 location each in north and south	Provision of information on the ecology and management of tree hollows, and training in the identification of habitat trees
Geology for Foresters	Peter McIntosh, Manager, Earth Sciences Program Peter.McIntosh@fpa.tas.gov.au	18–20 May 2010	3 days	Tullah.	Details to be advised. Contact if interested in attending.

Bities in the Bush: Ticks

Chris Spencer, Technical Officer, Forest Practices Authority
Karen Richards, Ecologist, Forest Practices Authority

In this, the fourth article of our 'Bities' series, we present an outline of the life cycle and habits of ticks, as well as some suggestions of how best to manage an encounter with those dreaded little parasites.

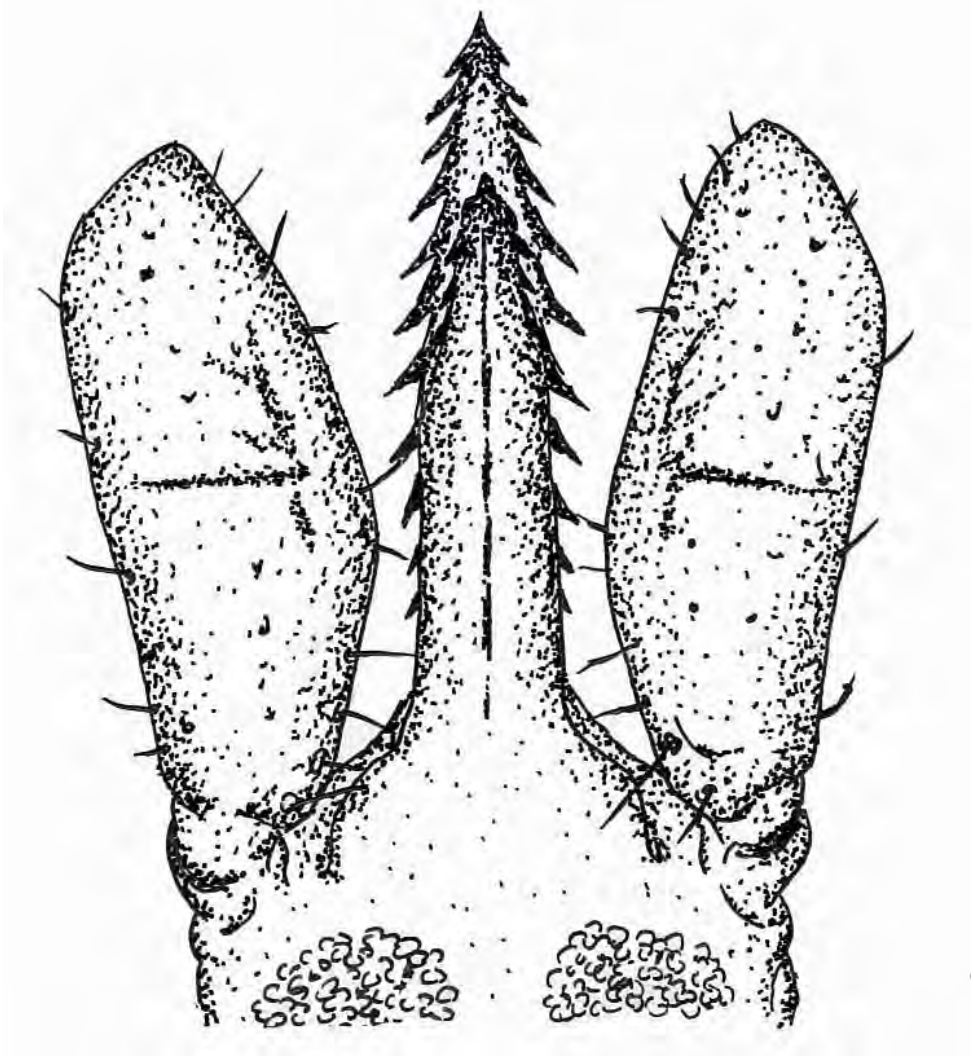
Identification and biology

Approximately 850 species of ticks (Acarina) are known worldwide. All ticks are haemophagic (blood-feeding parasites), having mouthparts modified for piercing the skin and a very flat body designed to cling to the host as they extract a meal. Despite the popular belief that ticks are generalists and parasitise most species of animals, including humans, without preference, many tick species are actually host specific. For example, *Ixodes ornithorhynchi* is unique to the platypus, *Ixodes hydromyidis* to water rats, *Aponomma auruginaus* to wombats, and *Aponomma concolor* to echidnas. There are also species adapted to parasitise only the cold-blooded reptiles and others that specialise in penguins.

Two family groups – *Ixodidae* (hard ticks) and *Argasidae* (soft ticks) – are represented in Tasmania. Soft ticks have no scutum (area of sclerotised exoskeleton) and their bodies have a rough leathery texture. The feeding strategy of members of this family may be likened to that of bedbugs as they live in the nest of their host, feeding often but for short periods and taking 5–20 times their body weight at each meal. They live for several years and have the capacity to produce multiple egg clutches, each containing up to 50 eggs. In Tasmania, species of this family are not considered a threat to humans.

Hard ticks have a distinctive scutum on the dorsal surface immediately posterior to the head. In Tasmania, the ticks commonly found on humans and domestic pets belong to the *Ixodes* genus. Members of this genus have three instars, or life-history phases: the first, a six-legged larva or seed tick (1 mm long); the second, an eight-legged nymph; and the third, the sexually reproductive adult tick (the female is 13 mm long when fully engorged).

Ticks are sexually dimorphic, with the female being the larger and requiring a blood meal at each developmental stage. This is followed by a period of diapause during which she moults: usually in a moist environment amongst forest litter or beneath debris. Males are much smaller (2 mm), do not feed as adults, and have a much reduced life expectancy.



Head of tick, showing barbed hypostome (drawing by Karen Richards).

Tick habits

Ticks generally live in moist environments. They are able to aestivate (become inactive) in litter layers or beneath stones and decaying wood in order to survive periods of very dry or very cold conditions. Like leeches, they will become active if a possible host animal is detected. Tick activity peaks in the late afternoon and early evening, to coincide with the mostly nocturnal habits of the host animals.

Due to their limited ability to travel, ticks rely on host animals for transport as well as for food and it is not surprising that the highest population densities of ticks occur in areas where animals congregate to feed or sleep, as well as on heavily used trails through bush or grassland where host animals are likely to pass by.

Bities in the Bush: Ticks

Fully grown male ixodid tick (photograph by Karen Richards).

When seeking a meal, ticks climb to a vantage point of shrubbery, ferns or grasses from which they await a passing host. 'Questing' with fore-legs extended, or alternately attracted to its presence by body heat, ticks seek out and attach to an animal as it rests. Once upon the host, ticks search for a site where they can attach and not easily be dislodged and where there is an abundance of blood vessels close to the skin surface. Ears, underarms, navel, amongst hair and any body crevices are eagerly sought as attachment sites.

Ticks are sensitive to body heat (but not excessive temperature) and to carbon dioxide, and are able to detect movement. The rostrum (mouth-part) is barbed (see first picture) and is inserted into the skin. The animal also secretes an adhesive substance to strengthen its attachment. Depending on the developmental stage of the parasite, this attachment may last from one day to a week. Mature females drink up to 600 times their body weight of blood for their ultimate meal.

The female is fertilized after the penultimate feed. Then, following an inactive period, she seeks out another host and takes a massive meal. After this she produces a clutch of eggs (>200) over several days in a moist, sheltered environment, such as beneath a stone, log, or amongst dense ground litter. This is the culmination of her life's work and she dies soon after ovipositing. The new generation hatches after one month and the larvae immediately seek hosts. This explosion of tiny ticks is the reason we occasionally find ourselves in a location where the vegetation appears to be 'alive' with ticks.

Effects/impacts on humans

Human response to tick envenomation varies greatly between individuals, from the slight discomfort of itching to a severe allergic reaction which in some cases may include anaphylaxis leading to possible death. The good news is that few people exhibit an extreme allergy, and the infamous paralysis tick *Ixodes halocyclus* does not occur in Tasmania. However, *Ixodes cornuatus,* found mostly in the north and east of the state, has (in rare cases) been found to cause mild paralysis.

Ixodes spp in Tasmania are known to be vectors of bacteria belonging to the *Rickettsia* group, which may cause Flinders Island spotted fever. Symptoms include fever, headache, joint/muscle pain, tender lymph nodes and a spotty rash; at the bite site there may be redness and a thick black eschar (scab). The symptoms can be treated with antibiotics and serious illness is rare. Ticks are also known to be vectors of the *Borrelia* bacteria which causes Lyme disease. This is not known to occur in Tasmania; however, current research being conducted at the Royal North Shore Hospital in Sydney is testing for the presence of the bacteria in Tasmanian ticks.

General symptoms of envenomation

General symptoms of envenomation range from a vague ache and a feeling of heat in the area around the attachment site, to severe irritation, itching, redness and swelling. In the case of seed ticks, the skin may pucker in the immediate area of attachment, sometimes engulfing the offending animal. These symptoms may continue for from one week to one month depending on the susceptibility of the affected individual.

Tick removal

Tick removal is painful, and no matter what method one employs it will hurt. Due to the barbed structure (hypostome) of the tick's mouthparts, removal causes the tearing of sensitive tissue.

Thin forceps have long been the accepted method of tick removal. This involves sliding forceps between the host's skin and animal body, grasping the animal's head firmly, and removing it with a sharp, upward jerk. All FPA field staff have recently been issued with a revolutionary tick twister which affords the most effective and least painful means of tick removal; the rotating action has a tendency to reduce the ability of the barbed hypostome to grip the flesh.

Under no circumstances should one attempt to remove a tick by gripping, scraping with the fingers, applying a solvent (acetone, alcohol, petroleum product etc), or applying a lighted flame. These practices stress the animal and are likely to induce greater levels of envenomation with saliva, which contains an anticoagulant and histamine.

Never attempt to remove an attached tick from the eye, as this is a job for a medical practitioner or vet!

Despite popular belief, ticks do not leave their head imbedded in your flesh; however, in rare cases the hypostome may become detached and remain in the skin, possibly causing infection. It is this factor which makes the tick twister the most appropriate means of removal. Unlike leech bites, the removal of a tick is not accompanied by bleeding as the wound is a tiny puncture that quickly seals, rather than an incision requiring the blood to clot and seal the wound. On removal it is wise to disinfect the bite site using a standard disinfectant, such as tea-tree oil, alcohol or eucalyptus oil.

Prevention

Wearing gaiters or tucking trousers into socks will assist in preventing low-level

FPA
FOREST PRACTICES AUTHORITY

Bities in the Bush: Ticks

Fully fed female penultimate stage (left) and ultimate stage ixodid ticks (photograph by Karen Richards).

Ultimate stage female ixodid tick ovipositing eggs, each measuring 350 microns (photograph by Karen Richards).

tick attachment, as will the wearing of long sleeved shirts. Some commercially available substances including tea-tree oil, eucalyptus oil or prepared repellents may be applied to skin or clothing. However, frequent reapplication will be necessary and susceptible individuals may suffer from allergic reactions to these substances. Pale-coloured clothing may assist the wearer to more easily see mobile ticks before they have an opportunity to attach; wearing short trousers should be avoided in areas where the presence of ticks is anticipated.

On vacating areas where ticks are likely to occur, it is good practice to carry out a thorough inspection of clothing and backpacks to remove any visible ticks before they are able to attach.

Follow-up treatment

Tea-tree oil or many of the commercially available anti itching substances may afford temporary relief from localised itching and burning. However, the dull ache and pain at the bite site and/or limb may continue for several days; simple analgesics may give relief from these symptoms. Infection can occur, and is usually associated with bacteria or other organisms introduced to the site by the tick or by subsequent scratching of the irritated skin. Medical advice should be sought if excess heat, swelling, shortness of breath or blurred vision are experienced, or if bite site is on very sensitive flesh, such as the eye or mucous membranes.

Authors' contacts:

Chris.Spencer@fpa.tas.gov.au
Karen.Richards@fpa.tas.gov.au

Published by the Forest Practices Authority
30 Patrick Street Hobart Tasmania 7000 Phone (03) 6233 7966 Fax (03) 6233 7954 info@fpa.tas.gov.au www.fpa.tas.gov.au
Banner photograph: The FPA's Adam Pennington assessing threatened non-forest vegetation.