



Forest Practices News

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

Award-winning montane grassland management

Chris Davey (Resource Manager, Gunns Burnie) (left) and Fred Duncan (Senior Botanist, Forest Practices Authority) (right)



Gunns' North West Resource Management Team (NWRMT) has won the 2006 Australian Environment Foundation Award for Environmental Management in Forestry. The award acknowledges the team's active involvement in the strategic management of high conservation value montane grassland communities on Gunns freehold land in the north-west of Tasmania (known as the Surrey Hills estate). The Management Team comprises Chris Davey, Himlal Baral, Robert Onfray and James Dick.

Why conserve and manage grasslands?

Grassy ecosystems are considered to be the most threatened ecosystem in south-eastern Australia, with

over 95per cent of their area having been lost or severely modified since European settlement. In Tasmania, alpine and montane (upland) grasslands have fared much better than lowland grassy communities. Montane grasslands in north-western Tasmania include some of Tasmania's largest and most diverse grasslands. As an indication of the huge diversity that can occur at a fine scale, more than 50 plant species have been recorded in sample areas of only 10 m².

Native grasslands, and associated grassy woodlands, cover about 6300 ha in montane areas of north-west Tasmania. They occur on a range of land tenures: National Park, Crown land, State forest and private land. About 63 per cent of montane grasslands in north-west



Helicopter being used to manage grassland burning on Westwing Plain, north-west Tasmania

Award-winning montane grassland management (continued)



Chris Davey (middle) discusses Gunns' grassland management with Fred Duncan of the Forest Practices Authority (left) and Dr Pablo Peri, an Argentinian researcher visiting Tasmania on a study tour.

Tasmania occur on private land, almost half of this area being on Gunns land.

As well as being extremely diverse, these high altitude grasslands are known to support several threatened plant and animal species, including the Tasmanian endemic Ptunarra brown butterfly (*Oreixenica ptunarra*) which is restricted to native tussock grasslands.

Most montane grasslands are of pre-European origin, but some (e.g. those along the route of the Emu Bay Railway) have been created by clearing or burning forests. Most of the grasslands are dominated by *Poa labillardierei* (white grass or tussock grass), and are maintained by fire, frost or marsupial browsing. They occur in a mosaic with moorland, rainforests and eucalypt forests, including large areas of forests being managed for wood production. Eucalypt plantations are also an important part of this mosaic.

Since the 1980s, there have been many ecological studies carried out on the grasslands of north-west Tasmania, with the enthusiastic support of Gunns and its predecessor, North Forest Products. Particular recognition should be given to long-standing Forest Practices Officers Andy Warner and Wray Watts and grassland researcher Louise

Gilfedder. These studies highlighted the ecological importance of the grasslands on Gunns' Surrey Hills estate. For example, 15 of the 18 grassy communities described from north-west Tasmania occur within Surrey Hills and several of these are poorly reserved or unreserved in the State reserve system.

Gunns' approach to grassland management

In 1998, Gunns assisted with the preparation of a vegetation management plan for Surrey Hills Grassland Reserves, which was undertaken by Brooke Craven of the Forest Practices Board. The management plan recommended

the entire 2000 hectares of high conservation value montane grasslands on Gunns' land be protected within Gunns' private reserve system. The grassland areas were delineated into discrete burn units that were then prescribed a periodic low intensity burning schedule. This aimed to replicate the aboriginal burning regimes that had been in place on Surrey Hills for millennia.

In addition, the vegetation management plan advocated ongoing monitoring and control of invasive woody weeds. Introduced broom and gorse are widespread in upland areas of the north-west but fortunately had not spread seriously into the floristically diverse grassland areas. The ecological evidence clearly indicated that these management strategies would maintain and promote the floristic diversity of the grassland communities and provide vital habitat for the threatened species that lived within them.

Annual spring burning plans are prepared and implemented by the NWRMT in consultation with the Threatened Species Section of the Tasmanian Department of Primary Industries and Water. The program aims to maintain and promote the floristic diversity of the grassland communities by keeping in check the aggressive tussock grass and invasive woody shrubs that would otherwise dominate many of the grasslands.

At the same time, the relatively cool spring burns create a mosaic of burnt and unburnt patches of tussock grass, which is the preferred habitat of the Ptunarra brown butterfly. The females



Hatfield Plain, in north-west Tasmania, just after burning (left) and showing new grass growth one month after burning (right). (Photograph by Gunns)



Award-winning montane grassland management (continued)



Romney Marsh, in north-west Tasmania, during a managed burn. (Photograph by Gunns)

lay their eggs in the *Poa* tussocks in autumn, and the larvae – which emerge about six weeks later – subsist on this rather mundane (but high fibre!) diet until they metamorphose early the following autumn. Gunns conduct annual monitoring of Ptunarra brown butterfly abundance during the autumn flight season, using permanent transects that were first established on Surrey Hills by staff of the Threatened Species Section in 1997. Dr Phil Bell is one of the key TSS specialists who provides advice to Gunns on management of the butterfly.

Information on the distribution of the grassland communities, their conservation status and the results of annual burning and butterfly monitoring programs are collected and maintained by the NWRMT on Gunns' GIS using the latest GPS technology, aerial photographs and recent satellite imagery.

The NWRMT has also been actively involved with the promotion of the importance of grassland conservation within and outside the forest industry. The grassland sites have been a focus for a number of scientific field days, bringing together Tasmania's foremost authorities on grassland management to

impart their knowledge to a new cohort of forest managers. (At one of those field days, a sharp-eyed botanist noted an unfamiliar plant that on investigation proved to be a new species of leek-orchid, *Prasophyllum crebriflorum*).

This year, the NWRMT developed a grassland management brochure that the public can access on Gunns' website <www.gunns.com.au> The brochure was also expanded into a prominent explanatory sign installed at a picnic area on the Murchison Highway adjoining one of Gunns' main

grassland reserves.

In presenting the award, Australian Environment Foundation (AEF) Chairman Don Burke said that grassy ecosystems are among the most endangered plant communities in the world. Gunns had been recognised by the Foundation for their active management of more than 2000 ha of high conservation value native grasslands and high levels of biodiversity. He commented that Gunns' grassland management program had nurtured an abundance of individual plant species, assuring native habitat and survival of endangered species such as the Ptunarra brown butterfly.

Management of the north-west grasslands has involved a great deal of co-operation between many different individuals and organisations over the years – including Gunns, North Forest Products, Forestry Tasmania, the Forest Practices Authority, DPIW and the University of Tasmania. It is very rewarding to see that the hard work and success of the grassland management program has been recognised.

Authors' contacts:

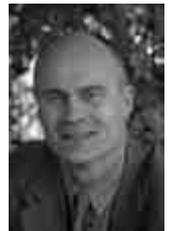
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Grassland enthusiasts on a field day looking at species diversity on Peak Plain (St Valentines Peak in the background). (Photograph by Wray Watts)

Review of the *Forest Practices Code*

Graham Wilkinson, Chief Forest Practices Officer,
Forest Practices Authority



The year 2007 marks the 20th anniversary of the first *Forest Practices Code* in Tasmania, and it marks the year for another major review and revision of the code. The first draft code was developed after the introduction of the *Forest Practices Act 1985*. The draft was extensively field-tested and revised before being formally released as the 1987 code. Further reviews and revisions resulted in the 1993 and 2000 editions. The commitment to ongoing review and improvement of the code continues and in 2007 a major review will be initiated by the board of the Forest Practices Authority in consultation with the Forest Practices Advisory Council. The review will be conducted as follows:

1. The general provisions of the code will be reviewed by a technical working group convened by the Forest Practices Advisory Council, which comprises representatives of stakeholders including

forest managers, landowners, conservation scientists, local government and forest workers. The technical working group will draw upon the expertise and experience of Forest Practices Officers, FPA staff, stakeholders, other practitioners and scientists. The report of the working group will be submitted to the Forest Practices Advisory Council for stakeholder review and advice to the board of the FPA.

2. A thematic review of the biodiversity provisions of the code will be undertaken by an expert panel in parallel with the above general review. The expert panel will be independently chaired by Dr Mick Brown and will be supported by a team of scientific and forest management experts. The expert panel will submit its report to the Forest Practices Advisory Council for stakeholder comment and advice to the board of the FPA.

3. The board of the FPA will prepare and release a draft code for public comment. Submissions from the public and other bodies will be reviewed by the board and taken into account when finalising the new edition of the code.

The board expects to have a new code in place by mid 2008.

In the interim, Forest Practices Officers are encouraged to submit ideas about improvements to the code. You can send your comments/thoughts directly to the code coordinator Chris Mitchell (chris.mitchell@fpa.tas.gov.au) or to your representative on the Forest Practices Advisory Council.

Full briefings on any proposed changes to the code will be carried out with all Forest Practices Officers as part of the review process.

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Editors' Corner

This is the last issue for 2006, and we thank all contributors. We had a good response to the FPO interviews we published this year and plan to include more interviews in future issues. On the matter of FPOs, we are always interested in receiving short anecdotes and photographs, funny or serious, about FPOs and foresters. If you've discovered a rare plant, received an environmental award, found an odd landform, taken a great picture of some wildlife, or won the forest contractors' poetry competition we'll be interested to hear from you, preferably with a photo attached. If you don't consider yourself to be a writer, just send a photo and a caption.

Longer articles are still welcome. These can be based on issues found in coupes, but think about sending in articles on what you've seen on the mainland or overseas, or on a conference field trip, or your comments on that memorable training course. Book reviews, comments on publications and letters to the editor hardly feature in *Forest Practices News* – yet we would welcome them.

Please include illustrations and a photo of yourself with your contributions and ensure that figures/pictures are sent as separate files and not embedded in Word documents.

Contributions can be supplied either as hard copy or electronically. If forwarding material electronically, the address is:
Christine.Grove@fpa.tas.gov.au

The Editors wish all FPOs and other readers a safe and prosperous 2007 – may the rains come and the fires subside.

Christine Grove and Peter McIntosh
Forest Practices News Editors

**Deadline for contributions
for the next FPN:
Mid-May 2007**



Home range size, habitat use and diet of the endangered Tasmanian masked owl

David Young, Zoology Department, University of Tasmania, in collaboration with the Tasmanian Threatened Species Section, Nature Conservation Branch, DPIW.

Under the cover of darkness there is a world rarely seen ... a world travelled by creatures of the nightshift. Among these, the owls are the supreme hunters, flying soundlessly like shadows, flying on wings of silence. (Young, 1998).

Tasmania's forests are home to the second largest nocturnal raptor in Australia, the Tasmanian masked owl *Tyto novaehollandiae castanops*. The Tasmanian masked owl is a large, endemic, hollow-dependent forest owl that is currently listed as endangered in the *Tasmanian Threatened Species Protection Act 1995*. The major threats

to masked owls are the loss of old growth forests (that are needed for nesting) as a result of commercial forestry operations, land clearing for agriculture and urbanisation, firewood collecting and natural attrition (Bell et al., 1997).

I recently radio-tracked two female masked owls in the Huon Valley at Crabtree and Mountain River to assess their home range, the habitats they used most frequently and their diet, as little is known about the ecology of these owls. The home range or territory for each owl was approximately 1800-2500 ha in a highly modified rural

agricultural area. The home ranges consisted of a mosaic of forest and open pasture areas and were situated primarily on private property. Both the radio-tagged owls preferred to forage at night in relatively small patches of forest (0-20 ha) with little or no understorey. However, they roosted during the day in larger forest patches (20-100 ha) with a dense understorey adjacent to small creeks or drainage lines. This highlights the importance of streamside reserves for conserving masked owl habitat in Tasmania.

The diet of both owls was assessed by collecting regurgitated pellets from their roost sites, as this is where most pellets accumulate. Eastern barred bandicoots were the most important species in the diet, closely followed by eastern swamp rats and Tasmanian pademelons. Yes, they hunt and eat Tasmanian pademelons, even though they are three to four times their size! Introduced species such as black rats and rabbits were also important prey items.

The apparent preference displayed by the radio-tagged owls for forest edges and highly modified forest pasture mosaic, suggests that masked owls may actually benefit from habitat fragmentation and the resulting increase in productive foraging habitat. However, the high mortality rates associated with these urbanised environments probably counteract this beneficial effect.

References

Bell, P, Mooney, N, Wiersma, J, 1997, *Predicting essential habitat for forest owls in Tasmania*, report to the Tasmanian Regional Forest Agreement Environment and Heritage Committee.

Young, J, 1998, *Wings of Silence*, R Smith Productions, Qld, Australia.

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David Young with a masked owl he radio-tracked near Crabtree in the Huon Valley.



Erin Flynn – First successful applicant for Forest Practices Authority Student Research Awards

Dr Sarah Munks, Senior Zoologist and Research Co-ordinator, Forest Practices Authority

In 2005 the Forest Practices Authority established a student research grant to encourage applied research that will contribute to the development of the forest practices system. The research grants, advertised on the FPA web site, are available for university post-graduate students (or equivalent) for research expenses up to the value of \$2000 per project.

The first successful applicant in 2006 was Erin Flynn. Erin is from Colorado State University in the USA where she studied how the environment affects the physiology of animals. She made a brief visit to Tasmania in 2004 to study at the Zoology Department at the University of Tasmania, where she attended courses in reproduction and endocrinology for conservation. She fell in love with the island and its wildlife and so in 2006 she decided to return to the State to work on her Master of Science Degree at the University of Tasmania.

Erin's project will provide new information on the ecology of our most common hollow user, the common brushtail possum. Although the brushtail possum is common, relatively



little is known about its ecology in this state. Her study aims to determine the influence of vegetation type and habitat disturbance on brushtail

possum population size, population, structure, and physiological well-being. The results of her work will enable brushtail possums to be assessed as an indicator species for monitoring the effects of forestry disturbance on arboreal marsupials. She will work at sites established by the FPA to monitor the survival and use of wildlife habitat clumps.

Erin started her fieldwork recently and has had to deal with the unpredictable nature of the Tasmanian environment, including a close encounter with a bushfire at her study site at Kelleve. We wish her well with her project and look forward to future Forest Practices News articles as her work progresses.

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Erin releasing a possum, which can't get away fast enough. (Photograph by Lisa Cawthawn)



Forward Training Programme – Forest Practices Authority Confirmed and proposed training 2007

Course (Contact)	Timing	Duration	Location	Course Content
Fauna field days (Ecology program)	Autumn 2007	1 day	To be advised	Accreditation in eagle nest search methods and nest activity checking methods
Fauna field days (Zoology program)	July 2007	1 day	NW Tasmania	Update on latest giant freshwater crayfish research and management tools
Fauna courses	March 2007 May – June 2007	2-3 days (each)	NE, NW, S and CN	Provision of ecological and management information of threatened species in each region. Revision of planning tools.
Quarry Forest Practices Officer ¹ (Chris Mitchell)	Winter 2007	2 days	To be advised	Train quarry managers who will then be given the authority to certify FPPs for quarries
Landscape simulations and 3D analysis workshop (Bruce Chetwynd)	Winter 2007	1 day	To be advised	Sharing of techniques and expansion of skills on seen-area/ 3D analysis and computer simulations of forest landscapes
2007 Forest Practices Officer course (Chris Mitchell)	July to October 2007	12 days total	Various	Pre-requisite course for appointment as FPO
Risk assessment (Chris Mitchell)	Autumn 2007	1 day	1 location each in south and north	Train additional FPOs involved in FPP preparation to conduct risk assessments where trees are being retained under the Forest Practices Code
Invertebrate field day (Zoology/Ecology program)	Spring 2007	1 day	NW Tasmania	General introduction to invertebrate conservation via the forest practices system, with a focus on threatened invertebrates in NW Tasmania.
Forest Botany (Fred Duncan)	February 2007	1 day	SE, NE, NW Tasmania	Flora of Tasmania; identification of species and communities; forest ecology; management and legislation
Forest practices training for supervisors ¹ (Chris Mitchell)	May 2007	4 days	To be advised	General training in forest practices for forest industry supervisors
Cultural heritage (Denise Gaughwin)	Autumn 2007	4 days	To be advised	Provides accreditation in cultural heritage with emphasis on the recognition, recording and management of Aboriginal and Historic sites

¹ Course will be run jointly by Forestry Tasmania and Forest Practices Authority and is dependent on demand.

Forest Practices Officers: are you moving?

To help us maintain an accurate database and to ensure that circulars reach you,
please advise us if you are transferring, resigning or retiring.

Festive Greetings from Adrienne, Joan and Sheryl. Phone:(03) 6233 7966 Email: info@fpa.tas.gov.au



What's going on at the top of the catchment? - headwater stream symposium and field day

Dr Sarah Munks, Senior Zoologist and Research Coordinator, Forest Practices Authority

A one day symposium and field day to update forest managers, planners and other researchers on headwater stream research and monitoring work in Tasmania was held in August with the support of the CRC Forestry.

Management of headwater streams was raised as an important issue by both foresters and the general public during the 1999 review of the Tasmanian *Forest Practices Code*. The review panel recommended further work to assess the intensity and duration of the impact of forestry operations on headwater streams and the extent of impacts downstream. The panel also recommended work on the effectiveness of current headwater stream management provisions. A program of collaborative work, with other research providers, commenced in 1999 to address these recommendations. The aim of the symposium and field day was to provide forest managers/planners and other researchers with a summary of the research and monitoring work that has been undertaken to date. A day

of talks was followed by a field day to discuss outcomes and implications of the research for management of headwater streams in production forests.

The event was well attended with 50 participants from a range of organisations. This included Forest Practices Officers, forest managers and CRC Forestry researchers from Victoria. The symposium began with a review of the structure, function and management of headwater streams in timber production forests by Dr Wayne Erskine from the University of Newcastle. A series of speakers then presented the results of studies that have looked at the intensity and extent of the impact of forestry practices on the biology and habitat of headwater streams. These included a summary of the work carried out on the impact of pre-code clearfelling on Class 4 streams in the Ben Nevis area.

The Ben Nevis retrospective study found that 15 years after harvesting, impacts on stream geomorphology



PhD student Joanne Clapcott explains how small weirs were used to provide short-term flow measurements on headwater streams in the Warra Long Term Ecological Research Site.

and benthic invertebrates were still evident. Platypuses also appeared to avoid the small streams that had been disturbed by the logging. These impacts were related to both the direct and indirect effects of the harvesting within the catchments of the streams. It was noted, however, that the current code provisions for the protection of headwater streams aim to avoid direct effects of harvest, such as felling into the stream and dragging of logs through the streams. However, indirect effects, such as those that result from increased stream flow as picked up in the Ben Nevis study, may still occur today. This conclusion was supported by the results of two recent PhD studies, by Joanne Clapcott and John Gooderham, that looked at changes within macroinvertebrate communities and of stream habitat resulting from forestry practices regulated by the current code.

The session on habitat and biology was followed by presentations of work carried out by the FPA's Peter McIntosh and others over the past 5 years to improve the management of class 4 streams, including the development of new guidelines that include increased



In the symposium fieldtrip, Peter McIntosh (of the Forest Practices Authority) shows how to assess soil erodibility, which is an essential component of erosion hazard analysis of headwater streams.



What's going on at the top of the catchment? - headwater stream symposium and field day

stream buffers designed to limit the impact of forestry practices on headwater stream erosion. Terry Ware from the Huon District of Forestry Tasmania presented an interesting case study that highlighted the challenges facing forest planners when trying to cater for all special values, including stream values, when designing a harvesting operation. He demonstrated that with careful planning potential impacts on headwater streams can be minimised.

The field day to the Warra Long Term Ecological Research Site involved lots of stumbling up muddy tracks, peering at tiny streams, sharing of problems and exchange of ideas on how to best protect Class 4 streams and their riparian areas during forestry operations. Wayne Erskine, from the University of Newcastle, and Leon Barmuta, from UTAS, provided a useful summary of the issues and the strengths and weaknesses of the research.

It was clear from the research and planning examples given at the symposium that good progress has been made in limiting direct effects of forestry operations on headwater streams: The code limits activities next to streams and provides rules on road building and stream crossings, and the new Class 4 guidelines identify at-risk streams requiring increased riparian protection. However indirect effects, derived largely from increased flow after harvest, are more difficult to address. This is because of the wide variation between streams and the variety of forest land uses around them, ranging from conversion of native forest to plantation through to partial harvest systems.

In the discussion held at the symposium, participants noted that having more streamside reserves could go some way to addressing these issues but they could not fully address them. Channel morphology is controlled by flood discharge, sediment load, and sediment and vegetation types in a catchment, as well as by riparian vegetation, so applying a riparian buffer to reduce direct impacts does not guarantee channel stability.



Symposium delegates inspect the effects of recent harvest and plantation establishment on a headwater stream.

Restrictions on catchment harvest area and the adoption of partial harvesting systems were raised as other stream management tools.

Work on the extent of impacts of forest harvesting on water quality, sediment transport, erosion and biology in downstream reaches is continuing, both in Tasmania and on the mainland. A major current project is the FPA Soil and Water headwater stream monitoring network designed to evaluate the effectiveness of the new Class 4 stream guidelines.

We still have work to do and decisions to make regarding the conservation management of our stream ecosystems in the forestry estate. Both the work and the management decisions made will require co-operation among researchers, forest managers and planners. The symposium demonstrated the close links that exist between researchers, managers and field practitioners, which are partly a result of the cooperative principle underpinning the forest practices system in Tasmania.

The Forest Practices Research Working Group plans to hold annual information

events (called What's New?) to update forest managers, planners and other researchers on forest practices related research topics and to discuss management implications.

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The following quotes come from an exhibition of Chinese nature paintings, which was at the National Gallery of Victoria in 2006:

*The wise find pleasure in streams/water
The virtuous find pleasure in mountains.*
Confucius (6th-5th Century BC)

*Watercourses are the arteries of
mountains;
Grass and trees its hair;
Mist and haze its complexion;
Stones are the bones of heaven and
earth...
Water is the blood of heaven and
earth...
Gao Xi (after 1000 A.D.)*

*To tranquilise one's mind is to nourish
one's spirit;
To nourish the spirit is to return to
nature.*
Daoist psalm



Forest Practices Officers: a key element of the forest practices system

Chris Grove, Communications Officer, Forest Practices Authority



Brett Miller

What job do you do?

I am an independent forestry consultant with my own business, TAS Land and Forest. I am currently training an employee to work alongside me. At times I employ up to ten people to meet demand for our services.

What training and experience have you had to enable you to do the job?

I started work in forestry 36 years ago. At the time I was training as a teacher and not enjoying it. I happened to walk home one day past the old Forestry Commission offices and knocked on

their door to ask for a job. I started the next day as a labourer. I then began a cadetship and trained as a technical forester. I've had experience in working for the government and private industry sectors and have been an independent consultant for the past six years.

I was accredited as an FPO in the first batch of FPOs and have done many FPA courses since then. Training started off with the FPA specialists running their own courses. They were more informal and relaxed in the old days – on the first archaeology course we had a hangi and free beer on the first night which helped everyone to get to know each other. Now everything is much more streamlined and professional – and not as much fun.

My trainee and I have just completed a wedge-tailed eagle course where we learnt how to identify eagles' nests and what measures to take to protect them. I estimate that between the cost of the course, travel and missed earnings it

has cost me around \$2500. As is the case for the corporate forestry bodies, it is a cost that has to be incurred to do business.

The forest practices system is now very sophisticated, with new regulations being incorporated into what is already a very complex system.

What does your role as an FPO involve?

My clients are normally referred to me by word of mouth. There is often confusion by the general public about who is the "face of forestry". I often have to advise regarding issues that should best be dealt with by government agencies because the trail to the correct government agency is so difficult to follow.

To prepare an FPP, I meet with the client for an initial consultation and explain the process of preparing an FPP and how the forest practices system works. I estimate the value of the timber (sometimes it is only land clearing) and, if the landowner wants to proceed, I check the boundaries and creeks and other things I need to consider in the FPP. Depending on the complexities in the FPP, it may take me anything from two weeks to two years to prepare the FPP. I have one case which is still not resolved two years down the track due to complex threatened species issues.

Neighbour notification, as is required by the *Forest Practices Act 1985*, often involves lengthy discussion, and perhaps modification to the FPP to satisfy the needs of both parties.

I work closely with one harvesting contractor who can be relied upon to do the job well. He contracts me to oversee the operation to ensure that his harvesting operation complies with the Forest Practices Code. Every effort is made to phrase the FPP in plain language to ensure that the FPP will be read and understood.



Selective harvesting must ensure that retained stems are not damaged and requires monitoring by a Forest Practices Officer. (Photo by Brett Miller)



Forest Practices Officers: a key element of the forest practices system



Planning for archaeological sites is often very interesting. The remains of this 1930s shepherd's hut were discovered when preparing a Forest Practices Plan in the Central Highlands. The Forest Practices Authority's archaeologist was notified and prescriptions developed to protect the site. (Photograph by Brett Miller)

About 80 per cent of my work is for small landowners and the rest is for big forest industry companies. The amount of work in preparing an FPP for a small landowner with, say, five ha and 750 t of timber is just the same as for a large coupe, of say 50 ha and 10,000 t of timber, which is generally the case for industrial forestry.

What are the challenges in your job?

I don't have any peer review of FPPs which I prepare. There is some room for the interpretation of the forest practices system when preparing an FPP. When you operate independently the buck stops with you and you have to rely on stringent self-review to produce plans that are clear and unambiguous.

The legislation dealing with threatened species is challenging. I always find the FPA specialists excellent to deal with but the process of preparing an FPP with threatened species involved is very difficult. The Conservation Assessment Section within the Department of Primary Industries and Water is understaffed, and with the current levels of clearing activity occurring within the state, threatened species management is a major issue. This

process often significantly delays the processing of a FPP.

It would be good to see the system made more streamlined and simple but on the other hand it's the complexity in the system which means that it can stand up to scrutiny. Simplifying it too much would leave it open to criticism.

What are the things you really enjoy about your job?

I really enjoy the variety in my job. I get to work all over the state in all different types of forest – from pine plantations to native forest. I meet lots of interesting people – every day is different. I try to avoid red tape in my business and keep things rolling. We have a policy of no meetings – our meetings are usually held over a beer

at the end of the day! Because I am independent I can choose which jobs I do - if I don't click with a landowner I'll tell them I'm too busy to do the job. It's satisfying seeing the process through from start to finish.

What would you like to see changed about the forest practices system?

You can have a great FPP but if the contractor doesn't read it properly or understand it then the chances are there will be potential problems. Training contractors in the interpretation of FPPs and a full understanding of the code would go a long way to minimising this. Whilst there are active training schemes in place, there are some contractors operating outside of the "training umbrella" that could improve performance with additional support.

Landowners are not in the culture of being bound by codes of practices because there is no agricultural code of practice. There are still a lot of land managers who are unaware of their responsibilities under the *Forest Practices Code*, even though the code has been in place for 25 years. Farmers are accustomed to treating their creeks as they see fit – they can let stock into them, drive tractors across them and spray around them. So being bound by the *Forest Practices Code* is a novel concept for them. I'd like to see an agricultural code of practice in place.

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Visual management planning often involves negotiating a compromise to meet both visual management objectives and a landowner's desire to maximise return.



A record of an Australian owlet-nightjar *Aegotheles cristatus* using a forestry boom gate as a roost site



Mark Wapstra, Environmental Consulting Options Tasmania (left)
Vanessa Thompson, Senior Forest Planner, Forestry Tasmania (right)

Introduction

The Australian owlet-nightjar belongs to a monogeneric family (*Aegothelidae*) of small, nocturnal, mostly arboreal, insectivorous birds (Debus 1994). In Tasmania, the family has one representative, the endemic *Aegotheles cristatus* subspecies *tasmanicus*.

Thomas (1979) indicated that the subspecies is 'poorly known' and 'mainly confined to the humid and subhumid effective rainfall zones'. Green (1993) made similar observations noting the subspecies is 'uncommon and sedentary in sclerophyll forest'. Higgins (1999) described the distribution in Tasmania as 'widespread in eastern Tasmania, especially south of a line from Swansea, through Ross to Waddamana, and west to Hastings Caves, Styx River and Tungatinah'. Interestingly, Sharland (1945) described the species as 'common'.

The following short article describes an Australian owlet-nightjar using an unusual roost site in a Tasmanian forest. The opportunity is also taken to discuss the subspecies' conservation status in Tasmania.

Observations

On 25 February 2000, we visited the Strickland Forest Block on State forest en route to assess a wedge-tailed eagle nest. We stopped amongst relatively undisturbed shrubby *Eucalyptus delegatensis* dry sclerophyll forest to unlock a forestry boom gate. To our surprise, a startled Australian owlet-nightjar flew from the horizontal opening in the end of the boom gate as the gate swung open.

The bird circled around and within the mature canopy of a *E. delegatensis* tree before disappearing rapidly into the end of a hollow branch in the canopy of the tree. Whether this was the more permanent nest or roost site for the bird is not known as the branch hollow was too high to examine. The single individual that was observed did not reappear from the hollow branch during our observation period (c. 15 minutes). This behaviour of roosting Australian owlet-nightjars flushed from hollows (in this case, an artificial hollow) flying to another nearby hollow is apparently not unusual (e.g. Bryant 1932; Bryant 1934; Hyett and Gottsch 1963).

The observation was made mid-morning in fine weather conditions. We have not heard of these birds using forestry boom gates as roost sites in Tasmania. However, Ford (1957) provides an account of an owlet-nightjar using an artificial structure, observing 'I captured one that frequented an old pipe in the engine room at Station Creek'.

Location details

Side road (west) off McGuires Marsh Road, Strickland Forest Block, State forest, Tasmap Dee 4631, 479312mE 5316382mN (GDA94), altitude 660 m above sea level, shrubby *Eucalyptus delegatensis* dry sclerophyll forest.

Roost site details

Yellow forestry boom gate, approximately 1 m above the ground, horizontal hollow steel tube (approximately 9 cm internal diameter), about 5 m in length, no observable material in tube.

Discussion

The Australian owlet-nightjar is an infrequently observed species in Tasmania. Notwithstanding the observation reported in this article, given the species' dependence on tree hollows for roosting and nesting, it is the opinion of the authors that any sightings of this species should be reported to allow a clearer picture of its distribution and specific habitat requirements to be developed.

The Tasmanian subspecies is not currently listed on either the *Tasmanian Threatened Species Protection Act 1995* or the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*. However, Garnett and Crowley (2000) suggested the subspecies could meet the category of 'vulnerable' using IUCN criteria because there are probably only about



The Australian owlet nightjar (*Aegotheles cristatus*) which the authors observed flying out of a forestry boom gate. (Photograph by Pete Tonelli (TasNature), LaTrobe University).



A record of an Australian owlet-nightjar *Aegotheles cristatus* using a forestry boom gate as a roost site (continued)

5000 mature individuals in effectively one population, which may be declining.

The Australian owlet-nightjar is a member of the hollow-dependent forest fauna of Tasmania and as such is listed in the Regional Forest Agreement as a 'priority species', specifically as 'hollow dependent fauna', which are listed in the category of 'other species protected through existing mechanisms' (e.g. *Forest Practices Code* and/or reservation). The use of hollows by the species is described in several anecdotal accounts (e.g. Burrell 1913; Robinson and Whitbourn 1961) and in more detailed studies (e.g. Brigham and Geiser 1997; Brigham et al. 1998) but there have been no specific studies of the Tasmanian subspecies.

While the species is afforded some protection through the existence of the reserve system, a number of threats to the species remain, including alteration of habitat through forestry activities (including collection of firewood), clearing of land for agricultural purposes and competition for tree hollows with other species such as starlings, especially in disturbed areas (Garnett and Crowley 2000). The area around the site described in this article is on State forest – upslope of the road is protected under Forestry Tasmania's Management Decision Classification system due to flora values; downslope of the road was contained in coupe SK007A, which was partially harvested in 2000/2001.

Current management prescriptions within its forest habitat (e.g. 'wildlife habitat clumps' specified by the *Forest Practices Code*) are likely to capture some suitable nest/roost sites, but in the absence of hard data a precautionary approach is suggested in which a range of hollow types are retained throughout and adjacent to harvested areas.

Controls on land clearing activities in Tasmania (e.g. the phase-out of land clearing by 2015 as outlined in the Community Forest Agreement) may partially alleviate pressure on the species in woodland habitats. The species is poorly known in Tasmania

with very few sightings; a legislated conservation status at both the state and national level may be warranted. Further research and survey, however, into the distribution and ecological requirements in Tasmanian forests and woodlands should be undertaken to allow a more detailed assessment of the conservation and reservation status of this species.

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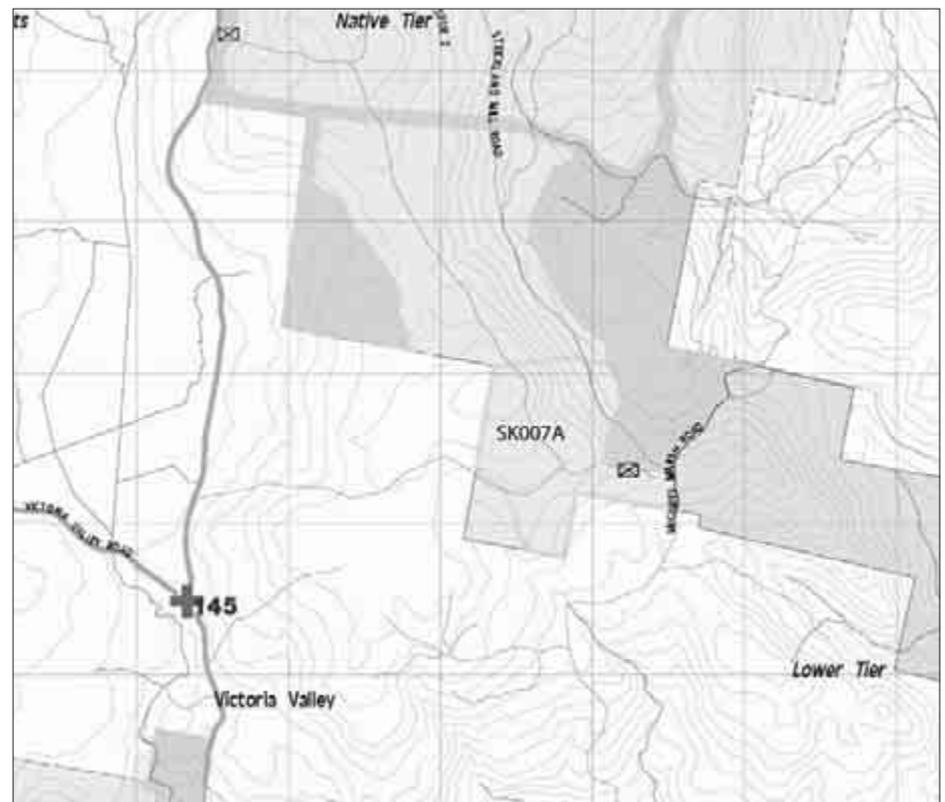
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Map showing location of Australian owlet-nightjar sighting.



Solution to the Monkey Puzzle!



Tim Leaman, Conservation Planner, Forestry Tasmania (left)
Fred Duncan, Senior Botanist, Forest Practices Authority (right)

An article in the last issue of *Forest Practices News* (September 2006) reported on a single plant of *Araucaria araucana* (the Monkey Puzzle tree) growing next to Lone Star Road in Tasmania's northeast. The plant had been discovered and photographed by Wayne Radford of Bass District.

The Monkey Puzzle is a conifer native to southern Chile and a small area of Argentina. It is a distinctive tree with an umbrella-shaped canopy. It is now protected in both countries, but in the past its timber was used, mainly for structural purposes and joinery. Its seeds are large and edible, and were an important part of the diet of the indigenous people, including the Arauco, after whom the genus and species is named. The Monkey Puzzle tree and other *Araucaria* species, such as Norfolk Island pine, were popular ornamental plantings, particularly in the Victorian period, and mature trees can be seen in a few places in Tasmania.

The Lone Star *Araucaria* was only about two metres in height, but was in good condition, despite competition from cutting grass and other plants. We wondered why it was growing there, so far from home. Was it planted, or was it a wildling that had developed from seed dispersed by birds or other means?

The mystery of the Monkey Puzzle has now been solved, so Forestry Tasmania Bass District staff can go back to sleeping easily in their beds (and at their desks). We were deluged with emails (2) from Peter Volker (Principal Plantations Scientist in Forestry Tasmania's Division of Forest Research and Development) and Sven Meyer (Project Manager (Pesticides) with the Chemical Management Branch of the Department of Primary Industries and Water).

Peter wrote... 'The tree is next to an *E. globulus* and *E. regnans* provenance trial area which was planted in 1977

by Keith Orme (*globulus*) and CSIRO (*regnans*). The Monkey Puzzle tree was planted by Keith in about 1982. I was with him when he planted it. Keith had many overseas contacts through his pioneering work on seed collecting of different *globulus* provenances. I'm not sure how he came to have the tree, but I assume someone from Chile sent him some seed and he grew it at home. He had a few seedlings, so he decided it would be a good idea to plant this one to mark the location of the provenance trial. Over the past 24 years I've watched it growing very slowly – especially compared to the eucalypts in the trial. Mystery solved!

Sven wrote... 'I used to work in the Plantations Branch at FT and did some work near this tree about 4 or 5 years ago. At the time it looked about the same size (1m). The tree was on an unusual genetic (I think *globulus*) trial site on the edge of the coupe on the roadside – we felled quite a few trees to look at stress and timber shrinkage between different *globulus* varieties. I came across a monkey tree somewhere and always suspected that the little tree we found on that block was the same thing. Maybe it was grown at Perth Nursery along with the unusual *globulus* variety and was planted by a tree planter for fun, making it about 20 years old.'

Fred contacted Keith Orme, who confirmed that he had planted the seedling, which he had raised from seed that possibly originated in Argentina, but which he obtained from a French seed company. He planted it partly as a marker for the *E. globulus* trial – which was successful – with the blue gums showing much greater MAI than the new kid on the block. (In fact, blue gum has been a very successful "new kid on the block" in South America, with about 370,000 ha of *E. globulus* plantation in Chile alone).

There is something of an international thread running through this story,

so it is worth mentioning a further Bass District connection involving blue gums, Monkey Puzzle trees and another imported wildling – this time from Ireland! There would be few people working in Tasmania's forests who haven't heard of Sean Blake – a forester who knows the north-east like the back of his hand. In the 1950s, Sean was a student at a boarding school in Northern Ireland. Amongst his strongest memories of those years were some inspiring trees in the school grounds. They were *Eucalyptus globulus* and *Araucaria araucana*.

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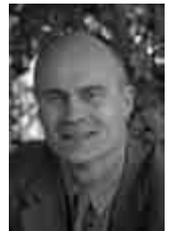


Araucaria in Chile, taken by Fred on his study tour in 2005 on a Gottstein Fellowship.

Editors note: Fred's report from his study tour to South America (Temperate native forests in Chile: management, conservation and forest practices) is now available on the Gottstein Trust website at <www.gottsteintrust.org> and can also be accessed through the Forest Practices Authority. The report discusses management, conservation and forest practices in Chile's temperate forests, and relates these to the situation in Tasmania's forests. Temperate forests in both places share a flora of Gondwanan origin and have many ecological attributes in common. There are also similar threads in their management and conservation, both of which have attracted a great deal of attention. Native forests are used for production of wood and other products, and are also important for the protection of soil and water values and biodiversity.



End of year reflections by the CFPO



Graham Wilkinson, Chief Forest Practices Officer, Forest Practices Authority

In recent years I have been very privileged to have worked on various forestry projects in developing nations. Usually my role has been to provide advice and conduct training on implementing codes of forest practice, drawing upon the experience built up within Tasmania over the past 20 years. One thing you quickly learn when working overseas is that there is no 'cookie-cutter' solution for developing codes of practice – each one has to be carefully tailored to meet the unique social, governmental, economic and environmental conditions within each country. However, there are some common principles, many of which feature prominently within Tasmania's forest practices system – the principles of a cooperative approach to management and regulation, underpinned by research, training and education; an emphasis on planning, supervision and monitoring; and a commitment to continuing review and

improvement.

Most developing nations have a long and proud tradition of forest use and stewardship, with many communities dependant upon the forests for sustenance, economic prosperity and spiritual well-being. However, changing demographics and developmental pressures are having increasing impacts on the forests and putting many at risk from over-exploitation or conversion to other forms of land use.

In Australia the disassociation of our largely urban society from the realities of natural resource use means that governments are under increasing pressure to 'reserve' forests and forego their economic benefits. Tasmania has 45 per cent of its forests in formal and informal reserves, which is more than three times the national average. Even so, the conservation of biodiversity cannot be met from the reserved

forests alone and there is a continuing need for complementary management of biodiversity within non-reserve forests. At the same time, these forests are expected to provide a range of other goods and services such as timber and non-timber products, grazing and recreation.

Regulatory devices such as codes of practice have an important role to play in achieving a reasonable balance between forest use and conservation. Developing nations clearly understand that the forests need to provide ongoing economic and social benefits, as well as environmental benefits. Ultimately, the economic and social benefits of forest management must be sufficient to cover the cost of protecting the environmental values.

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In Laos, the local community participates in the planning and implementation of the harvesting plan. A share of the logging revenue is allocated for developmental projects.



Local villagers collect small-wood from forest residues in Vietnam for local processing and use.

Globe-trotting tree fern

Simon Davies, Tree Fern Officer, Forest Practices Authority



I recently received an email from a Louise Webster with an enquiry about a tree fern she had purchased. Louise had bought a Tasmania *Dicksonia antarctica* from a Melbourne nursery and was curious about its origin. A quick check of the Tree Fern Tag number on the database revealed that the fern originated from a Black River forest coupe, which is situated in north-west Tasmania near Crayfish Creek. Louise was very happy that her tree fern was from the Circular Head area as she had family ties to the area dating back to the 1860s.

Louise informed me that she was actually living in northern Italy in a small village approximately 30 km from Milan. As a keen gardener, Louise takes some Australian flora home with her whenever she visits 'home' (in accordance with Italian quarantine

requirements of course). A *Dicksonia* tree fern was the latest addition to this little 'piece of Australia' in Italy. Within a few weeks of planting her fern (otherwise known as 'Dickson'), it had new crosiers unfurling, making itself 'at home'.

Louise's enquiry highlighted the benefit and purpose of the Tasmanian Tree Fern Tagging system. While in trade, any tree fern should be able to be traced to the point of harvest as demonstrated in this instance. An identifiable tag provides the consumer with the confidence that the tree fern they have purchased has been harvested in accordance with a Commonwealth-approved Management Plan.

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Platypus Disease Threat

Although the platypus is currently common and widespread in Tasmania, there is concern about the potential impact of an infection caused by a fungus, *Mucor amphibiorum*. Affected animals develop ulcers on various parts of the body. The ulcers can lead to an inability to control body temperature and death from secondary infection.

The disease was first observed in platypuses in 1982 in the Elizabeth River near Campbell Town in the northern midlands of Tasmania. It is now known to occur throughout the Tamar River catchment, as well as in the Emu and Mersey River catchments. So far the disease appears confined to these northern catchments but there are anecdotal reports of the disease in southern and northwestern river systems, which have fuelled fears that the disease may be spreading to other areas.

An unusual feature of this disease is that it affects platypus only in Tasmania and not on the Australian mainland, where the same pathogen only infects frogs.

As part of a program to monitor the status and distribution of platypuses and the fungal disease, information is sought on locations where platypuses are seen and whether or not they show any signs of disease (open sores or wounds on any part of the body).

If you see a platypus, particularly one showing signs of this disease, please contact *either*:

The Senior Zoologist
Forest Practices Authority
Tel: 62338710
Email: Sarah.Munks@fpa.tas.gov.au

Or:
The Biodiversity Conservation Branch
Department of Primary Industries and Water
Tel: 6233 6556



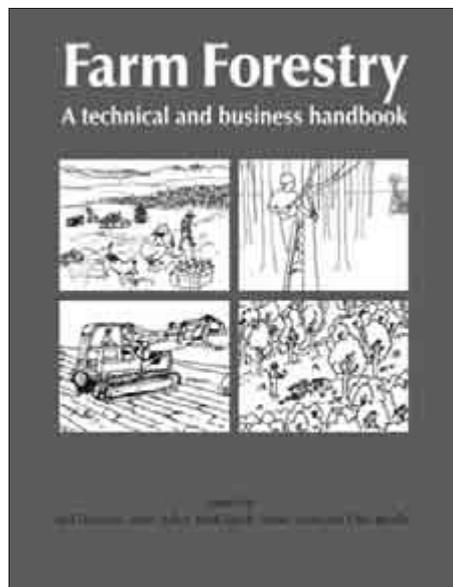
An infected platypus (photograph courtesy of Joanne Connolly)



Book review

Farm forestry: A technical and business handbook

Edited by Neil Davidson, Peter Volker, Mark Leech, Arthur Lyons and Chris Beadle



The recently published *Farm forestry: A technical and business handbook* includes sections by staff of the Forest Practices Authority and by several Forest Practices Officers. It describes the forest practices system and regulations applying to private landowners.

This comprehensive, straightforward, practical guide to farm forestry is designed for people who just want to get on with the business of growing and marketing trees, as well as for foresters and forest advisers. Fully illustrated with simple drawings and diagrams, it is written in language that farmers with little or no background in farm forestry will find familiar and easy to follow. Spiral bound with coated pages that will survive a shower of rain, it's a book you can chuck in the back of the ute for on-site guidance.

The book's 41 chapters over 260 pages – each including a summarising SNAPSHOT – cover all the essential farm forestry topics. There is a Tasmanian focus, but the handbook applies to a wide range of temperate Australian locations. *Farm Forestry* is divided into three parts.

- Part 1, The business of farm forestry, covers financing, certification, estate planning and the forest practices system.
- Part 2, Managing native farm forests, is about native forest silviculture, species and marketability, use of fire, forest health, biodiversity and conservation.
- Part 3, Plantation forests on farms, covers such topics as site preparation, weed control, fertilisers, matching species to site, pruning and thinning.

The price is \$35.00 AUD + postage. The book can be purchased from the University of Tasmania or over the internet:

The School of Plant Science, University of Tasmania, Hobart

Telephone: (03) 6226 7606

Fax: (03) 6226 2698.

<<http://fcms.its.utas.edu.au/scieng/plantsci/newsdetail.asp?!NewsEventId=1818>>

The Forest Practices Authority's Annual Report

The Forest Practices Authority's annual report is now available on the web at <www.fpa.tas.gov.au> Here is a brief summary of the FPA's activities during 2005–06. For more details, see the annual report.

- Scientists from the Forest Practices Authority provided advice in response to around 2159 notifications lodged by Forest Practices Officers. The FPA's scientists maintained a close working relationship with scientists from other government agencies and universities.
- Eight hundred and ninety-seven Forest Practices Plans were certified for native forest and plantation operations, totalling

60,844 hectares on public and private land.

- Forest Practices Plans were certified for 29,936 ha of new plantations, of which 17,426 ha were planted on previously cleared land and 12,510 hectares on ex-native forest sites.
- A total of 1366 ha of native forest and plantations were converted to non-forest use, primarily for agriculture.
- The net effect of clearing and new plantings of forest in Tasmania was an overall increase in the total area of forest of 16,060 ha during the year.
- Tasmania's native forest estate was

reduced by 13,361 ha, resulting in the maintenance of a native forest area equivalent to 96.5 per cent of the native forest area that existed in 1996 (a 3.5 per cent loss since 1996).

- The annual audit conducted by the FPA found that the implementation and effectiveness of Forest Practices Plans on State forest and on private land by large companies was generally above the nominated standards for the majority of factors being assessed.
- Eleven fines totalling \$23,250 were imposed for offences under the *Forest Practices Act 1985*.



A little moral tale from the CFPO

Graham Wilkinson, Chief Forest Practices Officer, Forest Practices Authority

My life as a regulator began when I was eleven years old. The Headmaster at Loftus Primary School was concerned that many of the younger boys were always late for morning assembly. The reason, he found, was that boys were spending their recess time frenetically playing games until the bell sounded for assembly, at which time they would rush, like lemmings, to the toilet block to relieve the call of nature.

The Head, accustomed to military-style discipline, decided to fix this lamentable tardiness through decisive action. He duly appointed two boys from the senior grade as Toilet Monitors. Our role was to occupy the entrance to the toilet block and, upon the tolling of the assembly bell, to close ranks and repel all invaders. I still remember boys from the junior grades dancing from foot to foot and pleading, in desperation, for urgent admittance to the place of ultimate relief. We held our ground, reprimanding them to change their ways and make sure that in future they responded to nature during recess, not during assembly. Our regulatory approach had immediate effect. One bunch of desperados quickly retreated to the adjoining shrubbery to find urgent relief. Those who stayed to argue and swear eventually left in foul temper, late for assembly and plotting their revenge

upon the insidious new regime. I shudder to think how many promising young lives were ruined by the devastating indignity of an accidental spill – those boys probably never even made it to assembly.

As Toilet Monitors, we had done our regulatory job very well – not one boy passed the portal of entry into the toilet block after the tolling of the bell. The Head must have been impressed - the assembly was chaotically late and in a new crop of young Australians we had germinated the innate seeds of disdain for authority and regulation. The Head, perhaps realising the folly of his ways, resisted the temptation to round up and flog the recalcitrant offenders. Instead, he promptly relieved the Toilet Monitors of our duties. Over the next few weeks he used persuasion and praise (and the occasional detention) to achieve reasonable standards of timeliness.

I am inclined to reflect on my failure as a Toilet Monitor when I hear calls for a 'get tough' approach to forest regulation. Some in public life, encouraged by the media, relentlessly call for tougher rules, more 'policemen' and bigger fines as a way to bring forest management under their idea of 'control'. In a perverse way, they use the number and magnitude of fines as a performance measure of the forest

practices system, often criticising the 'inadequate' number of fines in any one year. (So does a doubling of fines from one year to the next indicate that the forest practices system is doing twice as well as the previous year? Or twice as badly? No-one has ever given me a reasonable answer to this question.)

Sensible people know that the two most important performance measures of any management system are the standards currently being achieved and whether they are improving (as determined through monitoring programs and audits). It is proper that the public should debate the best way to achieve good standards. In doing so, it is important to acknowledge that the outstanding success of the forest practices system over the last 20 years has been based on continuing improvement through research, planning, training and monitoring. The system also has some 'regulatory teeth', which are used to address serious failures. However, as the erstwhile Head of Loftus Primary observed, heavy-handed knee-jerk reactions are usually doomed to fail. Long term improvements in management come about by a more balanced approach.

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Festive greetings
from all at the
Forest Practices
Authority



Phytophthora Technical Note



Fred Duncan, Senior Botanist, Forest Practices Authority (right)
Tim Wardlaw, Principal Research Officer (Biology & Conservation)
Division of Forest Research & Development, Forestry Tasmania (left)



The Forest Practices Authority has authorised the use of a technical note (Flora Technical Note 8), dealing with management of *Phytophthora cinnamomi* in production forests.

The Technical Note was prepared by Tim Wardlaw (Forestry Tasmania), Fred Duncan (Forest Practices Authority) and Mark Wapstra (now with EcoTAS consulting services). Its preparation involved liaison with other stakeholders, including DPIW and Forest Practices Officers working in different parts of Tasmania.

Phytophthora cinnamomi is an introduced fungus which can have a devastating effect on many native plant species. Its common name is cinnamon fungus.

The fungus infects the roots of susceptible species, reducing their ability to take up nutrients or water. This can make the effects of *Phytophthora* most obvious in drought periods.



Distribution of *Phytophthora cinnamomi* in Tasmania (as at April 2005) based on point locations of field symptoms that have been confirmed by laboratory testing. Field observations suggest a much wider distribution in local areas with favourable vegetation and conditions.

NOTE: This distribution map represents more than 30 years of records and does not necessarily indicate current *Phytophthora* activity within an area.

Many susceptible species occur in dry forests, scrub and heathlands in the relatively warm, moist lowland areas of the state. They include *Xanthorrhoea* species (grasstrees) and many epacrids and legumes which are important in the functioning of these ecosystems because they provide food and shelter to many animal species. Some rainforest species (e.g. celery-top pine and pandani) are also susceptible – but cool soil temperatures under rainforest generally restricts *Phytophthora* infection, except in canopy gaps (e.g. along edges of tracks) or disturbed areas after fire or logging. Many of Tasmania's threatened plant species (including *Xanthorrhoea bracteata* and *X. arenaria*) are susceptible to the fungus.

Phytophthora can be transported from infected areas into uninfected areas by spores in soil particles. Spores can be carried in soil attached to vehicles and heavy machinery, the boots of bushworkers or bushwalkers, or the paws of animals. Another important vector is material (e.g. gravel and fines) which originates from infected quarries. Once established within an area, spores can move rapidly downslope in surface or ground water. Rates of up to 150 m/year have been measured.

Although trials show that use of chemicals (phosphoric acid) can give susceptible species some resistance to the disease, in reality *Phytophthora* cannot be practically eradicated once it is established in an area.

The Technical Note gives information on symptoms of *Phytophthora cinnamomi* infection, and lists susceptible plant species and communities. Many of the susceptible forest communities are dry sclerophyll forests occurring on siliceous substrates (sands, gravels, sandstones or quartzite). They include several communities which are threatened in Tasmania, including *Eucalyptus ovata* forest and *Eucalyptus tenuiramis* forest.

The Technical Note indicates hygiene measures that should be implemented if *Phytophthora*-susceptible species and communities are present in a proposed operational area. Photographs illustrate some of these hygiene procedures. Measures that need to be considered include:

- Locations of roads and tracks (e.g. avoid siting roads along ridges that form boundaries between infected and uninfected areas; control unauthorised access);
- Construction and maintenance of roads and tracks (e.g. use local gravel from a quarry that has been certified as being *Phytophthora*-free; undertake works in dry weather if possible);
- Washing of earthmoving machinery (see next page);
- Quarry maintenance procedures (e.g. maintain good drainage in the quarry and access roads; stockpile topsoil away from the active quarry face)

The Flora Evaluation Sheets used for preparation of Forest Practices Plans allow FPOs to determine if *Phytophthora* hygiene measures are needed. In most circumstances, the prescriptions in the Technical Note can be readily incorporated into the FPP. It is important that contractors are fully aware of the prescriptions. The FPO must contact the FPA for specialist advice if there are problems with implementing the hygiene measures specified in the Technical Note, or the FPO thinks that the procedures are not warranted in a particular coupe.

The forest industry has been proactive in trying to reduce the spread of *Phytophthora* in Tasmania. This has been through:

- Research into the pathogen and determining the susceptibility of native species;
- Development of quarantine and hygiene procedures;



The views expressed in this newsletter are not necessarily those of the Forest Practices Authority. Articles from this newsletter may be reproduced. Acknowledgment of the author & FPA is requested.

Phytophthora Technical Note (continued)

- Programs for quarry certification;
- Training and monitoring;
- Delineation of Special Management Zones (*Phytophthora* Management Areas) to provide additional protection to important environments.

Use of the *Phytophthora* Technical Note integrates many of these elements, and will further assist in reducing the spread of this destructive forest pathogen.

The *Phytophthora* Technical Note can be downloaded from the FPA website at <www.fpa.tas.gov.au> Copies are also available from the Forest Practices Authority on request.

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A clump of *Xanthorrhoea australis* showing dieback from *Phytophthora cinnamomi*. Tasmania's three *Xanthorrhoea* species (two of which are threatened) are highly susceptible to *Phytophthora*. Grasses are an important food resource for animals after fire, and provide shelter in lowland dry forests. They occur in the Furneaux Islands, the north and east of Tasmania, and extend as far south as Bruny Island.



Three steps in limiting the spread of *Phytophthora cinnamomi* on tracked vehicles: first chipping off compacted soil from tracks with a crowbar, then a high pressure water spray removes general accumulation of soil (note how tracks have been lifted off the ground) and finally, at the completion of washing the dozer is lowered onto rubber tyres in preparation for loading onto a float. (Photographs by Forestry Tasmania)