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TASMANIAN COMMUNITY FOREST AGREEMENT
RESEARCH INTO ALTERNATIVES TO 1080

NEWSLETTER 15

August 2009

IN THIS NEWSLETTER

PROJECT MANAGER'S INSIGHTS

With the end of the Program fast approaching, less than 12 months to go, I'm pleased that in most of my discussions with people when I get asked questions along the lines of "What about such and such, have you looked at that?", generally the answer is yes.

That's not to say we've addressed every question or looked at every alternative out there, but I feel increasingly confident that given the time-frame and resources we had, we have fairly and intensely looked at a whole range of viable alternatives to 1080 across the farming and forestry sectors, and in doing this we've moved forward in our understanding on both the magnitude of browsing damage, the options that are out there to control it, and that we've identified a number of promising alternatives that can help with the transition from 1080 poison for crop protection.

I found the release of the Wallaby Fencing Guide at Agfest this year to be particularly satisfying, in that it was the first real output that we could put in farmers hands to say that there are options out there for long term grazing control from wallabies, because others are doing it, and here's the proof.

In a few short pages we can never cover all of the activities of the Program over the last 7 or 8 months, but I hope the articles below stimulate your interest, and as always, if you want to know more about anything you read or have ideas or questions then contact me john.dawson@dpipwe.tas.gov.au or by phone on 03 6233 6728.

OVERVIEW OF 2009 WORKSHOP

The Annual Alternatives to 1080 workshop was held at the Mercure Hotel in Launceston on Wednesday 6th of May.

Briefings covered a wide range of projects, including:

- Update on the development of Feratox™ as an alternative toxin – Dr Charlie Eason, Connovation /Dr Mick Statham – TIAR,
- Wallaby proof fencing and the development of "Wombat Gates" – Dr Mick Statham TIAR,
- Manipulating seedling palatability for non-lethal browsing management – Dr Alison Miller,
- Wallaby home range shifts in response to lethal control and fencing – Dr Natasha Wiggins,
- Impacts and economics of wildlife browsing on Tasmanian pastures - TIAR,
- Nil Tenure Planning and Sub catchment Scale Integrated Browsing Damage Management – NRM North and RDS,
- An investigation and demonstration into the effectiveness of shooting techniques as an Alternative to 1080 – TPMS,
- Smelly stockings – improving seedling protection – Connovation.

For anyone who was unable to attend, and would like more information on any of the above, you can contact the Project Manager for any available papers and presentations.

AGFEST 2009

The Alternatives to 1080 Program had a large presence in the DPIW tent at Agfest this year.

Our display focused on wallaby proof fencing, pasture monitoring, effective shooting and trapping as a new approach to managing browsing wildlife.

Department of Primary Industries, Parks, Water and Environment AGFEST Exhibit 2009.

The interest in our work was extremely high, with the four staff on roster each day having very few quiet moments. Over the course of the three days we dealt with hundreds of enquiries around wildlife management issues, handed out around 400 Wallaby Proof Fencing Manuals (see below) and discussed all aspects of wildlife control.

Following up from this, a significant amount of time has also been spent since Agfest following up on queries, and assisting landholders who came along to Agfest with wildlife browsing problems.

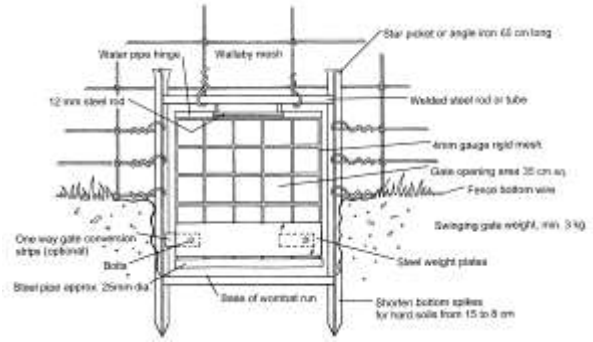
WALLABY PROOF FENCING GUIDE

A 44 page booklet titled 'Wallaby proof fencing', sponsored by the Alternatives to 1080 Program, was produced by Mick and Helen Statham of TIAR and launched at Agfest this year.

The manual was compiled from field visits and interviews with Tasmanian farmers from across the State and Bass Straight Islands on how they had established wallaby proof fencing on their farms and overcome problems from creek crossing to wombats.

The problem of wombats regularly digging under wallaby fencing has been a long standing impediment to wallaby proof fencing, and the guide includes preliminary results from a trial conducted to test different gates to determine which designs will allow access by wombat but not wallabies.

This research has resulted in a wombat gate design that appears to exclude all but the largest Bennetts Wallabies, and a specific brochure is now available for anyone interested in how to build a wombat gate.



Recommended Wombat Gate Design

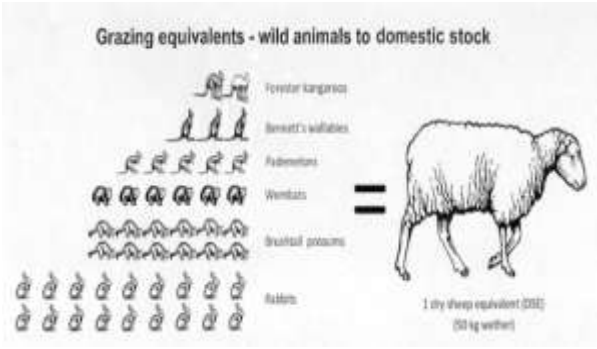
Copies of the Wallaby Proof Fencing guide are also still available by contacting the Wildlife Management Branch on 03 6233 6556 or via email: wildlife.enq@dpipwe.tas.gov.au. The guide can also be directly downloaded from DPIPWE's website: www.dpipwe.tas.gov.au/browsingmanagement

Copies of the wombat gate brochure will also soon be available on this website.

PASTURE MONITORING

One of our key messages at Agfest was the importance of measuring and quantifying pasture losses to wildlife.

As shown in the diagram below, wildlife grazing can have a significant impact on farm productivity, and until a landholder has quantified that impact, they don't really know how effective their controls are.



Page 40 of the Wallaby Fencing Guide contains information on how to estimate pasture losses, and a

separate brochure, produced by the same team at TIAR, is also available from the Program with more information on building exclosure plots and pasture monitoring.

Meat and Livestock Australia have an excellent brochure available on measuring pasture growth, downloadable from **http://tinyurl.com/MLARuler**

SHOOTING EFFECTIVELY

Shooting is one of the primary control tools used in Tasmania for controlling wildlife damage.

The Program has funded several projects looking at night vision scopes, silencers and other forms of shooting, but our findings to date show that in many cases it's getting the basics right which will have the most impact on effective browsing control.

Reflecting this, and in consultation with DPIPWE's Wallaby Management Officer, the Program released a small handout outlining 10 ways to improve shooting effectiveness for landholders. These are:

1. Know why you're shooting. Implement pasture monitoring so you know what you're losing and if what you're doing is working.
2. Never "blast away at them". Only take shots you know you'll get. Injuring an animal is inhumane; missing one is just teaching it to hide.
3. Realise that if the problem has got out of hand you may need a lot more effort up front to reduce the problem to an acceptable level.
4. Always shoot well, or use good shooters. Quality shooting will deliver much more effective results than just lots of shooting.
5. Implement a simple test for all shooters (including yourself): Anyone who can't place six shots in a 5cm target at the distance they'll be shooting from and with the rifle they'll be using shouldn't be shooting.
6. Buy yourself a good rifle with a darn good scope. It's often the difference between a hit and a miss.
7. Clean and sight in your rifle regularly. A poorly maintained rifle won't consistently shoot accurately.
8. If you don't have the skills or time to learn to shoot effectively, pay someone who does. Consider approaching good recreational shooters or dogging teams to do the work, or look at other options like fencing and trapping.
9. Set your ATV or vehicle up for shooting by adding some shooting rests and/or a spotlight holder.
10. Vary the way you shoot, for example use a coloured spotlight, use different vehicles, muffle your engine, go shooting on foot, vary your route, drive in a different direction; or go shooting a different time of night.

Anyone interested in discussing these points, or who wants copies of the research reports we have funded in these areas should contact the Project Manager.

TWO NEW FUNDING OFFERS

Earlier this year the Program ran a third funding round, specifically offering funding for research into ways of improving seedling stockings and repellents as a barrier control.

This area of research was strongly supported by the private forest growers who felt that these were the key browsing control options within an integrated browsing control strategy.

Two funding offers have been made under this round, totalling nearly a quarter of a million dollars. These are:

SEEDLING STOCKING MACHINE

A $112,000 grant offer was made to Transplant Systems for the purpose of designing, constructing and operating a prototype seedling stocking machine (SSM) which will both mechanise and automate the nursery process of placing a "seedling stocking" onto a seedling.

The aim of this deed is to attempt to significantly lower the cost of seedling stockings used by the Tasmanian forest industry, thus making them a more attractive browsing control option, and reducing the usage of 1080 poison.

The proposed machine will be designed to either work as a standalone unit, or be included as a unit process in a more mechanised dispatch line.

It is hoped that the prototype will be finished in August / September this year, and if successful be available for next year's planting season.

'SMELLY STOCKINGS'

A second new deed was signed in June this year with Connovation Pty Ltd for the purpose of investigating the integration of repellents that have proven effectiveness in reducing wallaby, possum and/or deer browsing into the process of applying seedling stockings either by applying a compatible repellent

formulation onto the existing stocking, or developing a new polymer based seedling stocking to reduce browsing damage.

The purpose of this is to improve the overall effectiveness of seedling stockings, by introducing repellents that are released over time. The project combines the skills and experience of technologists, applied researchers at the Tasmanian Institute of Agricultural Research (TIAR) and local suppliers of plantation services.

The platform for this new product development is the recent work carried out under the earlier repellent deed (see Newsletter 14), and earlier identification of repellents suitable for uptake into and release from biodegradable plastics.

MANIPULATING SEEDLING PALATABILITY

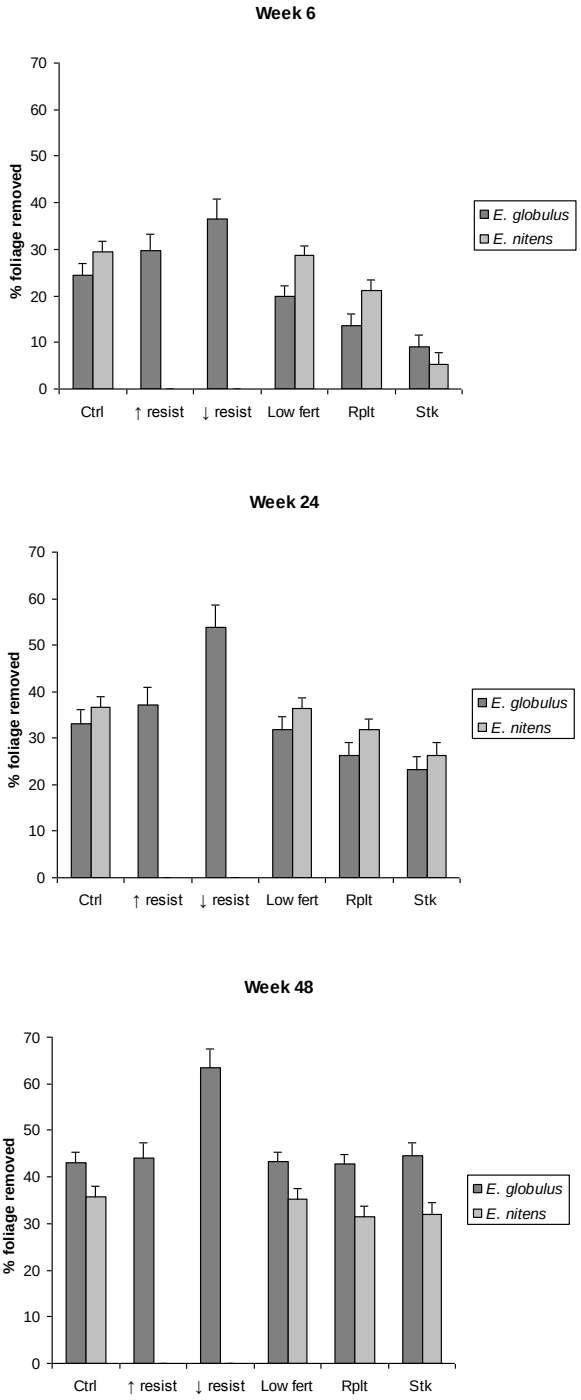
Dr Alison Miller presented her final report "Manipulating seedling palatability for non-lethal browsing management" at the Annual Workshop this year.

This was one of the Program's largest research projects, and looked at the use of naturally resistant / susceptible seedling stock, a chemical repellent (Sen-Tree), modification of nursery fertiliser regime, the use of natural vegetation on coupes and the use of mesh stockings in reducing browsing on plantations.

The first phase of the research found that out of the combinations tested, the most effective treatments at reducing the severity of browsing damage in the short term were seedling stockings and a combination of chemical repellent (Sen-Tree) and low nursery fertiliser.

Interestingly though, by week 48, all treatments, except the stock with low genetic resistance, were not statistically different to the untreated control in terms of foliage loss (See figure in next column), indicating that the benefits of most of these controls, including stockings and repellents, was only in delaying browsing losses, not in stopping them.

The low genetically resistant stock was the only control option that had a longer term (48 week) affect, though in this case it was low resistance stock and it got eaten more, not less. However, this implies that if trees of increased resistance were planted then this increased genetic resistance effect would be longer lasting as well. Supporting this, there was some promising (though not statistically robust) evidence, shown in Appendix 2 of the report, that the one seed lot which had a very high level of sideroxylonal (a natural deterrent) also had the lowest overall foliage loss.

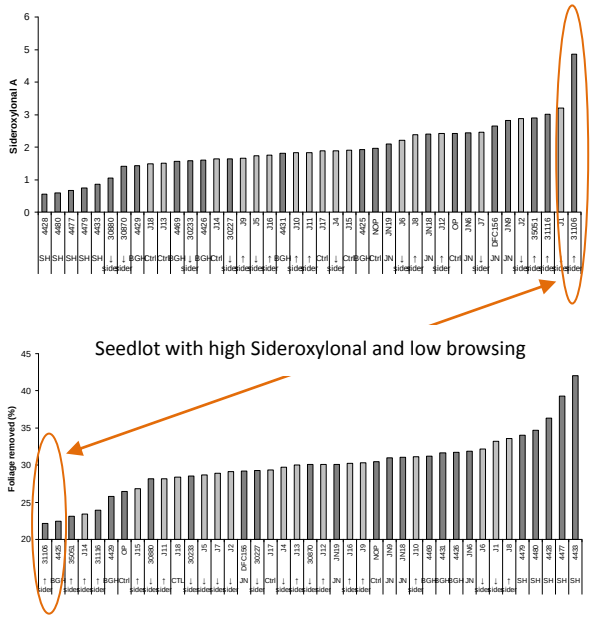


Summary of treatment effects on E. globulus and E. nitens seedlings in Trial 1 at 6, 24 and 48 weeks after planting, averaged across eight sites.

This result shows promise for future research in this area which may identify stock which is genetically more resistant to browsing in the longer term.

However with seedling stock already bred for several other genetic characteristics, there are dilutive effects of breeding for additional characteristics such as sideroxylonal, so any advances in this area may have to be balanced against potential trade offs in volume growth, pulp yield and other key characteristics which stock is currently bred for.

On the other hand, if positive genetic correlations between resistance and other desirable traits of interest such as resistance to other pests or wood properties can be found then there may be added incentive to consider deploying resistant stock and/or including resistance in breeding programs.



Summary of a) sideroxylonal A levels and b) browsing severity (% foliage removed) averaged over the 48-week period for all eucalypt seedlots used in Trial 1. Dark grey = *E. globulus*; Light grey = *E. nitens*. Note: average of two technical replicates consisting of pooled foliage from 10 seedlings receiving standard nursery fertilisation.

STOCKINGS & REPELLENTS TRIAL

In phase 2 of this project, the most effective short-term treatments: seedling stockings and repellents, were tested in further field trials to directly compare the relative effectiveness of these treatments across a range of sites and during winter, as opposed to spring plantings. The results confirmed that both treatments were able to delay and reduce browsing damage, with the combination of stockings and repellent being particularly effective. When used together, seedling stockings and repellents delayed browsing by 14 weeks compared with control seedlings. After 24 weeks, browsing severity of seedlings with both treatments was just 20% that of control seedlings.

These results have important and immediate implications for tree growers. In areas with low browsing intensity, these controls could be enough to reduce browsing by themselves, and in areas of higher browsing pressure, the browsing delay could be enough to allow alternative controls to be implemented.

Following on from this research, the Alternatives to 1080 Program has provided additional funding to the CRC for Forestry to evaluate the second phase trials at 12 months and both trials at 2 years of age, and has also funded a small trial looking at the effects of seedling stockings on tree form, which was one of the issues raised by the report.

Finally, as noted above, based in part on these findings, the Program has funded further research and development into the application of seedling stockings and integrated stockings and repellents.

Full copies of the report are available for download from **http://tinyurl.com/millerreport**.

NIGHT VISION SCOPE RESEARCH

A final report into the Use of Night Vision Scopes has now been completed by Tasmanian Plantation Management Services.

The project investigated the effectiveness of shooting, using night vision rifle scopes as a means of controlling browsing by Brushtail possum and Bennett's and Rufous wallaby. The use of night vision equipment was compared with standard shooting methods using spotlighting and demonstrated that the use of night vision technology could be a long-term, cost-effective means of control of native pest animals.

Use of the night vision technology produced significantly higher numbers of kills per hour of shooting and significantly increased rates of kills (animals shot versus animals detected) for the two wallaby species.

For all three species escape rates (animals seen that were not shot) were much higher for spotlighting (around 50%) compared with the use of night vision scopes (around 5% or less).

The higher efficiency and effectiveness of night vision technology occurred at all four test sites,

demonstrated its applicability across a range of environments of different species make-up.

There are however some significant differences and impediments to the use of night vision scopes. Firstly they require different shooting techniques, with the shooter firing from a stationary position.

They also require some pre-shooting preparation in setting up of food dumps as bait which increases the cost of the operation, especially when large travel distances are involved.

Shooting with night vision scopes cannot cover as large an area as spotlighting but can access areas inaccessible to vehicles.

Comparative costs were around $6 for each animal killed using either method with cost differences being marginal (+/-5%).

There are however substantial costs involved in purchasing night vision technology, for example, over $4,000 in the case of this trial.

OTHER NEWS

NEW WEBSITE

The Alternatives to 1080 Program recently launched a website in time for Agfest dedicated to browsing management information, and in particular the reports and findings from this Program. The address for this site is now www.dpipwe.tas.gov.au/browsingmanagement.

With the new communications officer on board (see below) it is planned that by the end of August a summary of research deeds, including any associated reports, will be available on this site. Also available from this website is information on measuring pasture losses to browsing wildlife and a wallaby fence calculator.

STAFFING CHANGES

Over the last six months, the Program has welcomed Adrie Konyn on board, replacing Brett Donlan.

Adrie has a background in plantation management, plantation browsing control and most recently as a field officer in the Fox Eradication Branch.

Adrie's main focus since he started in February has been on the development of trapping and trapping strategies and research trials into alternative shooting strategies.

Kate Gill has more recently joined the Program for 12 months taking on the role of Communications Officer.

Kate also brings a wealth of knowledge from her previous position (to which she will return) in the DPIW Game Management Unit, and will be focusing over the next 12 months on ensuring that the findings of the Program aren't just published and forgotten, but are integrated into DPIPWE's ongoing functions and more importantly pushed out to the landholders who are dealing with wildlife browsing problems.

DEPARTMENTAL MERGER

On July 1, 2009 the Parks and Environment components of the Department of Tourism, Parks, Heritage and the Arts were amalgamated with the Department of Primary Industries and Water to create the Department of Primary Industries, Parks, Water and Environment (DPIPWE).

To date, this change has not affected the Alternatives to 1080 Program significantly, with perhaps the biggest change being a change to our email and web addresses.