

## The dreaded 'Bruco': managing the risk in both ewes and rams

By Greg Curran  
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A common question asked by landholders is 'How does brucellosis work, and how should we manage our ewes once we know we have an affected ram that has been in with them?'

*Brucella ovis* organisms live in the reproductive system of rams—namely, in the testes and in the pelvic organs that produce the fluids that protect sperm. Rams pass these organisms to ewes at joining. Because brucella can live in rams throughout their lives, brucellosis is not a short-term disease but one that is usually managed by culling the affected rams.

An infected ewe can still conceive, as the brucella organism infects her only in early pregnancy. The 'throw of the dice' question is whether the embryo will be killed and when this will occur.

A ewe—particularly an older ewe—that has been infected in the past and is now immune can respond to the infection and get rid of the brucella before it kills the embryo.

However, in other ewes that are not immune, the brucella organisms multiply after joining and kill the embryo before it can embed itself in the wall of the uterus. Sometimes the organisms take more time to act and kill the embryo after it implants in the wall. After this infection, the ewe nearly always eliminates the brucella and becomes immune.

Understanding how long these events take helps landholders to understand how to manage and test for the disease. It takes about 3 weeks for a newly infected ewe to respond to the infection and start to eliminate it. It takes some time for a damaged embryo to die and be eliminated; the reproductive system also needs time to clean itself up and be ready again for a successful conception. This might take the equivalent of 2 or 3 cycles after the embryo is killed. If the pregnancy lasts until the embryo implants itself in the wall, it will take longer (4 to 6 cycles) for the dead embryo to be eliminated and the uterus to normalise itself. *The general recommendation is to allow at least 3 months for infected ewes to get on top of the infection before you put them out*



Above: Nearly all ewes will throw a brucellosis infection off. Landholders need to wait at least 3 months before rejoining infected ewes with clean rams. The rams must be tested again after joining to ensure that no ewes have carried the infection over, despite the low risk. Photo by Sally Ware

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*with clean rams. This minimises the risk of rams being infected by these ewes.*

All, or nearly all, ewes throw the brucella infection off. In flocks with a high proportion of infected rams (50% or more), the ewes are exposed to a lot of brucella organisms during joining. It appears that in some (but not all) of these heavily infected flocks, a very small number of ewes can carry the brucella organisms over from one joining to the next. It takes only one or two persistently infected ewes among thousands of clean ewes to reinfect clean rams. This doesn't happen often, but it is always a concern. *To be sure that you've eliminated infection in both rams and ewes after a testing program, it is essential to test the rams again after joining. If the results are negative, then you can be sure that no ewes have carried infection over against the odds and reinfected the disease-free rams.*

The early maturity of the new breeds has meant that infection in ewes and their lambs has become more important. With Merinos, it is normal practice to put rams out for less than 4 months and for all ram lambs to be marked by 4 to 6 months of age. Merino ram lambs mature relatively late, at perhaps 9 months or more, so there is little or no chance for Merino ram lambs to cover ewes that might still be infected from joining. In contrast, with breeds that grow and mature quickly, some ram lambs are able to cover and serve ewes at about 4 months of age; they can then become infected and pass the disease on. With continuous joining, unlike with once-a-year mating, ewes never have the 3 months or more sexual rest needed to help break the cycle of re-exposure and be cured of infection. Early-maturing ram

lambs may not always be marked by 4 months of age and can thus become infected and spread brucellosis before castration stops its transmission. Double joinings also increase the risk of both persistence and spread of infection, even in Merinos.

We recommend that if Dorpers, Damaras, or rapidly maturing wool sheep are infected and are being tested to eliminate brucellosis, then landholders should take the following steps:

- Remove rams from ewes and spell them for at least 3 months.
- Mark all ram lambs by 3 months of age for at least 1 year, or until you can confirm that brucellosis has been eradicated from both the rams and the ewes.
- As with Merinos, make sure that all rams have a secure paddock that contains no other sheep (no killers, no rigs, no poddies, no ewes) that could be infected and could reinfect clean rams.

As a vet working with landholders who have had infected rams, I work around the 3 weeks it takes for a ram to respond to a new infection. A second test is done on the rams at least 3 weeks after the first, as this gives them sufficient time to produce antibodies to any infection. Other test intervals are also possible. If a clean ram becomes infected just before, or at the time of, yarding for a test, then the brucella won't be detected before 3 weeks has elapsed. If there is little or no brucella in the rams and no evidence of it spreading, then you should wait about 6 weeks between tests of the rams. This time frame gives rams with developing or hidden infection a chance to produce antibodies that we can detect in the blood tests.



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Above: Lillian and Ivy Anderson from 'Cymbric Vale' Broken Hill with a Dorper ram the family call 'Mr Congeniality'. He has just been given the all-clear from his blood test for brucellosis. *Photo by Greg Curran*

# A new service for landholders in the Western Division of NSW

**N**oel Sharrock, a Precision Agriculture Consultant, has released a Property Asset Mapping service to help landowners in the Western Division of NSW to better manage their pastures, water points and stock grazing pressures. Noel has just completed mapping a property at Mossgiel where the owner is dividing large paddocks into smaller paddocks in order to make more efficient use of the available pasture and have better-located water points. The entire property (12 772 ha) was mapped for existing paddock boundaries, water points, gates, sheds, yards and vegetative features.

The areas of existing paddocks were calculated and then a 'what if' exercise was performed in regard to the size of proposed new paddocks and the locations of new fence lines. The plan was overlaid onto Google Earth to check the proposed new fence locations in relation to features such as trees and tanks. The map was left on Google Earth on the customer's computer. The exercise was done at the kitchen table, using designated software that Noel has installed on a

laptop computer. Next day the locations of the new fence lines were 'ground truthed' with the help of Noel's high-accuracy GPS. Sighter pegs were installed at strategic points along the proposed new fence lines in preparation for grading. After the map is finalised the client will receive a laminated A1-size wall map, as well as a printed 30-page (A4 size) pad of the property map for use in the day-to-day running of the property.

By using a high-accuracy GPS (accurate to within 2 cm) Noel can map the elevations of areas on the property for contour drains and contour bank ponding on clay pans, as well as the proposed locations of water points and pipelines. All mapping is done from a four-wheel motorbike; this gives Noel excellent mobility and accessibility to the property's features.

Western Division landholders can use this unique new service to help make their properties more efficient and profitable. Noel can be contacted on 0401 504 176 (see advertisement below for further details). As a guide, the charge for the service is 4.5 cents an acre or 11.25 cents a hectare plus GST; this charge may increase in rougher country.



**Farm Asset Mapping**

- Assist in infrastructure planning
- Map existing paddocks for size, water points, gates, vegetative features etc.
- Map proposed new paddocks and "ground truth" to locate new fence lines and calculate area of new paddocks
- Paddock mapping will assist in more efficient grazing management
- Map printed in A1 size and Laminated (x1)
- Map pad (30 maps) to assist seasonal labour and day to day operations and future planning of the property assets



Noel Sharrock (Dip Ag Science) Email: sharrock@netconnect.com.au  
**0401 504 176** PO Box 1224, Horsham VIC 3402  
ABN: 31 164 574 344

**PRECISION AG** consulting services

# Catchment Management Authority boundaries change

Land managers and community members in Western NSW are assured that it will be business as usual for services provided by the Catchment Management Authorities (CMAs), despite a reduction in the number of CMAs from 13 to 11 and boundary changes announced last week under the *Catchment Management Authorities Amendment Order 2012*, which was gazetted on Friday 19 October.

The Lower Murray-Darling CMA has been incorporated into the Western and Murray CMAs, whereas the Sydney Metropolitan CMA has been incorporated into the Hawkesbury-Nepean CMA.

The Western and Murray CMA boundaries have been redrawn. The Western CMA has expanded to include Broken Hill, all of the Central Darling Shire and the Unincorporated Area. The remaining area of the Lower Murray-Darling Catchment, Wentworth and Balranald Shires, has been amalgamated with the Murray CMA.

In addition, the Western Catchment boundary with the Central West CMA has been revised to match the Western Division boundary.

Chair of the Western CMA Rory Treweeke says that transitional arrangements are in place to ensure that CMAs will continue to provide service to their communities.

‘Although there are significant changes for the organisations involved, these should not impact on landholders and community organisations at all’, Mr Treweeke said.

‘The on-ground staff of the CMAs have a wealth of experience in the rangeland and river country of

this area and will continue to provide advice and service to the catchment communities.

‘I’m particularly happy that the eastern boundary of the Western Catchment has been realigned with the Western Division boundary. The Western Division is a clearly understood boundary that has long been recognised by anyone living on either side.

‘This will result in reduced confusion for landholders and clearer distinction for statutory obligations such as native vegetation issues. It’s a common sense solution that’s indicative of the proposed changes to improve services to land managers’, he said.

Alex Anthony, Chair of the Murray CMA, says that the changes are aimed at improving service delivery financial savings.

‘The improvements from the CMA amalgamations will result in significant efficiencies.

‘The need to streamline services in preparation for entry into the Local Land Services is behind the amalgamations’, Mrs Anthony said.

‘We have a lot in common in the western end of the NSW Murray catchment and we will all be working together to make it a smooth transition and deliver natural resource management projects to the affected communities’, she added.

Local Land Services is a new fit-for-purpose regionally based organisation that will incorporate the CMAs, Livestock Health and Pest Authorities and Department of Primary Industries advisory services.

The NSW Government welcomes feedback on the establishment of Local Land Services. Visit <http://haveyoursay.nsw.gov.au/locallandservices>

For further information contact the following:

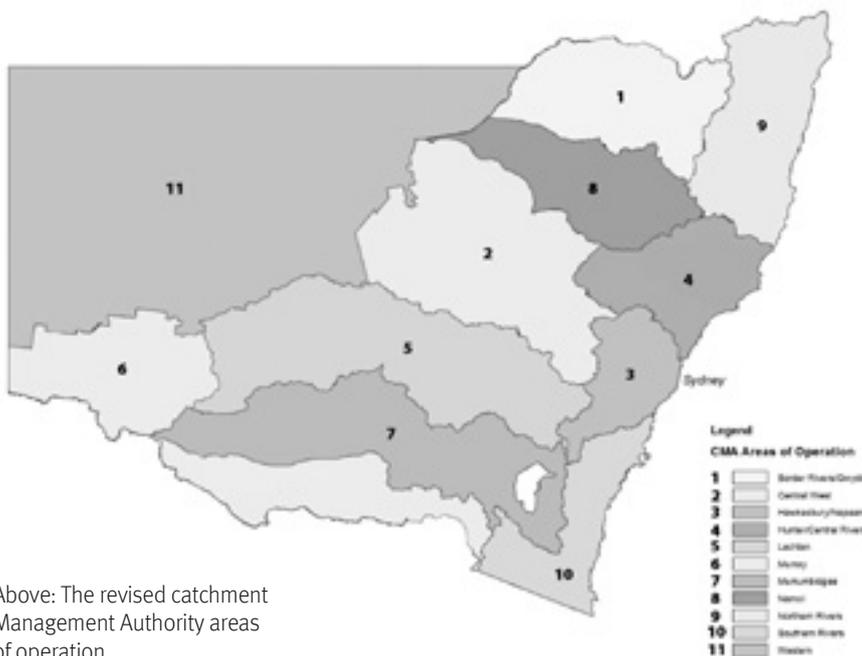
## Western CMA

Rory Treweeke, Chair. Phone 0428 634 204  
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## Murray CMA

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Above: The revised catchment Management Authority areas of operation.

# Funding to control unmanaged goats

Funding is available for Western Catchment landholders to improve grazing management by controlling unmanaged goats on their properties.

The Western Catchment Management Authority (CMA) is administering the funding, which has been provided by the Australian Government's Clean Energy Future Biodiversity Fund.

This initiative builds on the success of previous programs where CMA-funded goat-proof TGP (total grazing pressure) fencing of paddocks has enabled landholders to vastly improve pasture growth and ground cover.

The improvements have been achieved through better control of grazing (regardless of the type of stock carried) and by implementing rotational practices or periods of rest and better matching of feed supply to numbers of head.

TGP refers to the total impact of all grazers—including stock, native fauna and feral animals—on a pasture. TGP fences are designed to be impassable to goats and are usually based on either mesh (Hinged Joint™) or multi-strand electric fencing (Westonfence™). Fencing preferences will vary among landholders.

## Objectives of the program

The funding is aimed at constructing perimeter TGP fencing around 'landscape-scale' areas broader than individual paddocks, such as at property boundaries or on a multiple-property scale.

Feedback from landholders has suggested that controlling goats by fencing broader areas such as boundaries will be more cost effective than using a paddock-by-paddock approach. Once a goat-proof perimeter has been established, the design of internal fences can be better matched to the type of stock carried.

We are particularly seeking proposals from landholders in the Bourke, Cobar and Ivanhoe areas, where the densities of unmanaged goats are highest. Individuals or groups of landholders who want to substantially improve their pasture management by improving their control of grazing pressure are encouraged to apply.

The program is not intended to subsidise primary production, nor is it to be used to develop feral goat marketing or trading enterprises.

Applicants will need to demonstrate how they intend to manage their land to achieve better pastures once goat movement is under control. They will also be required to enter into

a 10-year agreement to ensure that improved groundcover and pasture management practices are maintained. Previous experience suggests that improvements in ground cover of more than 50% are achievable in most situations.

## What are the benefits of controlling goat movement with TGP fencing?

Some landholders feel that goats can't be controlled and that the income from harvesting free-ranging goats is too good to lose. Others believe that unmanaged goats don't eat much pasture anyway—just shrubs.

Nevertheless, there is a growing number of Western Catchment landholders who have controlled the movement of goats with TGP fencing. Their experience is that:

- Both the number of free-ranging goats and their impact on pastures have been significantly underestimated.
- Pastures respond quickly. Once areas are protected from uncontrolled grazing, landholders have the ability to manage stocking pressures and spell country without the presence of unwanted grazers.
- Ground cover, pasture yield and grass species diversity increase significantly. Grasses other than speargrass appear.
- Improved ground cover slows runoff during rainfall, resulting in better infiltration. Grasses respond better to lighter falls of rain.
- More perennial grasses, better ground cover and improved runoff retention increase resilience to drought.
- As the condition of the country improves, its productivity increases. This generates more options for a sustainable and productive grazing enterprise.
- Options for managing invasive scrub increase. Fuel becomes available for controlled burning.
- Management of kangaroos, pigs and possibly wild dogs becomes easier.
- Managed goats can be turned-off for market on a more consistent basis.
- Biodiversity visibly improves as habitat for seed eating fauna increases.

Recent measurements by NSW DPI in the Cobar district have revealed that a TGP-fenced paddock rotationally grazed by goats and sheep grew an average of 800 kg/ha pasture dry matter with

Russell Grant  
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Western CMA

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greater than 70% ground cover. A comparable, adjacent paddock without TGP fencing and subject to free access by unmanaged goats produced 125 kg/ha of dry matter; there was less than 40% groundcover and less than half the pasture species of the managed site.

### **How will the program work?**

The funding will be available to Western Catchment landholders in the broad Bourke, Cobar and Ivanhoe area, either as individuals or working in partnership with neighbours who will collaborate to control unmanaged grazing and implement improved pasture management practices.

Proposals must control the movement of unmanaged goats through the erection of TGP fencing to create an enclosed 'goat management zone'. This may include fence upgrades or new constructions, and projects may be linked to existing TGP fencing to improve cost effectiveness.

Existing Western CMA minimum fencing standards will apply. Cost-sharing arrangements have yet to be finalised but will be similar to previous Western CMA incentive rounds, which were based on a 1:1 ratio with special provisions for boundaries. In the past this has included both cash and in-kind contributions from landholders.

Successful applicants will be required to enter into a management agreement to ensure that fencing is maintained in goat-proof condition and groundcover targets are met for a period of 10 years.

Landholders will be required to submit grazing management plans with their applications. These can include the use of goats as a

managed resource, provided that internal infrastructure is in place to manage the goats appropriately.

The Western CMA recognises that once a goat-proof perimeter encloses a large area, appropriate infrastructure is necessary to initially get the goats under management. For this reason, proposals may include the new construction of up to two trapyards per property; the cost of these will be part of the landholder's contribution to the project budget.

### **Application process**

The Western CMA is now seeking expressions of interest in this program.

**Prospective applicants should obtain from the CMA and complete a one-page Expression of Interest form for delivery to the Western CMA by 31 January 2013.**

Each applicant will then be assigned a case officer to help develop a more robust project proposal, including mapping, a budget and a management plan.

All funding proposals will be assessed through a competitive process before an independent assessment panel. The proposals will be scored and ranked according to criteria based on project and Western CMA objectives. These criteria will include cost effectiveness; ability to construct the infrastructure to a budget and timeline; the proposed pasture management regime when the TGP fencing is in place; willingness to enter into a project management agreement; and readiness to showcase results through field days or case study reports.

Successful applicants will be required to enter into a management agreement with the Western CMA for 10 years to ensure that fencing is maintained in a goat-proof condition and that grazing practices attain satisfactory levels of ground cover. This agreement will be in the form of an Incentive Property Vegetation Plan (PVP) linked to land title. The link to title through a PVP is necessary to ensure that project outcomes are maintained if the property is sold. This is an important consideration if multiple landholdings are involved in the one proposal.

### **Further information**

**For further information, please phone freecall 1800 032 101 or contact your local Western CMA office at:**

**Cobar (02) 6836 1575**

**Bourke (02) 6872 2144**

**Broken Hill (08) 8082 5205**

**Or visit [www.western.cma.nsw.gov.au](http://www.western.cma.nsw.gov.au)**

Below: Landholders in the Cobar, Bourke and Ivanhoe areas can apply for funding to construct goat-proof fencing around large areas such as property boundaries to protect such areas from uncontrolled grazing by free-ranging goats.  
*Photo supplied by Western CMA*



# Dog fence matters

The annual inspection of the dog-proof fence by the Wild Dog Destruction Board was conducted in late August. The Board inspected the full length of the fence, except for those sections that remain submerged by floodwaters. These include a 23-km section of the Queensland border fence.

Tony Mayo, Operations Manager for the fence, accompanied the Board on the inspection, as did Ms Renata Brooks, Deputy Director General, Catchments and Lands (NSW DPI). The Board found the fence to be in good order, notwithstanding the extreme climatic conditions experienced in the Western Division in recent years, including severe dust storms and flooding. Five dingoes were sighted during the inspection, immediately adjacent to and outside the fence. These sightings again reinforced to the Board the importance of the fence to the NSW pastoral industry.

Since last year's inspection, both sides of the fence from Hungerford to Hamilton Gate have been graded to remove a build-up of vegetation. This material was posing a very real fire threat to the fence. The grading works have also improved access along the fence for maintenance staff.

Successive wet seasons have taken their toll on some of the fencing materials—particularly the foot netting. The Board has found that a particular type of foot netting put into the fence quite some years ago is now failing owing to rust. Maintenance staff are making essential repairs to the foot netting to ensure that the fence is not compromised, but

they have also embarked on a replacement program. A contractor has recently been engaged by the Board to replace 30 km of rusty foot netting; this work will be completed by the end of 2012. A further 30 km of foot netting should be replaced during 2013.

Other scheduled works in the coming months include the clay capping of a number of sand dunes on the South Australia border fence. These dunes are quite unstable, particularly in windy conditions, and this can result in erosion under the fence or accretion of sand against the fence. The process of reshaping the dune and capping it with clay-based material stabilises the dune and improves the integrity of the fence, reducing maintenance costs and allowing maintenance staff to more easily monitor the fence. The entire 600-km length of the fence is inspected twice weekly by maintenance staff.

Following representations by the Board, the NSW State Government now recognises the fence as important public infrastructure. The Board is now eligible for financial assistance under the Natural Disaster Relief Program. This is a very important achievement for the Board, given the impact of recent climatic events on the fence. As a consequence of this recognition, the Board has recently been paid \$432 000 under this program for the cost of its repairs to the fence following the September 2009 dust storm and the February 2010 flooding events. Both of these climatic events were declared 'natural disasters' for the Unincorporated Area.

**Andrew Bell**  
Western Lands Commissioner  
Chairman, Wild Dog  
Destruction Board



Left: Wild Dog Destruction Board and NSW DPI staff inspect a new section of fence east of Wampah Gate. *Photo by Andrew Bell*

# Athel pine management around Menindee Lakes

Western Catchment Management Authority  
 Phone: 1800 032 101

The Western Catchment Management Authority (CMA) is working to remove Athel pine (*Tamarix aphylla* and *ramosissima*) from the Menindee Lakes riparian areas and to increase community awareness of this highly invasive weed.

This project is supported by the Australian Government's Biodiversity Fund and will help to protect the biodiversity of plants and animals in the Menindee region and to improve water quality.

In the mid 1990s the Australian Government prepared a National Weeds Strategy. Part of this strategy was to determine the top 20 Weeds of National Significance (WoNSs), which included Athel pine, and to bring together State and Federal government departments with community members to consolidate what was known about each of the weeds, including their current and potential distribution. The strategy aims to strengthen the cost efficiency and effectiveness of weed management to reduce the economic, environmental and social impacts of weeds.

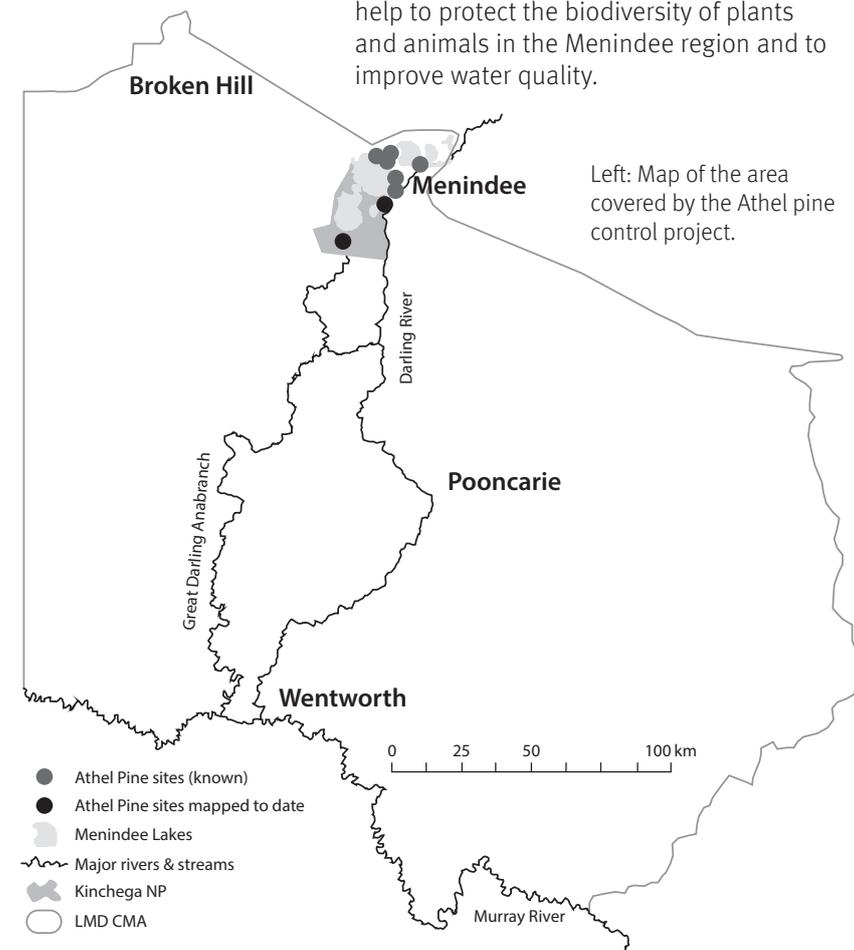
Information will be provided to landholders on this WoNS, to enable the identification and mapping of Athel pines around the Menindee Lakes System, the Darling River and associated wetlands. Control options will be discussed with landholders, and any Athel pines will be identified prioritised for removal.

Since the 1950s, Athel pines have been planted along the edges of the Menindee Lakes system, within the banks of the irrigation channels, and as ornamental street trees on private property to provide shade and wind protection. However, the trees in several of the planted areas have become invasive and are at high risk of spreading throughout the Menindee Lakes and riparian areas of the Darling River, including the surrounding Kinchega National Park. This spread has the potential to directly affect biodiversity, water quality and quantity.

Already, 150 Athel pines have been mapped and will be prioritised for control on the basis of their location and ability to infest other areas. Initial mapping of Athel pines in the Menindee Lakes area was done by the National Athel Pine Coordinator in 2009.

Removal of Athel pines at the highest risk of spread or impact in the Menindee Lakes area will build on previous work completed in 2006 and 2010 to reduce the potential impacts of this WoNS and the associated cost of controlling future infestations.

If you believe you have Athel pine on your property and are interested in controlling it, please call the Western CMA. We have funds available for control of high-priority Athel pines, such as those close to waterways, so the costs of control in these cases will not be borne by landholders. Please call Chris Alderton on 0438 345 109 for more information.



Above: Examples of Athel pines growing in the project area. Photos supplied by Western CMA

# Great season for malleefowl

The Lachlan CMA and the Invasive Animals Cooperative Research Centre (CRC), with the cooperation of local landholders, ran aerial surveys for malleefowl (*Leipoa ocellata*) in the Mt Hope area at the end of August this year. The surveys were done over a 1-week period on private and leasehold properties. Transects were flown in a north-south direction to locate mounds. GPS points and photos were then taken of individual mounds to later establish whether they were active or inactive.

Over an area of just over 42 000 ha a total of 48 mounds were recorded. Of these, 23 were found to be active.

The helicopter is an extremely useful and cost-effective tool for locating mounds in large areas of vegetation and helps in ground-based search efforts. Another aerial survey towards the end of the project has been proposed.

For further information about this project or on malleefowl in the Lachlan CMA please contact Angela Higgins on 02 6967 2897 or Jason Wishart on 08 8207 7836.

**Invasive Animals CRC  
Lachlan Catchment  
Management Authority**



Above: An active malleefowl mound. *Photo by A. Higgins*



Above: Helicopter used in aerial surveys. *Photo by A. Higgins*



Above: Remote camera picture of mallee fowl at a mound. *Photo supplied by Lachlan CMA and the Invasive Animals CRC*

Throughout September and October, Lachlan CMA staff have been busy setting up cameras on selected mounds. This will show malleefowl activity and allow us to observe what pest species are visiting the mounds and in what numbers. Each remote camera unit uses motion sensors and an infrared LED (light emitting diode) flash to detect animals that pass by. An overhead camera helps to observe egg laying and the number of chicks hatching. Pest species so far caught on camera visiting mounds include pigs, deer, feral cats, goats, rabbits and foxes.

The project is being funded by Caring for our Country and the Australian Government's Clean Energy Future Fund. It is managed by the Invasive Animals CRC in partnership with the Lachlan CMA.



Above: Remote camera picture of wild pigs visiting a mound. *Photo supplied by Lachlan CMA and the Invasive Animals CRC*

# The changing face of Bottle Bend Reserve

Ian Kelly  
Rangeland Management  
Officer, Buronga  
Crown Lands – West Region

Bottle Bend Reserve, covering an area of almost 1600 ha, is located about 20 km east of Buronga and includes a substantial area of River Murray frontage.

Originally the area was reserved as a State Forest, managed by NSW Forests, until the Riverina Red Gum Reservations Bill was enacted. As a result of these legislative changes the area was transferred to the Crown Lands division of NSW DPI in July 2010 and a Crown Reserve was established. The Reserve, which was gazetted for the purposes of Nature Conservation, Public Recreation and Rural Services, is now managed by Crown Lands Buronga staff.

First inspection of the Reserve in 2010 showed that extensive sections of the wetlands displayed the quite distinct redness associated with acid sulfate soils. The effect of the acid sulfate soil conditions on the Reserve was very

dramatic: the site could only be described as looking like a wasteland, with dead and dying trees everywhere. pH levels were analysed at four locations in the creek areas: the readings ranged from 6.5 (neutral) to 3.3 (highly acidic and close to the pH of an orange).

This Reserve presented some very unique challenges for local Crown Lands staff, particularly in regard to managing the environmental issues and the ongoing public use by day visitors and campers.

In October 2010, high water flows in the Murray River flushed through the Reserve wetlands and had a remarkable effect. By January 2011 a larger, more substantial and sustained flow had reached the Reserve, and within very little time bird life had returned to the wetland areas. Further pH readings taken in 2011 showed that the pH in the wetlands was now very similar to that of the fresh water in the Murray.

Since these initial flows the Reserve has received two further substantial rainfall events. Germination of both river red gum and black box seedlings can now be seen throughout the wetland areas.

The camping area within Bottle Bend Reserve is well used, with travellers enjoying an overnight stay on the wonderful Murray River. Recent changes have been made to the camping area. Some sections are now excluded from vehicular traffic to help protect the cultural heritage values and the fragile nature of the soils.

Crown Lands, with funding from the former Lower Murray Darling CMA, has recently completed a track rationalisation and vegetation protection project within the Reserve. The project rehabilitated many unnecessary tracks to allow for further germination of native species, particularly black box and lignum. Also, a sandy rise in the eastern part of the Reserve has been fenced to protect significant cultural heritage values and the good stands of Murray pine that are found there.

The next step in managing the Reserve is to develop a management plan. Funding obtained through the CMA will be used to prepare a Plan of Management for the wetland areas. This plan will develop a strategy aimed at preventing the site from returning to its wasteland state of 2010 and will identify ways to manage the acid sulfate soils when the area starts to dry out again. The plan will be developed into a draft format and presented to the local community for comment. From these community meetings we hope that final documents will be implemented to allow further development and protection of Bottle Bend Reserve.



Above: Bottle Bend Reserve in July 2010. *Photo supplied by Crown Lands*



Above: Bottle Bend Reserve in April 2011. *Photo supplied by Crown Lands*



Above: Overnight campers enjoying Bottle Bend Reserve. *Photo supplied by Crown Lands*

# Increased risk of grass fires – take action now!

Remarkable seasons and above-average rainfall across the Western Division over the last few years have resulted in a fuel load that has not been seen since 1970. As temperatures increase across the state, so does the risk of bush and grass fires.

Grass fires can start and spread quickly. Landholders are reminded to take action now to decrease the risk. You should know what you need to do to protect your livestock and infrastructure this season.

This year in the Western Division more than 60 000 ha has been burned from grass fires. The causes are mainly lightning strike, roadside ignitions, fires at unattended camp sites, and vehicles driving over long grass.

Landholders should be prepared by having a Bush Fire Survival Plan in place and an Emergency Survival Kit. Other considerations include having well-maintained firebreaks around your home, sheds and storage areas; checking your fire-fighting equipment; and grading along boundary fences and tracks.

Always take precautions when using vehicles in and around long grass. For more information visit the Rural Fire Service website at <http://www.rfs.nsw.gov.au/grass>.

Technology such as Sentinel Hotspots (an internet-based satellite mapping system developed by CSIRO, the Department of Defence and Geoscience Australia) is enabling fire-fighting organisations and the public to identify and zoom in on fire hotspots. More information on Sentinel Hotspots can be found on the CSIRO website at <http://www.csiro.au/solutions/Sentinel>. For access to the internet-based Sentinel Hotspots see <http://sentinel.ga.gov.au/acres/sentinel/index.shtml>.

The Far West Team and Barwon Darling Zone of the NSW Rural Fire Service are using social media sites such as Facebook to open up an instant communication line between users.

**For further information contact Inspector Robyn Favelle at the Rural Fire Service on 02 6836 1226.**

Crown Lands Division  
West Dubbo

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## Legal Roads Network project

The Legal Roads Network team has drawn up 50 plans and lodged 47 plans identifying 10 000 km of Shire road and 2000 km of restricted easements to landlocked properties in the Western Division.

The project has finished the roads and easements in the Unincorporated Area and the Central Darling and Bourke Shires and is currently working on plans representing 60% of Cobar Shire roads.

Since the last report we have completed plans of the Mitchell Highway (south of Bourke), Jumps Rd, Arthur Hall VC Way, Doney's Rd, Tubbavilla Rd, Colane Rd and part of Monkey Bridge Rd. Plans of the Kidman Way (north of Cobar), including Wilgaroon Rd, Wilga Downs Rd, Coronga Peak Rd, Pulpulla Rd, Mulya Rd, CSA Mine Rd, Endeavour Mine Rd, Gidgee Rd, The Wool Track, Moolah Rd, Belarabon Rd and Developmental Rd, as well as plans for Budda Rd, Buckanbe Rd, Tilpilly Rd, Tiltagoona Rd and Mt Gap Rd, have also been completed.

We are currently working on the Kidman Way (south of Cobar), Osterley Downs Rd, Wallace Vale Rd, Cooneybar Rd, Elmore Rd, Booroomugga Rd and Yimkin Rd.

Landholders whose primary property access is via these roads should have received

paperwork outlining the actions required to ensure the provision of legal access. Landholders who have not returned their paperwork should do so as soon as possible to ensure that their requirements for access are addressed.

It is important to remember that NSW DPI's property transfer policy now requires legal access to be in place before any consent to transfer is granted. Landlocked Western Lands Lease property holders should give careful thought to their preferred primary access location to maximise this opportunity.

If easement applications are not returned by the due dates then the opportunity to create an easement to a landlocked property may be missed. It will not be possible for the project to revisit these areas, and any creation of legal access in the future will be at the landholder's expense.

The project team looks forward to your continued support and the timely return of paperwork so that an effective legal access system can be achieved in the Western Division.

**For further information contact Rex Miller. Phone 02 6883 5420 or email [rex.miller@lands.nsw.gov.au](mailto:rex.miller@lands.nsw.gov.au).**

Rex Miller  
Legal Roads Network Project  
Crown Lands Division (West)  
NSW DPI, Dubbo

# Over 9500 ha of hazard-reduction burns in the Far West

This year the National Parks and Wildlife Service (NPWS) has conducted one of its biggest hazard-reduction burning programs, reducing fuel loads on over 9500 ha in national parks and reserves throughout outback NSW.

According to NPWS Far West Regional Operations Coordinator Paul Seager, with the above-average rainfall of the past 2 years vegetation has flourished — especially the grasses.

‘We managed a very successful hazard-reduction program last year and were determined to continue that again this year to protect the environment and neighbouring properties from the risk of wildfires.

‘Hazard reductions were conducted in Far West national parks, including Mungo, Paroo-

Darling, Sturt, Toorale, Ledknapper and Culgoa national parks.

‘In Sturt National Park hazard reductions covered over 1685 ha and were undertaken largely along the boundary of the park. These burns help to ensure that fires resulting from lightning strikes don’t spread into or out of the park. It’s a win-win situation for the park environment and neighbouring properties.

‘Prescribed burns were also done to protect park assets, including the wild dog fence and two Wild Dog Destruction Board houses within the park’, Mr Seager said.

‘An extensive hazard-reduction program was conducted at Toorale National Park covering over 3000 ha of grassland areas. Hazard reductions were also done in Ledknapper National Park covering 581 ha and in Culgoa National Park covering 1171 ha.’

All of the NPWS hazard reductions are strategically planned and resourced and are done under specific weather conditions. These burns are part of the NSW Government’s \$62-million package to boost bushfire preparedness.

Throughout the year NPWS also does fire-trail maintenance to ensure clear access to manage fires. Fire-fighter training, fitness, equipment upgrades and community education are important other elements of preparation for the fire season.

Below: A controlled burn in Toorale National Park. *Photo supplied by NPWS*



## NPWS called to action as fires ignite across the Far West

‘There has already been a busy start to the fire season in the Far West, and the NPWS is on guard for further fires this summer’, says NPWS Far West Regional Operations Coordinator Paul Seager.

‘In late October the NPWS helped the NSW Rural Fire Service with a major fire operation across the Far West of NSW, which included controlling over 30 fires started by lightning and several fires started by machinery. An Incident Management Team was established at the Bourke Fire Control Centre to oversee the control of these fires.

‘In late September NPWS staff helped landholders and the Rural Fire Service to combat a fire started by lightning on a property neighbouring Mutawintji National Park. NPWS also deployed crews to control a fire that was

started by lightning on private property and burned into Mungo National Park. Fire breaks created by the NPWS along with the RFS were critical in helping to control this fire.

‘The NPWS has also managed two small fires that started within the Euston Regional Park in October. These both started from unattended campfires and ignited nearby river red gum trees.

‘It’s important that all visitors to national parks take the appropriate precautions and respect the environment.

‘We ask people to be sensible. Don’t leave fires and BBQs unattended, keep a ready source of water nearby, and fully extinguish any fire before leaving.’

People should report smoke and fire sightings immediately to 000.

# Remains returned home

Aboriginal remains formerly held at the Australian Museum were returned to Country in a moving repatriation ceremony at Yathong Nature Reserve near Cobar on Saturday 13 October 2012.

Gary Currey, Regional Manager of the Office of Environment and Heritage Country, Culture and Heritage Division Far West, says that the remains have been buried in a selected keeping place that will be protected forever.

'The six sets of remains have been held in the Australian Museum possibly since the 1880s, when one of the sets was collected', says Mr Currey.

'The Office of Environment and Heritage was very pleased to work with the Australian Museum, Cobar Local Aboriginal Land Council and the local Ngiyampaa people to bring the remains back to Country.

'Physical anthropological assessments carried out by the Museum indicate that the different remains range from those of people with a traditional lifestyle and diet to those from the time of post-European contact. The clear evidence is in the teeth wear. Aboriginal people living a traditional lifestyle have even teeth wear, whereas Aboriginal people from post-European contact have uneven wear with decay or cavities.'

'Boxes carrying the remains were walked through a pall of smoke in a cleansing smoking ceremony. They were then laid to rest in an area that has been set aside by the National Parks and Wildlife Service as a keeping place in Yathong Nature Reserve', says Mr Currey.

Local Ngiyampaa Elder Elaine Ohlsen, from Cobar, was a major driver of the project. She worked tirelessly to ensure the repatriation was a success.

'I was just so pleased to see these remains finally back in country where they belong', she said.

Following the ceremony, organisations and individuals who had helped make it a success were presented with certificates of appreciation.

Below: Pictured at the repatriation ceremony are (left to right) Max Harris (Ngiyampaa), Phil Sullivan (OEH), Gary Currey (OEH), Kay Stingemore (Greater Cobar Heritage Centre), Elaine Ohlsen (Ngiyampaa Elder), Ricky Ohlsen (Ngiyampaa) and Robert Harris (Ngiyampaa). *Photo supplied by NPWS*



# The Merino ewe: bred bulletproof!

Dr Mark Ferguson  
Senior Lecturer  
Animal Production Systems  
Murdoch University

This article appeared in the October 2012 Bestprac (Rangeland Best Practice and Innovation) E-News.

It is a beautiful thing when science and stockmanship find some common ground. Such is the case for the recent realisation of the value of increasing the genetic fat and muscle in Merino ewes. In what could be described as parallel universes, two dedicated sheep teams made exactly the same discovery: the more genetic fat and muscle a Merino ewe has, the better she handles the climatic extremes—that is, the more bullet proof she becomes.

Team 1: The Murphy family from Karbullah Poll Merinos at Goondiwindi. The Murphys, with their keen eye for stock that can handle the tough conditions of Queensland, started to notice that particular ewes and rams were handling the tough times better than others. When they looked a little harder they noticed that the ewes and rams that were handling the conditions the best were those that had high Australian Sheep Breeding Values (ASBVs) for fat and muscle. They immediately responded and put positive selection pressure on both of these traits.

Team 2: Mark Ferguson and Andrew Thompson and their research team. Around the same time, about 3500 km away in Perth in Western Australia, Team 2 was busy investigating the role genetic fat and muscle could play in improving the maternal capacity of the Merino. What they found lined up exactly with what Mark and Vicki Murphy at Karbullah had found: when it comes to breeding Merinos, genetic fat and muscle are absolute must-haves in an animal.

Fat plays an essential role in the reproductive process, and sufficient fat reserves are necessary for animals to ovulate and successfully reproduce. Similarly, total body muscle is also an important resource for animals to draw on in tough times and is important in driving reproduction.

The research has shown that ewes with higher fat ASBVs:

- lose less liveweight when nutrition is restricted
- have higher reproduction rates, particularly when nutrition is restricted during mating (as many as 25 extra lambs per 100 ewes mated per 1 mm of extra genetic fat)

- produce lambs with higher birthweights when nutrition is restricted—that is, lamb birth weight is buffered by the genetic fat, thus increasing the likelihood of the lamb surviving
- have lambs that have better rates of survival to weaning—about a 5% increase in lamb survival per 1 mm increase in genetic fat
- have weaners that also survive better. This effect is bigger in small weaners as a result of tough years, but there is normally around a 2.5% increase in weaner survival per 1 mm increase in genetic fat.

**In short, by putting some genetic fat back on your ewes you can help make them bulletproof in the face of climate variability.**

When the benefits are all added up and put through a whole-farm model, the value of increasing genetic fat by 1 mm in a Merino ewe flock is over \$10 per ewe per year.

What about muscle? The great thing is that the two come together. Merino sheep with good muscle breeding values also tend to have good fat breeding values. What are the positive attributes of sheep with good muscle?

Sheep with good muscle tend to:

- produce more twins (about 6 extra lambs per 100 ewes mated for an extra 1 mm of muscle)
- remain in higher body condition score throughout the year
- have fewer worms and better staple strength
- (as an added bonus) produce better carcasses, which have higher dressing percentages.

In simple terms, Merino sheep that have high genetic fat and genetic muscle just do better — they are bulletproof. There are not many free lunches in sheep farming, but this is one of them.

For commercial producers the key to capitalising on this opportunity is the effective use of ASBVs in ram-buying decisions. You can't see 1 mm of muscle or 1 mm of fat on a ram—it must be measured. Equally, raw measures of fat and muscle (i.e. not ASBVs) are useless; they must be corrected for liveweight and converted into ASBVs to get the full picture of an animal's worth.

Some tips for ram buyers wanting to capitalise on this opportunity:

1. Make a plan for your ewe flock: decide on the key traits that will make you money.
2. Find a ram source that is supplying ASBVs for yearling fat (YFAT in ram sale catalogues) and yearling muscle (YEMD in catalogues), as well ASBVs for the other traits that make you money.
3. Look for rams that are greater than +1 mm for YEMD and greater than +0.5 mm for YFAT. These rams are in the top 30% of the breed of the current drop for these traits.
4. Of the rams within (or near) these cut-offs, find the ones that are visually appealing, have the right wool, and have favourable ASBVs for the other traits that make you money.
5. Get to know worm egg count (YWEC) breeding values as well, as they are very important for barber's pole environments and can help to bulletproof the ewes and young sheep.

6. Be prepared to be flexible: perfect rams aren't always easy to find, but get as much positive muscle and fat as you can while sticking to your normal ram-buying criteria.
7. Talk to your ram breeder about the plan you have for your flock and the traits that you are aiming to improve.

If ASBVs seem all too difficult, find someone who can explain them to you—a neighbour, someone from an advisory service, your ram breeder or your classer. When used wisely and with good stockmanship, ASBVs are an unbelievably powerful tool for improving the profitability of Merino sheep.

So where did the fat and muscle go on Merinos? They went into wool! For two centuries we have been breeding for higher wool quality and higher wool cuts. This breeding strategy inadvertently reduced the genetic fat and muscle in Merinos. It's time to bring it back to help make sheep easier to manage and produce more lambs.

**For more information contact Mark Ferguson at [M.Ferguson@murdoch.edu.au](mailto:M.Ferguson@murdoch.edu.au).**

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# Merino meat market trends

Despite wool and lamb or sheep meat values having dropped from the exceptional prices received in 2011, gross margin analyses consistently find that the margins in self-replacing Merino enterprises are similar to those in other sheep-based enterprises.

Interestingly, a breakdown of income 'share' continues to show that medium to strong wool enterprises are strongly influenced by lamb, mutton and breeding-ewe sale values. These 'sheep meat' values can contribute upwards of 55% to 60% of total income.

So where does the Merino sit in terms of short- and long-term value to the sheep meat industry?

Many may not realise that around 20% of total lamb meat production is pure Merino lamb—and this figure hasn't changed appreciably in recent years. The reduction in the retention of wethers for wool production (because of low wool returns) and the realisation that Merino lambs can make reasonable prices when finished to specification have seen an increasing proportion and number of wether lambs finished for slaughter.

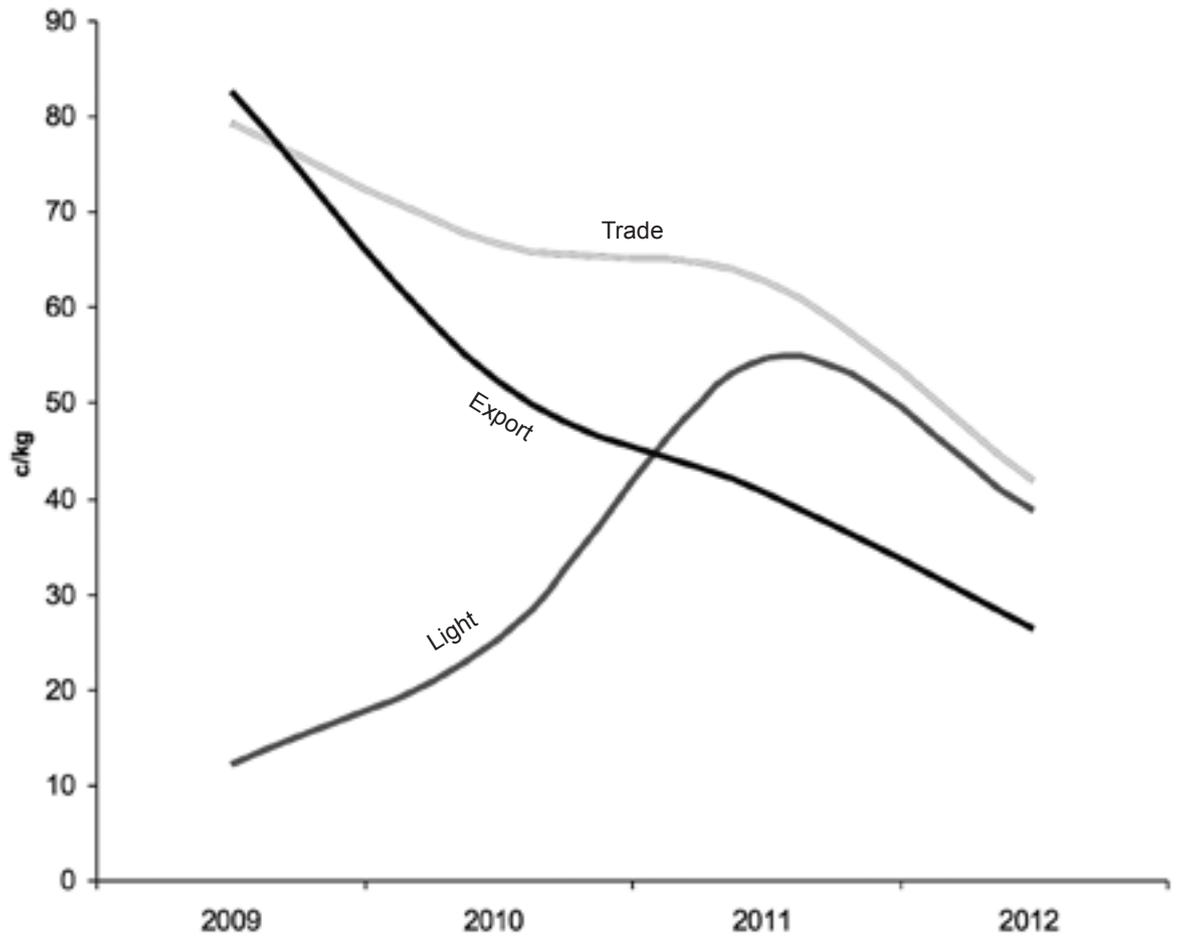
Most Merino lamb producers or finishers target the winter months, when the lamb supply is traditionally tight. In doing so, producers can grain-finish lambs if necessary while improving returns by including a wool clip in their gross margin. Skin values (compared with those for crossbred lamb skins) are generally lower but are more than compensated for by the wool harvested.

The figure on the next page compares the values of the 'Light' (Store/Restocker), Trade and Export crossbred lamb categories on a cents per kilo basis since 2009, relative to the values of the Merino (18 to 22 kg). In 2009, Trade and Export lambs respectively made, on average, 12, 79 and 83 cents/kg more than Merino lambs. Values in 2012 sit closer to 40 cents/kg difference for Light and Trade lambs and 26 cents/kg difference for Export lambs.

Although a simple lack of lamb relative to demand may be the reason behind Merino lamb values improving relative to the values of traditional crossbred lambs, we cannot discount the improvement in the Merino lamb 'product' after the drought. Producers should be praised for now viewing their Merino operations as true dual-purpose systems

**Geoff Duddy**  
Sheep and Wool Officer  
NSW DPI Yanco

## Price differences (in cents/kg) between crossbred lamb categories and Merino lambs (18 to 22 kg).



and for steadily improving all wool and meat attributes of the breed.

Trial work at Cowra between 1994 and 1997 saw straight Merino lamb carcasses more than 'hold their own' in terms of saleable meat yield, pH and colour analysis against BLM (Border Leicester x Merino), Terminal–Merino and second-cross lambs. Although Merino lamb growth rates and dressing percentages were below those of the lamb crosses analysed, the breed's inherent leanness and (surprisingly) good loin meat yields meant that there was little loss to the processor in terms of saleable meat from heavier carcasses.

Although the Cowra trial work is encouraging, we should remember that during the past 15 years most Terminal and Maternal breeds have shown rapid improvements in meat yields and quality parameters. Has the Merino been able to keep pace?

Increased emphasis on growth rates, meat yield and quality can further push the Merino towards the dual-purpose role many believe it can achieve. Sourcing rams from studs that are embracing MerinoSelect (or LambPlan if you also produce Terminal–Merino lambs) objective-measurement systems can ensure that meat-based improvements continue.

Western Division Newsletter

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The information contained in this publication is based on knowledge and understanding at the time of writing (December 2012). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Trade and Investment, Regional Infrastructure and Services or the user's independent adviser.

# NLIS: Feral and rangeland goats

This information was first published as a Fact Sheet by NSW DPI in October 2012.

## Feral goats and depots

A feral goat is one that has been captured from a wild state, has not been born as a result of a managed breeding program, and has not been subjected to any animal husbandry procedure or treatment.

Feral goats include kids born in a depot to captured does as a result of unmanaged mating with feral bucks.

Feral goats are not:

- captured goats that have been marked, ear-marked, tagged, joined or treated with any veterinary medicine, drench or other chemical
- domestic goats that have been bred in captivity and subsequently escaped or released.

A goat depot is a property that is used to aggregate feral goats before sale or slaughter and is fully accredited under the Livestock Production Assurance (LPA) program managed by AUS-MEAT. This means that the depot is able to complete its own national vendor declaration (NVD) for goats leaving the depot.

'Rangeland' is used by industry to describe the environment from which goats have originated for marketing purposes. Question 2 on the NVD for goats asks whether the goats have been grown under rangeland conditions in accordance with the definition in the NVD's explanatory notes. The definition says 'Rangeland refers to goats which are harvested and have never been confined to a feedlot or subjected to any chemical treatments'. This definition is consistent with the feral goat definition in NSW legislation.

For detailed information on the National Livestock Identification Scheme (NLIS) responsibilities of goat depots, see 'NLIS Guidelines for NSW Goat Depots' on the NSW DPI website at <http://www.dpi.nsw.gov.au/agriculture/livestock/nlis/sheep-goats>.

## Ear tags

Feral goats don't have to be tagged if they are being moved from the property on which they are captured to an abattoir for slaughter, either directly or via one goat depot. This exemption recognises the difficulties of handling feral bucks and determining the property of birth

of feral goats. Once consigned to an abattoir, untagged feral goats must be slaughtered, although they may be held for up to 7 days in holding paddocks managed by the abattoir operator.

Feral goats must be identified with a pink post-breeder tag carrying the property identification code (PIC) of the property of capture if the goats are to be moved from that property to any other property (other than a depot) or to a saleyard for sale.

Feral goats must be identified with a pink post-breeder tag carrying the goat depot PIC if the goats are to be moved from the depot to any other property (including another depot) or to a saleyard for sale or for live export.

Goats born in a depot do not need to be tagged if they are the result of unmanaged mating between feral does and bucks, have not been marked or treated in any way, and are being sent to an abattoir for slaughter. All other goats born in a depot must be tagged.

Tags must be NLIS approved and must have the PIC of the property on which the goats are tagged printed on them, together with the NLIS logo. Individual serial numbers and other management information may also be printed on the tags.

## Movement documents

All movements of feral goats must be accompanied by an approved movement document, which is provided on arrival to the person receiving the goats. The two most commonly used forms are:

- An NVD and waybill for goats, issued under the LPA program. This is the preferred form, as it meets all statutory, market and product integrity requirements.
- A transported stock statement (TSS) obtained from a Livestock Health and Pest Authority or provided by a transporter.

The PIC and address of the property where the feral goats were loaded for trucking must be recorded as the 'Property/place where the journey commenced' on an NVD or the 'Place of loading stock' on a TSS.

If the goats are tagged, any tag PICs that differ from the pre-printed PIC on the NVD must be written as 'other PICs' in the 'Description' table on the NVD or TSS.

Lisa Davison  
Biosecurity Traceability  
Systems  
NSW DPI Orange

A copy of the movement document must be retained by both the person sending the goats and the goat depot for at least 7 years.

### Mob-based movement recording

All movements to a goat depot must be recorded by the depot operator as a mob on the NLIS database and must be uploaded within 7 days of when the goats arrive at the depot.

Recording movements on the NLIS database from a depot is the responsibility of the person receiving the goats (i.e. the abattoir or saleyard, or the new owner or person in charge of the goats at another property).

### Summary of movement requirements

The tag, document and movement recording requirements for feral goats are summarised in the table below.

Tag, document and movement recording requirements for feral goats

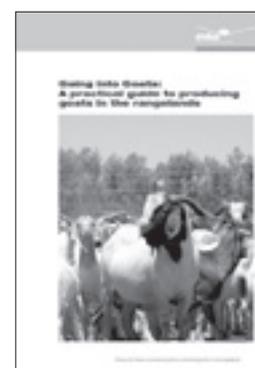
| Movement of feral goats        | Tag                                      | Movement document (NVD or TSS) | Mob-based movement recording |
|--------------------------------|--|--------------------------------|------------------------------|
| Property of capture → abattoir | Exempt                                   | For property of capture        | By abattoir                  |
| Property of capture → depot    | Exempt                                   | For property of capture        | By depot                     |
| Property of capture → property | Post-breeder tag for property of capture | For property of capture        | By second property           |
| Property of capture → saleyard | Post-breeder tag for property of capture | For property of capture        | By saleyard                  |
| Depot → abattoir               | Exempt                                   | For depot                      | By abattoir                  |
| Depot → depot                  | Post-breeder tag for first depot         | For first depot                | By second depot              |
| Depot → property               | Depot                                    | For depot                      | By property                  |
| Depot → saleyard               | Depot                                    | For depot                      | By saleyard                  |

## Going into Rangeland Goats guide out now

The Australian goatmeat industry has experienced strong growth over the past 20 years, with over 1.5 million goats processed annually. This growth has been largely supported by the sale of goats sourced from the rangelands; these account for more than 90% of production. To support further growth in the rangeland goat industry, Meat & Livestock Australia (MLA) has released a new tool, *Going into Goats: A practical guide to producing goats in the rangelands*.

The guide has been developed by producers for producers through consultative workshops held across Australia's rangelands during its production. During these workshops, rangeland producers identified the specific production issues that influence their productivity and profitability and detailed the processes and procedures that they use to maximise the potential of their enterprises. The guide focuses on these issues so that producers can learn from other producers' experiences.

*Going into Goats: A practical guide to producing goats in the rangelands* can be accessed now at [www.rangelandgoats.com.au](http://www.rangelandgoats.com.au). The resource is released as an e-learning tool and is best viewed electronically or online. A printable pdf file is also available for those who would prefer a printed copy.



# Reports from the Kununurra Australian Rangeland Society Conference, 23 to 27 September 2012

From Angus Whyte:

I flew into Darwin very early on the morning of Saturday 22nd and spent a few hours going around the Parap markets to get some supplies for the 850-km trip to Kununurra. Fellow landholders Annabel Walsh and Becky Kossler flew into Darwin at 2 pm, and we all drove to Katherine before heading to Kununurra on Sunday. We arrived in Kununurra at about 3 pm local time (to register) after some detours and sightseeing on the drive from Katherine. (That's another story!)

So, on that first Sunday evening we all met up at the 'Grande' in Kununurra for drinks, nibbles and a meet and greet. It was so good to see some faces that I unfortunately only ever get to meet every 2 years at these conferences. After catching up, we prepared ourselves for the next few days of listening to all the great things that are happening in the rangelands. I must admit I was home fairly early each day, as I never really adjusted to the time zone in Kununurra! Most nights saw me in bed by 9 to 9.30 pm, with the flip side being I was out of bed at 5.30 am, so I had no trouble being up in time to catch the early bus for the 'Kings in Grass Castles' tour to Newry Station and beyond!

Newry Station is owned by CPC (Consolidated Pastoral Company) and managed by Tom and Camellia Shephard. The property is situated about 70 km east of Kununurra—just inside the Northern Territory. We arrived at the homestead in time for a cuppa. Local guide Matt Bolam started the talks off by explaining the management strategy used on Newry and some of the challenges that they have, such as floodgates being washed away in the wet (and hence stock often making their own arrangements), plus the problems of large paddocks and labour shortages. We didn't spend any time looking through the pasture (although I would have liked to have done so), but we did spend a while talking about the production systems used across the rangelands. This was very important, because sometimes rangeland scientists seem to forget that people live out here and need to make money!

We next moved to Dingo Springs, which is just a beautiful spot on a lovely creek that is

part of the 'Keep River Site of Conservation Significance'. This area is certainly important to Matt Bolam, who speaks passionately about his love of the area and the Gouldian finches, which from time to time call this area home. At this site, we also heard about the work the Western Australian government is doing in the area to control donkeys and the innovative methods they are using to cull the animals. The next stop was the Zebra rock mine for lunch and a look at the beautiful colours that occur in the rocks. We had a very nice meal of 'silver cobbler' (catfish) for lunch, before getting back on the bus and onto the Western Australia – Northern Territory border. At the border we heard how important biosecurity was to the Western Australian people, as well as how much they valued it and how they enforced it. Not only are fruit and vegies left at the border, but also stock are dipped and trucks washed out to reduce weed infestations. We arrived back at Kununurra at about 3 pm, in time to get ready for a great Kimberley BBQ at the Country Club with, again, lots of chat, drinks and great food.

Tuesday morning saw the start of formal proceedings in the Leisure Centre. The day started with a quick welcome followed by an opening, then it was into the papers, which were what we came to hear. We started with Professor Jerry Holechek from New Mexico, USA, who helped outline where he thought our finite energy supplies, land degradation, population growth and urbanisation may take our food production systems. My take on Professor Holechek's talk was that there are some great opportunities for the rangelands in the healthy production of food/fibre, and that people will need to shift closer to their food sources as energy supplies drop.

We then moved on to some papers about the impact climate change may have on our production systems and also the cost of dust storms. To me, these all had similar conclusions in that we have to encourage and retain more ground cover and perennial plants and reduce runoff.

Angus Whyte  
'Wyndam'  
Wentworth

*Continued on page 20*

*Continued from page 19*

After lunch the papers presented seemed to get very complex and certainly much more scientific than practical, so I must admit I zoned out for a bit! Unfortunately, there seemed to be a theme of either production or conservation, with the two not operating together. This shows to me that in the 200-odd years we have been here in Australia we have actually learned nothing about our environment, let alone how to harvest produce from it while enhancing ecological health. So when Tim Wiley came on as the last speaker and actually spoke about asking and respecting the values of the landholders as well as the local community, my ears shot up. Tim is working with 'Peedamulla' Station out from Port Hedland in Western Australia, and he was looking for a new way to plan for agricultural production across a diverse landscape while maintaining or enhancing environmental and cultural values. What Tim did differently was that he actually asked the owners what they wanted or needed and questioned them about the values they would like respected. He then overlaid this information with the production options for land types so that each owner could find a unique production system that met all of his or her needs. That evening we had free time, so I went out to a friend's place for dinner and a debrief.

'D day' for me was Wednesday morning. I had to give a presentation, so I had to be sharp and on time for kick-off. The focus of the day was production systems in the rangelands. This series of talks included the only two farming landholder talks at the conference, including mine. I won't mention my talk here, as it will be printed in the next *Western Division Newsletter*. We also heard from Meat & Livestock Australia that costs for the northern pastoral industry are rising at 2.5% a year and production is increasing at 1.2% a year, so if the northern landholders are going to stay profitable something needs to change. Next we heard a couple of talks about the future direction of the beef industry and grazing management. When I put the information presented into perspective—especially the information about the sorts of gains required by the industry to be profitable—I found that really none of it was going to take the industries where they need to go.

The next session started with a talk on the risks versus the rewards of intensifying grazing by using more water and more fences. This presentation, combined with a couple of other talks in the session, went a fair way towards explaining the divide between scientists and practitioners. Whereas scientists can put together projects that will test various

parameters, evaluate systems and devise ways of monitoring, they have no concept of managing the land or the livestock. I think that if the skills of rangeland managers were respected more by scientists then the information exchange would be reciprocated.

We also heard from Nan Bray (the other landholder) from Tasmania talking about the value of leaving family groups of livestock intact (i.e. not weaning) so that Mum can adequately train her offspring about the plants in the ecosystem and their roles in the diet. Family grouping may also be valuable for the protection of newborns, because the whole family—not just Mum—is available to help ward off predators.

After lunch on Wednesday, landholder Ben Forsyth facilitated a panel session and asked the floor for some discussion questions. This led to some very good debate about food production, live export and landscape management—issues that are important to us all. That night we all went out to 'The Hoochery' for a fantastic dinner. This place is the local rum distillery and obviously an institution. We had a beautiful dinner, but despite the advertisement that Kununurra's power is very good for 23 hours a day we dined for most of the time in a blackout! I'm sure we all went home with bellies full of lovely food and some of the local brew. I know I tested some of the rum varieties!

The last day of the conference saw the running of two concurrent sessions, one on 'fire management in a carbon economy', the other on 'understanding rangeland ecosystems and assessing impacts'. I chose to go to the rangeland session, which was sponsored by the Western CMA. The points that I took away from this session were that in order to monitor and reduce rangeland impact, scientists and agency staff need to work with land managers so they can see the issues developing in the landscape (e.g. erosion and weeds) and then help the land managers to find ways to deal with these issues in a targeted and efficient way. In the afternoon we heard about weeds and goats in western NSW, as well as the need for a new approach to land management in the southern rangelands of Western Australia, an area that is as big as NSW! This information brought it home to me that our rangelands are decreasing in productivity and that this decline needs to be turned around. Because there are so few people living in parts of the rangelands this will be very difficult.

The Conference was finalised by Ron Hacker, who did a great job of completing an 'executive summary'. Ron pointed out that at

each Conference there seemed to be fewer and fewer rangeland scientists: the numbers were starting to get to a 'tipping point', and he felt that the scientists' input wasn't being respected by the broader community. This could equally be said for farmers and agency people involved in the rangelands, as we all feel very under-respected in the current climate. Maybe if we all feel we aren't being respected, then we need to all work together to make sure that the science is relevant and is used on the ground. I think that agency staff need to broker outcomes between scientists and rangeland managers to make sure that the outcomes are used in the field and there is constant feedback both ways. I know that when I walked out of the Conference I did wonder 'What's next? What outcomes had we decided upon? What areas do we need to improve on?' I can only hope that everyone walks away with a bit more knowledge to do a better job in their role in the rangelands. It will



be very interesting to see what happens when the next Conference comes along in 2014.

I would especially like to thank Bestprac and the Lower Murray-Darling CMA for their support, as I was able to travel up there and not just attend the Conference but also experience the beautiful area known as the Kimberley.

Above: Angus Whyte speaking at the Kununurra Rangeland Conference. *Photo supplied by Angus Whyte*

### ...and from Ian Auld

I was sponsored by the Murrumbidgee CMA to attend the Australian Rangeland Society's 17th Biennial Conference at Kununurra. The conference was an opportunity to reflect on the challenges facing rangeland users in the future. It was also a chance for me—a rangeland manager from the Hay district—to look at Kimberley rangeland issues and compare the different state governments' views and how they prioritise rangeland activities.

After hearing from the Hon. Wendy Duncan, Parliamentary Secretary for Regional Development and Lands, and meeting Western Australian rangeland users and administrators, I learned of the Rangelands Reform Program, which aims to stimulate economic diversity in the pastoral areas. There is also 'Royalties for Regions' funding and the \$63-million Kimberley Science and Conservation strategy. This was in marked contrast with the situation at Hay, where government services are being rapidly withdrawn on the basis of the doubtful claim that they are overlapping.

This Kimberley regional support was in the context of a northern beef industry on its knees and assessed by Mick Quirk of Meat & Livestock Australia in his paper as providing meagre returns on capital. Plus the industry is threatened by high costs and by shrinking research and extension.

There was also gloom in the conference keynote address by Professor Jerry Holechek of New Mexico State University. In his

review of global trends and their impact on rangeland users he predicted rising demand for food and meat products but faster rises in the costs associated with imminent oil price increases. As these changes affect the cost of, for example, moving water through pipelines, he suggested that, with increased climatic variability, management of risk will become even more crucial, demanding more conservative stocking rates.

Three days of absorbing presentations were organised into a number of rangeland themes. One of these was the impact of climate and grazing pressure on production systems. Katrina Gepp presented extensive data supporting the uncertainty associated with the climate change facing NSW Western Division pastoralists.

In discussing the likely management impacts, however, she appeared to have ignored the likelihood that many graziers are already factoring in these issues. One impact of future climate variability was the subject of John Leys's paper, which estimated public and private costs of \$331 million resulting from a single dust-storm event (not including the cost to landholders from lost soil). John stopped short of drawing the obvious conclusion that governments have an obligation to invest some of this amount annually into services that will help landholders to maintain ground cover.

Ian Auld  
'Winilba'  
Hay

*Continued on page 22*

*Continued from page 21*

Other sessions addressed land-use planning for multiple users; rangeland livestock production; the functioning of rangeland ecosystems; and the monitoring of impacts on these ecosystems. An analysis of papers indicated a strong leaning towards anecdotal or case-study reporting, with very little presentation of the results of research projects. Although this may indicate a deliberate attempt by conference organisers to appeal to graziers, administrators and non-scientists, it could also reflect a decrease in the actual amount of research being conducted by agencies such as CSIRO. There was also an obvious lack of discussion at the conference of rangeland monitoring issues. This may reflect the current uncertainty associated with differing monitoring systems, the reality of data being stored but not analysed or translated into management recommendations, and the high cost of undertaking monitoring programs.

The conference was dominated by the backdrop of a landscape that featured dry-season fires, big dams and rivers and a large indigenous Australian population. Issues unresolved by the end of the conference included the need for an appropriate model for indigenous landowners to contribute to the management of rangelands. Also, despite a very good session on fire management in the carbon economy, there appears to be increasing uncertainty about how fire should be used and controlled in the northern rangelands. After I had toured the new Ord River Expansion project area and irrigation districts that are predominately growing Indian sandalwood, the biggest question I came away with was 'Why convert alluvial plains carrying productive, grazed perennial grasslands into irrigation areas when there is no economically viable food or fibre crop being produced in the current irrigation areas?' The answer awaits my next visit.

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# Managing dry grass pastures

Greg Curran  
Veterinary Specialist  
NSW DPI Broken Hill

Pasture dominated by dry grass, with little or no other herbage, is bringing stock problems that we've not seen for many years. After pastures dry out following a series of wet years, stock can lose condition faster than in drier years. This is because the abundant dry grass around now can be less nutritious than usual, especially if there is relatively little herbage or bush available.

Dense dry grass, particularly from two or three consecutive wet years, has deficiencies in:

- protein and (especially) energy
- phosphorus
- salt
- vitamins A and E.

Landholders need to consider putting out inexpensive supplements to help sheep and cattle make full use of these dry grass pastures. These supplements can add the following to the stock's diet:

- phosphorus
- urea to produce protein
- salt (not needed if your water contains a range of salts or you've got saltbushes and other chenopods)

- vitamin A, D, E (injections are available for cattle and rams)
- molasses, with its wide range of minerals, from soils that grow sugar cane.

Reproduction rates also tend to drop with inadequate nutrition, especially in the case of Merinos on low protein. Use your hands to feel the size and consistency of your rams' testes. If they are too small and soft, feed the rams lupins.

In addition to rams having small testes from low protein levels, brucellosis can reduce their semen quality. Testing for and eradicating brucellosis may be another part of getting good lamb marking percentages. See the article on brucellosis on pages 1 and 2 of this newsletter.

Merinos on abundant grass pastures (especially dry speargrass) can be prone to worm infestations. Watch for signs of worms or do a simple test with a WormTest kit, available from your local LHPA ranger.

You can also test your grass pastures for their protein, energy and nutritive value. Contact LHPA or NSW DPI offices for test kits, or check on the web for feed-testing services.

# Watch for flat billy button poisoning along the Darling

The floods and heavy rains have brought dense growth of flat billy button (*Ixiolaena brevicompta*) on river and creek frontages along the Darling in north-western NSW. This plant has particularly caused problems with stock south of Menindee. The well-known plant book *Plants of Western NSW* shows the plant on page 702, where it's called 'plains plover daisy'. Flat billy button is often confused with other billy buttons (*Craspedia*), but the *Ixiolaena* flowers and dry seed heads are distinctive. Check the web for other images.

We've not seen these densities during the long drier years. Some people new to the area may not recognise this abundant, innocuous and nutritious plant and the danger it brings.

The seed heads contain high levels of protein and fat. Sheep soon recognise this and start 'button picking': they eat large quantities of the dry seed head and do quite well. However, the seed also has a poison, crepenynic acid, which can damage muscle tissues if enough is eaten over 2 to 3 weeks.

Sheep with flat billy button poisoning can show various signs, including:

- failure to seek shade on hot days
- 'tiring', with a stilted proppy gait, weak hindlimbs and a hunched back, sometimes with a tucked-up abdomen
- sudden collapse when startled or when being moved; you may hear the heart pounding audibly when close to the sheep; the skin is usually pale

- condition usually good to excellent because of the protein and fat in the seed heads.

There is no treatment. Remove stock from the flat billy button, or move them to an area with much less flat billy button. Recovery starts within days of being taken off. Deaths usually stop 7 to 10 days after the sheep are taken off the plant.

**Greg Curran**  
Veterinary Officer and  
Technical Specialist  
NSW DPI Broken Hill

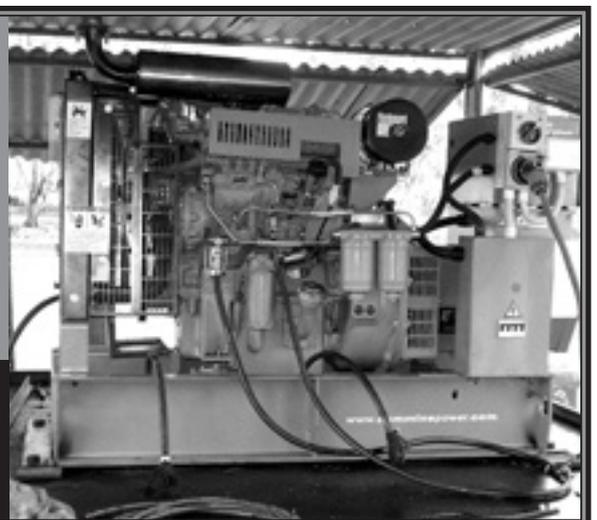


Above: Sheep will readily eat flat billy buttons, as they contain high levels of protein and fat. However, they also contain poison that will kill. Removal of stock from the area is the only cure. *Photo supplied by Greg Curran*

## FOR SALE Cummins Generator

- Model ES28D5, 2007 model
- 28 kVA, 38 A, 415 V
- As new, low hours
- 4-wheel-trailer mounted
- Surplus to requirements
- \$9,900 including GST

**Contact Graham Morphett, Secretary  
Caira Stock Water Scheme, Balranald on  
02 6993 8157, or email [yamba@bigpond.com](mailto:yamba@bigpond.com)**



# Local Land Services formed

In October 2012, Minister for Primary Industries Katrina Hodgkinson announced the formation of Local Land Services. This organisation will replace the 13 Catchment Management Authorities (CMAs) and 14 Livestock Health and Pest Authorities (LHPAs) and incorporate agricultural

services currently provided by Agriculture NSW (part of the Department of Primary Industries). Local Land Services will become operational in January 2014. Throughout the development phase farmers and landholders will still be able to access existing services from NSW DPI, LHPAs and CMAs.

## Danny has gone a'farming

After 8 years of service as a western Rural Community Support Worker and thousands of kilometres driving on remote outback roads, Danny Byrnes completed his contract with NSW DPI in October, hanging up his car keys and returning to the family farm on the outskirts of Hay. In addition to farming at home, Danny will also be undertaking contract lamb marking and mulesing. Danny can be contacted on 0498 655 992.

Right: Danny Byrnes with his dog Batman. Photo by Sally Ware



## 22nd Peppin-Shaw Riverina Ewe Flock Competition – Hay

Tuesday 12 and Wednesday 13 February 2013

**Bookings to Susan Hanna Secretary,  
on 0408 259 314**

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