



# Natural Heritage Trust

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## **REPORT TO THE WESTERN CATCHMENT MANAGEMENT AUTHORITY**

## **FINAL REPORT OF THE WESTERN CMA PEST ANIMAL AND WEED PROJECT**

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**NSW DEPARTMENT OF PRIMARY INDUSTRIES**

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Lloyd Kingham facilitated all the workshops and the pest animal distribution maps were prepared by Peter West at VPRU.

Barry Kay oversaw the project and ensured that the necessary administrative hurdles did not hinder progress.

## **SUMMARY AND RECOMMENDATIONS**

The Western Catchment Management Authority (WCMA) contracted the NSW Department of Primary Industries (NSW DPI) to undertake an assessment and recommend priorities for managing pest animals and weeds in the Western Catchment. This action is a high priority in the Blueprint for the Western Catchment, the relevant targets arising from the Blueprint itself, that is:

- MT5 No increase in the number of species or areas of noxious or exotic weeds infestation above current levels.
- MT6 No increase in the impacts of pest animals above current levels.

Management of pest animals and weeds is one aspect of an integrated and holistic approach required to manage the natural resources of the Western Catchment for sustainable production and conservation of biodiversity.

The prioritisations and recommendations in this report were developed through a series of workshops; Cobar 6 December 2004, Broken Hill 6 April 2005 and Brewarrina 20 April 2005. In addition, the pest animal and weed concerns of the Wanaaring Rural Lands Protection Board (RLPB) area were gauged by a telephone survey of several landholders while a number of landholders from the Walgett RLPB area attended a meeting at Lightning Ridge on 6 June 2005.

This report is a consolidation of the key findings of the workshops, interviews and meetings.

Landholder participants considered foxes to be the key pest animal in the Catchment and to a lesser extent, wild and domestic dogs, feral pigs, crows and eagles. It was recognised that drought was an ideal time to control many pests as their numbers were low and many were concentrated to relatively confined areas.

However, after such a prolonged drought, landholders had relatively few resources to conduct extensive pest and weed management. In recognition of this, the Commonwealth and NSW have made some funds available for control of pests and weeds during the current drought.

There are many local and regional programs for managing pest animals in the Catchment. NSW Department of Environment and Conservation (NPWS) have several in their national parks to control the damage to native wildlife due to foxes and feral pigs as well the damage due to certain weeds. Also the local RLPB's have ongoing programs to manage wild dogs and feral pigs and provide baits for the control of foxes. Some of these programs have been relatively uncoordinated and the workshops identified revised programs for feral pigs and foxes.

### **a) Fox Management**

Foxes were seen to be the most damaging pest animal in the Catchment, both because of the damage that it causes to production through lamb predation and also because of the predation of native wildlife. The Cobar workshop developed a detailed plan to manage the damage due to foxes. It is based on two existing programs in the District. Other parts of the Catchment could use the project developed in the Cobar District to develop similar fox management programs in their districts.

**Recommendation 1.** Based on the information provided at the Cobar workshop, the Cobar, Bourke, Wilcannia and Hillston RLP Board's and local NSW Environment and Conservation officers develop and submit to the WCMA, pest management plans based around Yathong Nature Reserve, Tambua and Canbelego.

### **b) Woody Weeds (invasive scrub)**

Woody weeds (invasive scrub), were seen to be a primary weed problem in the Catchment. However, the workshops recognised that the management of woody weeds was complicated as they came under the NSW *Native Vegetation Conservation Act, 1997*. Regulations are being developed to guide the management of native woody weeds including several actions under the WC Blueprint.

**Recommendation 2.** The workshop supports and encourages WCMA to undertake the actions identified in the WC Blueprint to manage woody weeds in the Catchment.

### **c) Notifiable Weeds**

There are several notifiable weeds in the Catchment that occur as isolated outbreaks or that are likely to occur. They are believed to becoming in on

headers, other equipment, with stock and with domestic stock transports. The increased movement of stock in and out of the Catchment associated with agistment in response to the prolonged drought is likely to increase the incidence of outbreaks of notifiable weeds. Constant surveillance is required of main highways. It was agreed that the primary focus should be to manage those that are not well established but have the potential to become a major problem, and to put in place strategies to detect and control other potential weeds, especially those that could spread south from cropping areas in Queensland. The principle strategy for this was to develop an appropriate awareness and understanding program about weeds and a Rapid Response Strategy to detect new outbreaks and control them before they can spread.

**Recommendation 3.** Shire weeds officers in association with NSW DPI develop a Rapid Response Strategy to detect and control new outbreaks of key exotic weeds in the Catchment.

#### **d) Training in Weed Identification and Management**

The workshops identified groups that could assist council and shire weeds officers in the identification and destruction of notifiable weeds. These include RLPB rangers, Roads and Traffic Authority and Country Energy officers and their contractors and other groups responsible for infrastructure development and maintenance within the Catchment. Most require training in weed identification and management.

It was recommended that NSW DPI develop a tailored course for these groups and run them in Brewarrina, Broken Hill and Cobar.

**Recommendation 4.** NSW DPI to be engaged to develop and run a weed identification and management course for key target groups in Brewarrina, Broken Hill and Cobar.

#### **e) Management of Mesquite in the Western and Lower-Murray Darling Catchments**

Mesquite occurs on at least 18 properties in the Broken Hill area and occurs across both the Western and Lower Murray-Darling Catchments. It is an exotic and invasive woody weed which has the potential to invade large areas and in turn inhibit growth of pasture and access by stock resulting in loss of production. It is declared noxious in NSW and is a weed of national concern.

Mesquite is considered to be a biological time-bomb for the Catchment. A major flood such as 1:200 year event would spread it widely so that effective wide-scale management would become unlikely. Management of this weed is a high priority for the Catchment. Funding support to manage this weed should be sought from both the Western and LMD CMA's and through the NSW DPI Noxious Weed Program.

**Recommendation 5.** That a program to control the current infestation of the noxious weed mesquite be developed for the Broken Hill District and be submitted for funding support from the Western and Lower Murray-Darling CMA's and the NSW Noxious Weeds Program.

#### **f) Management of Hudson's Pear**

Hudson's pear (*Cylindropuntia rosea*) is a rapidly growing weed problem in the Lightning Ridge district. Hudson's pear has escaped from opal diggings where it was used as a deterrent to intruders. It has long, strong and sharp spines and reproduces readily. It is spreading far from the diggings and floods are likely to spread it widely. While not yet a declared noxious plant, it is likely to be in the future. While it has a relatively confined distribution, it is recommended that a program be developed to control and, if practicable, eradicate it.

**Recommendation 6.** Weeds Officer, Walgett Shire Council and NSW DPI investigate the extent and practicability of eradicating Hudson's Pear in the Lightning Ridge District.

#### **g) Awareness and understanding about weeds**

All workshops identified a seeming lack of awareness and understanding amongst key individuals and agencies and the public in general about weeds and to a lesser extent, pest animals, including the damage that they cause and what should be done about them. This was seen as a major factor that is preventing more effective management of these threats. A high priority for the WCMA will be to develop a comprehensive education and communication strategy about the Western Catchment's pest animals and weeds.

**Recommendation 7.** RLPBoards, Shires and Councils, NSW DPI and NSW Department of Environment and Conservation develop and implement a strategy for key target groups to increase their awareness and understanding about weeds and pest animals in the Western Catchment and what should be done about them.

#### **h) Out of Control Weeds**

Weeds such as Noogoora and Bathurst Burr and Horehound (*Marrumbium vulgare*) are widespread and well established within the Catchment. They cause significant loss of production primarily through contamination of the wool clip. It was recognised that long-term, widespread control across the Catchment was unlikely with currently available techniques and resources. These weeds produce large amounts of long-lived seeds and there are large seed banks in the soil. Nevertheless, effective local control is considered to be possible on individual and group properties, especially if neighbours cooperated in the program.

The Responsible person for the program in the Broken Hill District is Ross Andrews. It is suggested that the extent of the proposed program be identified and costed and submitted to the WCMA for consideration.

# FINAL REPORT OF THE WESTERN CMA PEST ANIMAL AND WEED PROJECT

## ***1. Introduction***

The Western Catchment Management Authority (WCMA) contracted the NSW Department of Primary Industries (NSW DPI) to undertake an assessment and recommend priorities for managing pest animals and weeds in the Western Catchment. This action is a high priority in the Blueprint for the Western Catchment. The relevant targets arising from this Blueprint are:

- MT5 No increase in the number of species or areas of noxious or exotic weeds infestation above current levels.
- MT6 No increase in the impacts of pest animals above current levels.

A full list of prioritised targets and actions for the Western Catchment is in the Western Catchment Blueprint (Western Catchment Management Board, 2003). Management of pest animals and weeds is one aspect of an integrated and holistic approach required to manage the natural resources of the Western Catchment for sustainable production and conservation of biodiversity.

Identification of key pest animal and weed issues in the Catchment and actions to address them were developed through a series of workshops, Cobar 6 December 2004, Broken Hill 6 April 2005 and Brewarrina 20 April 2005 (copies of these reports were sent previously under separate cover). In addition, the pest animal and weed concerns of Wanaaring RLPB area were gauged by a telephone survey of landholders (Appendix 1) while several landholders from the Walgett RLPB area attended a meeting at Lightning Ridge on 6 June 2005 (Appendix 2). The workshops broadly followed the process for setting priorities outlined in PESTPLAN (Braysher and Saunders, 2003). A professional facilitator directed each workshop.

This report is a consolidation of the key findings of the workshops, interviews and meetings.

### ***1.1 Catchment Blueprints***

The WCMA has \$2.5 million toward allocate to pest animal and weed management in the Catchment over the next 3 years. 80% of this money is required to go to on-ground works, with 15% to capacity building/community support, and 5% to monitoring and evaluation.

The WCMA engaged NSW DPI to:

- consult the community to determine priority pest species;

- assess current control measures in place;
- develop/recommend effective management strategies;
- build partnerships in pest management;
- develop a quick response framework to respond to new outbreaks;
- determine the community education needs regarding pests; and
- establish funding priorities for the Western CMA Pests program.

The results will help the CMA assess and guide its funding support for pest animal and weed management over the next three years.

## ***2. Pest Animal and Weed Issues***

While the concerns of landholders about the problems caused by individual species of pest animal and weed varied slightly between areas, there were several issues that were common across the Western Division. A major factor that has affected the status and concern over pest animals and weeds is the prolonged drought. The density and hence the damage due to most pest animals was considered to be relatively low due to drought. However, this is unlikely to remain the case after drought breaks. Well into a drought is often the best time to attack pest animals and weeds; that is when the densities of these problem organisms are relatively low. However, most landholders have limited resources during drought. More and more state and Commonwealth agencies are recognising this and provide special funds to assist landholders to control pests during this period.

### ***2.1 Pest Animals***

#### **2.1.1. Introduction**

Unlike the priority weeds where the aim is to prevent new introductions and eliminate those pockets that have established, pest animal management is aimed at managing the damage caused by established pests. Eradication, that is the permanent removal of every last pest animal, is not possible with existing technology except in some local areas. Consequently, the aim of management is for sustainable control to an acceptable level of the damage caused by pest animals. This should be based on current or realistically predicted levels of resources, knowledge about the biology of the pest, their impact, distribution, social and economic consequences, regulatory controls, and management techniques and strategies. For most pest animals this also requires management to be coordinated across a wide area, often involving a range of land uses (Braysher and Saunders, 2003). This will help to reduce the risk of rapid reinvasion from surrounding areas.

The primary agencies that are responsible for coordinating pest management in the Catchment are the RLP Boards and the NSW National Parks and Wildlife Service (NPWS), the other major land manager in the Catchment. The NPWS

and most Boards have or are developing local pest management plans. The Boards and the NSW DPI, through its Agriculture Protection Officers, can assist with planning and appropriate management techniques and strategies for the pest animals in the local area.

The Vertebrate Pest Research Unit of NSW DPI has compiled distribution maps of major pests in the Catchment (See maps attached to the workshop reports). Maps for feral cats and foxes are not included as these pests are pretty much evenly distributed across the area. Also maps for feral goats have not been included, because these are now regarded as a resource, at least on production land. While the maps are a good guide, local surveys are needed prior to developing local management plans in order to pinpoint the major concentrations of pest animals.

For more information pest animals and their management see the feral animal website: [www.feral.org.au](http://www.feral.org.au) and References and Further Reading.

### **2.1.2. Foxes**

Fox predation of lambs and native wildlife was seen to be the major pest animal issue in all areas. Foxes may take up to 20% of lambs born although studies suggest that the usual level of predation is much less, probably more like 7-10%. Nevertheless, losses can be significant, especially given the current price for lambs. Foxes are also seen as a major threat to several species of native wildlife (NSW NPWS 2001; 2002; 2003). In some districts, fox control was relatively opportunistic while in others such as the Cobar RLPB, control was well coordinated. The local RLPB's provide fox baits and advice on fox management upon request although programs are usually not well coordinated.

Throughout most of the Western Division, foxes defend territories of approximately 7 - 10 square kilometres. To prevent rapid reinvasion of foxes from surrounding areas, a buffer zone of two to three fox territories wide or approximately 7 kilometres around the area that is to be protected (e.g. the lambing paddock or the distribution of a threatened animal) should also be treated. The only efficient way of achieving this is for a group of landholders to cooperate and bait together so that they in effect create these buffer zones. Otherwise, sub-adult foxes will move into a territory where the adult has been poisoned within a few days.

In production areas, landholders can further reduce the chance of fox predation through neighbours joining their sheep at about the same time so that foxes are swamped by potential prey. Without coordinated lambing, it is harder to coordinate poisoning. Most landholders want to poison just prior to their lambing. This allows foxes to move from one lambing property to another in a moving feast.

Where they adjoin, landholders could take advantage of the fox control that is conducted on NPWS land. NSW NPWS are keen to be involved in surrounding neighbour programs and may be able to modify the timing of their poisoning to fit with the requirements of neighbours and their aim to protect lambs.

**Recommendation 1.** Based on the information provided at the Cobar workshop, the Cobar, Bourke, Wilcannia and Hillston RLP Board's and local NSW Environment and Conservation officers develop and submit to the WCMA, pest management plans based around Yathong Nature Reserve, Tambua and Canbelego.

### **2.1.3. Rabbits**

Rabbits were no longer seen to be as important as they once were. This was due to the prolonged drought and the impact of Rabbit Haemorrhagic Disease (RHD). However, rabbit numbers are expected to bounce back as rabbits adapt to RHD and when the drought eventually breaks. Managers were advised not to neglect them. While rabbit numbers are low is an ideal time to identify the location of major warrens and of key refuge areas used by rabbits during drought and destroy them. However, it is also recognised that rabbit control, especially warren ripping can be expensive. The Bureau of Rural Sciences has produced an excellent guide to the application and cost of available rabbit management techniques (See attachment to Brewarrina report).

### **2.1.4. Feral pigs**

Concern about feral pigs varied across the Catchment. Most concern was in the areas where there was substantial area of water and lignum and other forms of cover. Feral pigs damage pastures and wetlands, take lambs, damage fences and are of concern due to their potential role in carrying exotic stock diseases. Control is primarily through aerial shooting in key areas (when resources permit) supported by poisoning and some trapping. Some Boards were able to purchase several feral pig traps through funds provided by recent Commonwealth and State drought pest animal programs. These are provided to Board members on request. Several areas within the Western Division are popular with pig hunters and some landholders believe that they play an important role in reducing feral pig densities. However, the hunting effort is usually not coordinated and the impact on pig density is not known but is probably minimal.

### **2.1.5. Feral cats**

Feral cats were seen to be a major threat to native wildlife across the Catchment. However, there is no effective, broad-scale technique for managing them. A technique that is commonly used is opportunistic shooting but this is likely to be relatively ineffective. The Invasive Animal Cooperative Research Centre is

investigating a more effective lure to increase the effectiveness of cat poison baits ([www.pestanimal.crc.org.au](http://www.pestanimal.crc.org.au)).

### **2.1.6. Wild dogs**

Like feral pigs, concern about wild dogs varied across the Catchment. Areas of major concern were within the Milparinka Board and parts of the Walgett RLPB. Stray dogs, town dogs and escaped hunting dogs were of concern in all areas while there was also a problem with roaming dogs of opal miners. Some landholders expressed concern that the baits used to control foxes if consumed by wild dogs, could make the dogs bait shy. Advice from NSW DPI is that a fox bait is sufficient to kill a 25kg dog but if inducing bait-shyness is a major concern, dog baits should be used instead of fox baits in those areas where both foxes and wild dogs were a problem.

### **2.1.7. Native animals**

Crows and Wedge-tail eagles are seen to be a problem as they prey on lambs. Crows are unprotected in the Western Division and can be shot, but eagles are protected.

Kangaroo numbers are low, primarily due to the drought and are not considered to be a significant issue in the Catchment at present. The recently released Glove Box Guide to kangaroo management in the Murray-Darling Basin (Hacker and McLeod, 2003) is an excellent guide to the kangaroo issue and how best to manage them.

## **2.2 Weeds**

### **2.2.1. Introduction**

The workshops and the other consultation processes identified a number of damaging weeds in the Catchment. The weeds of most concern to landholders were native woody weeds (Invasive scrub). Most of the non-native species are widespread and well established with little prospect of effective long-term, broad-scale management until new techniques such as effective bio-control agents are developed although local management may be effective. Most of those that were consulted agreed that the primary focus should be to manage those that are not well established but have the potential to become a major problem. In addition, strategies should be developed and put in place to detect and control other potential weeds, especially those that could spread south from cropping areas in Queensland.

### **2.2.2. Woody weeds**

Woody weeds (now often called invasive scrub) were considered to be the primary weed problem in the Catchment, but it was recognised that their management was complicated as they came under the NSW *Native Vegetation Conservation Act 1997*. Regulations are being developed to guide the management of native woody weeds. The major woody species of concern are Turpentine, Budda or false Sandalwood, Broadleaf hopbush, Narrow leaf hopbush, Puntly bush and Silver cassia.

The Western Catchment Blueprint has identified management of woody weeds as a priority issue. The stated aims in the Blueprint are:

- 2.3 million hectares under ongoing management to prevent scrub encroachment within 10 years of Blueprint approval.
- Decrease the area of scrub dominated landscapes by 200,000 hectares within 10 years of Blueprint approval.

Several major actions are proposed for the management of woody weeds (WCM Board, 2003). Due to the legislative restrictions and current reviews on woody weeds, this issue was not covered in detail at the workshops or in this report. Nevertheless, the workshops noted the various actions that are aimed at effectively managing woody weeds in the catchment and strongly supports their implementation. They include:

- Finalising the woody weed code of practice for Government approval.
- Mapping the areas of land currently scrub dominated and to identify and map areas of immediate risk of becoming scrub dominated.
- Promote effective management/treatment options as potential tools that maintain open areas in an open condition during appropriate seasonal conditions. Explore, report and promote opportunities to utilise dense stands of woody weeds for commercial and environmental purposes.

**Recommendation 2.** The workshop supports and encourages WCMA to undertake the actions identified in the WC Blueprint to manage woody weeds in the Catchment.

### **2.2.3. Notifiable weeds and other weeds of concern**

There are several notifiable weeds and others of weeds of concern in the Catchment that occasionally occur or that are likely to occur. Many of the weeds in the Western Division also occur in the Lower Murray-Darling which has produced a comprehensive report on the weeds for their CMA (Lower Murray-Darling CMA, 2004). Weeds are believed to be coming in on headers, other equipment and domestic stock transports. The increased movement of stock in and out of the Catchment associated with agistment in response to the prolonged drought is likely to increase the incidence of outbreaks of notifiable weeds. Constant surveillance is required, especially of main highways.

Notifiable W1 weeds are required to be notified to the NSW DPI weeds reporting centre or the Shire weeds officer and continually suppressed and destroyed. W2 weeds do not need to be notified but need to be continually suppressed and destroyed.

A list of the major weeds and their category for each of the regions in the Western Division can be found in Appendix 3. Additional information on weeds including their identification and management can be found on the following websites:

- NSW DPI: [www.agric.nsw.gov.au/reader/weeds](http://www.agric.nsw.gov.au/reader/weeds)
  - [For noxious weeds the site is: www.agric.nsw.gov.au/noxweed/](http://www.agric.nsw.gov.au/noxweed/)
- The Commonwealth Department of Agriculture Fisheries and Forestry Australia: [www.affa.gov.au/content/publications](http://www.affa.gov.au/content/publications)
- The Weeds Cooperative Research Centre: [www.weeds.crc.org.au/](http://www.weeds.crc.org.au/).

Additional references for further reading on weeds are listed under References and Further Reading.

**Table 1 Major weeds of concern that were identified at the workshops**

<b>Common name</b>	<b>Scientific name</b>	<b>Comment</b>
Parkinsonia Mesquite	<i>Parkinsonia aculeata</i> <i>Prosopis spp.</i>	Most areas of WD Through most of WD – major problem south of Broken Hill
Parthenium weed	<i>Parthenium hysterophorus</i>	Most areas of WD
Prickly acacia	<i>Acacia nilotica</i>	Mainly in the northern area
African boxthorn	<i>Lycium ferocissimum</i>	Most areas of WD
Golden Dodder	<i>Cuscuta campestris</i>	Mainly in the far west of WD
Johnson grass	<i>Sorghum halepense</i>	Mainly the northern section
Lippia	<i>Phyla nodiflora</i>	Most areas in WD
Hudson's Pear	<i>Cylindropuntia rosea</i>	Mainly around Opal diggings – Lightning Ridge
Desert rice flower Or Pimelia	<i>Pimelia simplex</i>	Of concern in some districts due to toxicity to cattle
Noogoora and Bathurst Burr	<i>Xanthium sp</i>	Out-of-control weeds. See suggested plan for Broken Hill

#### **2.2.4. Rapid response strategy for notifiable weeds**

All workshops strongly supported the need for an effective Rapid Response Strategy for identifying noxious these and other notifiable and W2 category weeds in the whole of the Western Catchment. The elements of a Rapid Response Strategy include:

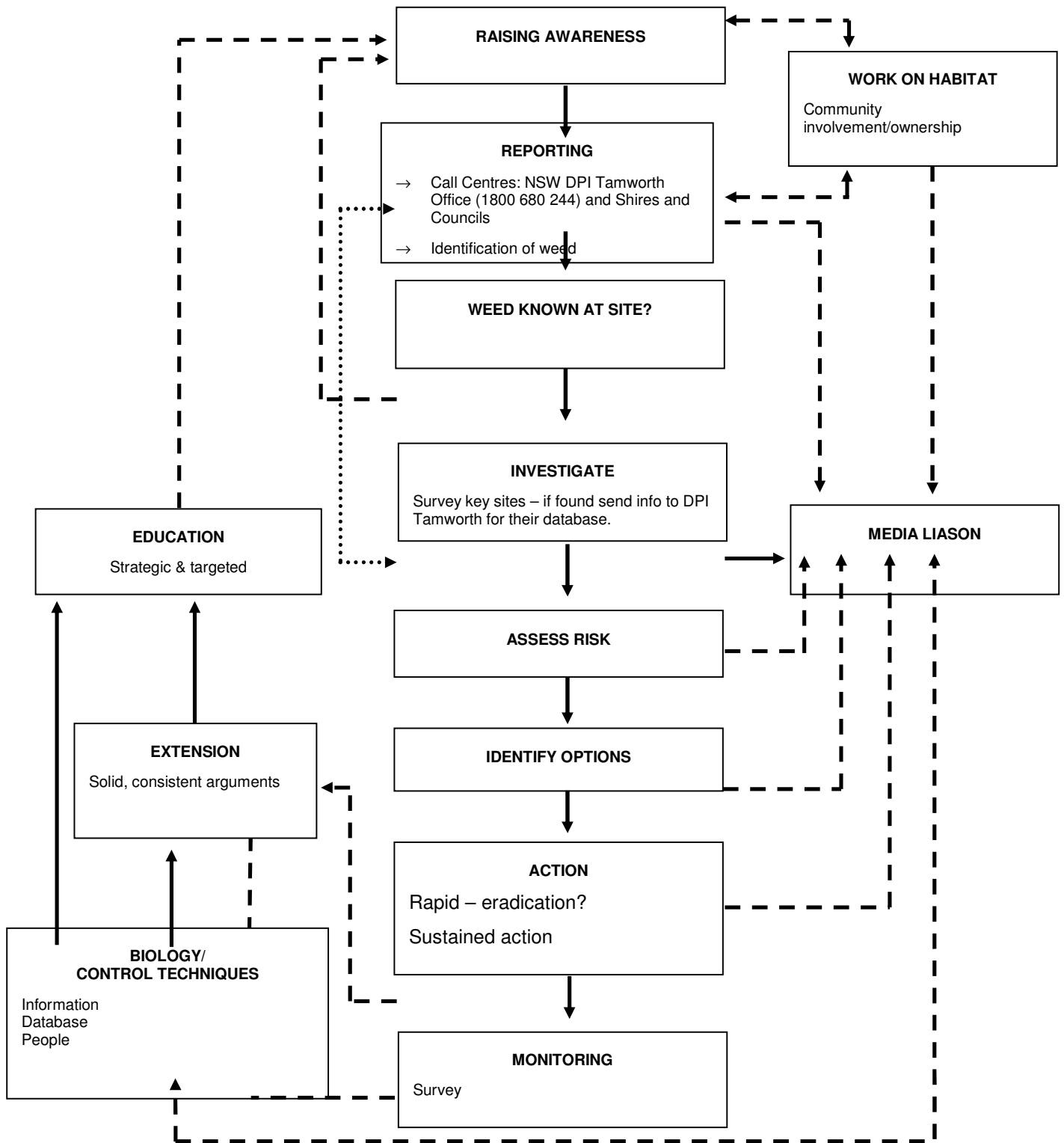
- Reports of notifiable weeds to be sent in the first instance to the Shire or Council weeds officer.
- Weed officer to check report on site with the person that reported it (if possible) and to determine and undertake appropriate management;
  - if the person that reported the outbreak can not be present for the onsite inspection, it is essential that they be informed of the follow up action taken.
- Once verified the occurrence is to be lodged with NSW DPI (Tamworth) and entered into their Weeds database using the appropriate form (See the DPI weeds website for details: [www.agric.nsw.gov.au/reader/weeds-reporting](http://www.agric.nsw.gov.au/reader/weeds-reporting)). The postal address is:  
 Noxious Weeds Liaison Officer,  
 NSW Department of Primary Industries  
 RMB 944, Calala Lane  
 Tamworth 2340 Weed Hotline: 1800 680 244; [weeds@dpi.nsw.gov.au](mailto:weeds@dpi.nsw.gov.au)
- Use appropriate techniques to eradicate the detected outbreak.
- Local Shires to develop and run a program to increase awareness and understanding of noxious weeds and how to detect them. The key target groups for the program are:
  - RLPB officers;
  - National parks field officers;
  - mining company field officers;
  - landholders (at farming field days and at fox baiting meetings);
  - Local Roads and Traffic Authority officers and their contractors;
  - Country Energy and other infrastructure development and maintenance agencies;
  - long-distant truck drivers; and
  - schools.

The primary site for new outbreaks is likely to be on roadsides.

Each Shire Council to have in place an operational Rapid Response Strategy (see Figure 1) including appropriate equipment and permits to respond to reported sightings of noxious weeds.

**Recommendation 3.** Shire weeds officers in association with NSW DPI develop a Rapid Response Strategy to detect and control new outbreaks of key exotic weeds in the Catchment.

**Figure 1: Flowchart for notifiable weed outbreaks Western Catchment**



- - - = Communication  
 ..... = feedback to caller (this is essential)

### 2.2.5. Mesquite

This project was developed for managing mesquite around Broken Hill and in the LMDCMA. However, the same approach could apply to managing mesquite in other parts of the Catchment and to managing weeds such as Hudson's Pear.

#### *Problem*

Mesquite occurs in at least 18 properties in the Broken Hill District and occurs across both the Western and Lower Murray-Darling Catchments. It is an exotic and invasive woody weed that has the potential to invade large areas. Established infestations inhibit growth of pasture and access by stock which results in substantial loss of production. It is declared noxious in NSW and is a weed of national concern (Qld NRM, 2003). Funding support to manage his weed is available through the NSW DPI Noxious Weed Program.

Mesquite is considered to be a biological time-bomb for the Catchment. A major flood such as 1:200 year event would spread it widely so that effective wide-scale management would become unlikely. Mature pods have a high sugar and protein content and are highly sought by kangaroos, pigs, stock and goats. Seed survival in gut varies (70% in cattle and 25% in sheep). There are several species in Australia but *P. velutina* and *P. velutina* X *P. glandulosa* (*Var torreyana*) hybrids are those that occur in NSW.

The workshop identified several potential constraints to effective management of mesquite:

- The need for management to be coordinated and implemented across its distribution, but especially in the upstream parts of the catchment.
- The scale of the problem is such that individual landholders are unlikely to have the financial and physical resources required for effective management.
- Several landholders where it currently occurs are unaware of the problem and the potential long-term impact. As a consequence, they are not motivated to become involved in management. An effective communication and awareness program is required.
- To be effective, long-term monitoring and follow up is required to identify and treat new outbreaks and to treat new growth in treated areas.

#### *Objectives*

- Develop an awareness and understanding by local landholders of the problem and what can and needs to done.
- Eradicate all mature plants before they produce seed and prevent future invasion of mesquite.

### *Strategy*

In cooperation with the LMD CMA and NSW DPI obtain sufficient resources to develop and implement an effective management program. This includes:

- Develop and implement an effective awareness and understanding program about mesquite and what needs to be done. This should be targeted primarily (at least initially) toward those landholders that have mesquite or adjoin those properties with the plant and which need to be involved in the coordinated program.
- Engage a project officer to contact the owner/manager of the properties to be treated and identify the extent and the nature of the infestations.
  - Plot the distribution using a Global Positioning System (GPS).
- Assess the best strategy for conducting the work. Alternatives include using CMA resources to purchase the chemical and other equipment and property owners to undertake the control or to engage a contractor to undertake the bulk of the initial removal.
- Spray in spring while there is active growth using the “basal bark” method (Access – Triclopyr and picloram, Qld NRM, 2003)
  - Scattered plants: basal bark spray and cut stump techniques (stems less than 50mm diameter).
  - Low density plants: same as above (1-500 plants per hectare).
  - Medium density plants: blade plough, stick rake and basal bark (500-5000 plants per hectare)
    - Investigate the effectiveness of cutting off and saturating the bud core with Access/diesel for stumps up to 75 mm diameter.
- In order to encourage new owners to become involved, investigate the potential for attaching a covenant to leases requiring the purchaser to be made aware if mesquite is on the property and requiring them to eliminate it as a condition of purchase.
- Regularly report progress with the control to all properties engaged in the program. This can be done through the RLPB newsletter or a simple A4 newsletter. Regular feedback is essential to maintain enthusiasm.

### *Resources*

Control of mesquite is a priority for the LMD CMA and is also likely to be a priority for the WCMA. In addition, support for control is available through the NSW Noxious Weed Program. The responsible group should seek funds from each of these funding sources to provide the necessary resources for a coordinated management program.

Resources required include:

- The cost of engaging and equipping a suitable project officer.

- This includes a phone, computer and vehicle.
- Purchase of the required amounts of Access and Diesel.
- Spray and safety equipment

*Monitoring:*

Use the maps and GPS locations of mesquite infestations developed for planning the project to set up a series of photo-points to monitor effectiveness of control and recovery of vegetation. Photograph each point from the same angle to a flagged star picket once every 3 months.

Inspect treated areas every 3 months and treat any regrowth.

**Recommendation 6** That a program to control the current infestation of the noxious weed mesquite be developed for the Broken Hill District and be submitted for funding support from the Western and Lower Murray-Darling CMA's and the NSW Noxious Weeds Program.

### **2.2.6. Hudson's Pear**

Participants at the Lightning Ridge meeting listed Hudson's pear (*Cylindropuntia rosea*) as a weed that they are very concerned about. It is a favoured cactus plant around opal diggings and the gardens of miners, presumably because the vicious spines on the plant provide some security to the opal diggings. The plant mainly reproduces vegetatively, but very successfully and could spread widely especially with local floods. It has spread off the diggings and is of major concern to local landholders mainly because of the damage that the spines cause. While Opal miners are required to rehabilitate the mine sites including removal of any weeds, few seem to do so. It is now distributed over approx 50,000 hectares, and while it would be a major project, it is possible that it could be eradicated, especially since the main sites are the old mines which are relatively easy to locate.

The Weeds Cooperative Research Centre is investigating the possibility of using biological control for Hudson's Pear but that would be a long way into the future. The Macquarie Valley Weeds Advisory Committee is developing a proposal for Hudson's pear to be listed as a Category 2 Weed.

**Recommendation 7.** That the Walgett Shire Council in consultation with NSW DPI undertake a pilot project to determine the feasibility of eradicating Hudson's Pear in the Lightning Ridge District. The approach outlined above for managing mesquite could be readily adapted to managing Hudson's Pear.

### **2.2.7. Out of control weeds**

Weeds such as Noogoora and Bathurst Burr (*Xanthium spp*) and Horehound (*Marrumbium vulgare*) are widespread and well established throughout the Western Division. They cause significant loss of production primarily through

contamination of the wool clip. It was recognised that long-term, widespread control across the Catchment is unlikely with currently available techniques. These weeds produce large amounts of long-lived seeds and there are large seed banks in the soil. Nevertheless, effective control is considered to be feasible on individual and group properties, especially if neighbours cooperated in the program.

Major constraints to effective control were seen to be:

- Potential impact on desired plants and trees from the chemicals used to control the weeds.
- The cost of chemicals and their application.
- Regulations that limit the use of chemicals and other techniques such as burning off.
- Reluctance of some neighbours to cooperate in joint control (primarily due to insufficient resources to undertake control).

#### *Objective*

To reduce the amount of vegetable matter in the wool clip to less than 5%

#### *Strategy*

- Ideally a group of properties would become involved in a coordinated control program. Landcare or other local groups may provide the forum to explain the issue and the proposed action and to develop a coordinated program. Ideally a suitable project officer should be engaged to coordinate the program. There may be an opportunity to use the project officer proposed for the mesquite program to assist with the coordination of the out-of-control weed program in the Broken Hill area. For those properties involved the management strategy is as follows:
  - Identify thick growth areas of these weeds and to surround them with stock fencing.
  - Rotate stock through these heavily infested areas, cattle instead of sheep and sheep only after they have been shorn.
  - Low infestations to be treated by grubbing out plants and spraying with the appropriate herbicide (Parsons and Cuthbertson, 2001). These weeds are annuals so prevention of seeding will eventually eliminate the plants as long as new infestations are prevented. There has been some success through establishing competing pastures such as silk sorghum.
  - Effective control on highly infested areas is much more difficult. Burning to kill plants, spraying new emergents and allowing stock to graze pastures before flowering can help as well as attempting to establish competing pastures. However, given that the weeds are widespread, landholders need to be careful not to introduce new seeds with stock and to control new outbreaks on cleared land.

### *Resources*

Control is expensive. Funds are required for fencing material, chemicals and spray equipment. Funds are not available for any of these weeds under the NSW Noxious Weeds program. If the chemicals and fencing material could be provided, landholders could use their equipment and labour to apply the spray and erect the fencing.

### *Monitoring*

The following monitoring should be conducted:

- Percentage vegetable matter in the fleece from treated and untreated properties.
- Cost of the management program compared to the increase in return from treated properties.
- A series of photo-points based on the maps and GPS locations of weed infestations to monitor the effectiveness of control and recovery of vegetation. Photograph each point from the same angle to a flagged star picket once every 3 months.

## **2.3 Training in weed identification and management**

There are several groups and individuals that could assist Council and Shire Weeds officers in the identification and destruction of notifiable and other weeds of concern. These include RLPB rangers, Roads and Traffic Authority officers and their contractors, Country Energy and other groups responsible for infrastructure development and maintenance within the Catchment. However, it was recognised that many of these groups have little knowledge and training in weed identification and management.

NSW DPI has run weed identification and management courses in the recent past, but they have been ad hoc. In order to meet the requirements for addressing notifiable weeds in the Western Catchment, NSW DPI would need to develop a course that is tailored to meet the needs of the targeted groups. It suggested that they be run in Brewarrina, Broken Hill and Cobar. The course should cover:

- The *Noxious Weeds Act* and reporting requirements.
- Weed identification and management
  - Targeted specifically at the major weeds of concern in the Catchment.
- The recommended Rapid Response Strategy for noxious weed detection and management.

**Recommendation 5:** NSW DPI to be engaged to develop and run a weed identification and management course for key target groups in Brewarrina, Broken Hill and Cobar.

### ***2.4 Weeds officer for the unincorporated area***

Unlike the shires and councils, there is no dedicated weeds officer for the unincorporated area of NSW. This is a major impediment to detecting, reporting and destroying outbreaks of notifiable weeds and in coordinating weed management programs. The need was seen to be greater now than in the past due to the increased traffic through the area as a result of road sealing. Appointment of a weeds officer for the area is a high priority. The duties of the officer should include:

- Being a first point of contact for reporting notifiable weeds and advice on weeds and their management.
- Control outbreaks of noxious weeds.
- Conduct follow up monitoring of treated areas.
- Implement the weeds education strategy.

The officer would need to be appointed by the Commissioner for the Western Division, authorised under the *Noxious Weeds Act, 1993* and be based in an area where they had administrative and other support. This could be the NSW DPI offices in Broken Hill or one of the RLPB offices.

Funds to appoint the officer could be jointly provided by the three Boards in the unincorporated area (Broken Hill, Milparinka and Wilcannia), and through the NSW Noxious Weeds Program.

To ensure long-term funding for the position, it was suggested that the role and importance of the officer be promoted. This could be through:

- Promoting the success in detecting and treating outbreaks.
- Lobbying local politicians about the need and importance of having a permanent weeds officer for the area. Ideally, the local politicians should be encouraged to adopt long-term appointment of a weeds officer as part of their platform for the next election.

## **3. Education and raising awareness**

All workshops saw education as an important component of an effective strategy for managing exotic weeds and pest animals. Education about pest animals is reasonably well coordinated by the RLPB's and NPWS but education concerning weeds is less coordinated. Two major thrusts are suggested for the education strategy. One aimed at preventing initial establishment and the other at gaining

support for actions to manage weeds once they are detected. However, there was considerable overlap between the two components:

1. Reduce the risk of new species becoming established through developing awareness and understanding amongst key groups and individuals about key weeds, the damage that they can cause and the options for managing them; and
2. More locally, developing an awareness, understanding and ownership of the problem and solutions amongst key local groups and individuals about the actions required to manage weeds after they are first detected or when ongoing management is required.

There are several actions and opportunities for education concerning both weeds and pest animals. These include:

- Better promoting and using the NSW Department of Primary Industries comprehensive website on weeds and their management: [www.agric.nsw.gov.au/](http://www.agric.nsw.gov.au/). It contains weed identification guides and other information for reporting and managing weeds including high priority species. The Weeds Cooperative Research Centre also has a comprehensive website on weeds: [www.weeds.crc.org.au/](http://www.weeds.crc.org.au/).
- In developing the education strategy or strategies, it is important to be clear about the aim of the strategy. Examples of aims for aspects of the strategy include:
  - develop an awareness about exotic weeds;
  - develop an understanding of the issue and what can be done; and/or
  - encourage groups and individuals to adopt an appropriate behaviour?
- The strategy needs to be tailored to the particular group being targeted and the outcome required. For example, the message to school groups would be different to that aimed at long distance stock and grain carters,
  - a key target group is the local Mining Industry, especially their field survey officers. They require a weed information pack that they can use to identify problem weeds and which explains what actions they should take including what to record and where to send the information
- Be aware of potential free advertising such as:
  - Local rural radio such as the ABC,
  - Chronicle/Local papers, and
  - Media officers from NSW DPI and the Department of Environment and Conservation.
- Develop a drumbeat message – piggyback slogan onto every program.
- If a management program is initiated in an area, ensure that there is continual feedback to key groups and individuals on progress. This may be through a low-key, A4 newsletter that contains monitoring and other information including chat items of interest to the group.
- Develop, erect and maintain appropriate signage at key sites such as at the border on major roads.

- Prepare and distribute to key groups such as RLPB rangers, mine field workers and long-distance truck operators, relevant fact sheets on weeds and their management. There are guides for most species of concern on the NSW DPI and Weeds CRC websites.
- Develop appropriate video footage and photos about weeds and their management so that they are available to newspapers and TV when a story breaks. This will increase the chance of a story being run.
- Develop explanatory fact sheets on local weeds and also on pest animals for local and state politicians – regularly update the sheets.
- Develop a connection with universities. Many universities are keen to have a list of applied projects for their postgraduate students. They can include educational, research and social projects.

**Recommendation 4:** RLPBoards, Shires and Councils, NSW DPI and NSW Department of Environment and Conservation develop and implement a strategy for key target groups to increase their awareness and understanding about weeds and pest animals in the Western Catchment and what should be done about them.

#### **4. Cooperative programs**

NSW NPWS (Department of Environment and Conservation) have several well established pest management programs (NPWS 2002; 2003). Their programs are primarily based on managing the damage that pest animals and weeds cause to native plants, animals and communities. However, where practicable, NPWS is keen to work cooperatively with surrounding landholders and to integrate their programs as best they can without compromising the conservation aims. A good example is the cooperative fox control on and around Yathong, Nombinnie and Round Hill Nature Reserves. The primary aim has been to protect and increase Mallee fowl numbers although local pastoralists also saw the program as helping to protect their lambing enterprises. It often helps to build on the cooperation and success of such existing programs by including a number of other properties to fill current gaps where there is no baiting and eventually link with similar programs in other parts of the Catchment.

NPWS made it clear at all the workshops that it was keen to undertake cooperative pest and weed programs with neighbours although they also stressed that their resources were limited and that their primary focus had to be on meeting key conservation objectives.

At the workshops, several other agencies stated that they would like to be better informed and involved in pest animal and weed management. These groups included Mines such as Endeavour Mine (they have field prospectors that might be the first to detect new weed outbreaks), the NSW Roads and Traffic Authority and their contractors as well as other infrastructure managers. As an initial step,

it would help to improve the awareness and understanding of these agencies through the weed training program.

## 5 Absentee landholders

Absentee landholders and unoccupied land are a significant and growing proportion of the land in some parts of the Catchment, notably in the Cobar and Brewarrina Boards. Special concern was expressed about those, often absentee, landholders, that have purchased properties as hunting reserves. These properties are usually managed to encourage the pest animals that surrounding landholders want to manage. The following are some suggested strategies for identifying and involving absentee landholders in local pest animal and weed programs:

- Contact the owner **AND** the manager when sending out information about pests, weeds and local management programs.
- RLPBoards to send out other information with the annual rates notice.
- RLPBoards to send information for absentee landholders to Stock and Station agents and to solicitors handling property conveyancing to give to new owners.
- Use the neighbour word-of-mouth approach. In particular, make a special effort to contact new people as soon as they come to the area, welcome them and inform them about the program. Informal BBQ's are often good for this.

For those that have hunting properties:

- Involve them and shooting groups in discussions about programs
  - Shooters may be keen to help with pest control outside the hunting property, although landholders should be careful when including recreational shooters to ensure that they do not compromise the aims of the management program. Consider imposing strict conditions about how they can be involved.
- Look at appropriate fencing and buffer-zone control around hunting properties to contain pests on the hunting property.

**NOTE:** Legislation can be used to encourage reluctant landholders to become involved in cooperative programs or to undertake weed and pest animal control. However, legislation should be used as a last resort to back up the above listed actions aimed at cooperation – not the first action. Legislation is a fairly blunt instrument and is rarely effective on its own and can be difficult and costly to enforce.

## 6 Funding

The WCMA has significant funds to allocate to pest animal and weed action in the coming financial year. Projects identified in this report are likely to be

favourably considered for financial support. As a general principle, funds are allocated on a cost sharing basis, usually on a \$ for \$ basis. The applicant can contribute cash or it may be in-kind in the form of labour, equipment or other resources or a combination of these means. There are other programs that support weed management in the Catchment. These include the NSW Noxious Weeds Program. Potential applicants should read the attached application for Fox management in the Cobar RLPB as a guide (Appendix 4) and contact the relevant WCMA officer for their area to discuss and prepare an application in the appropriate format.

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## **APPENDIX 1 Summary of telephone interviews of landholders in the Wanaaring RLPB**

### **Landholders interviewed:**

**Robert Bartlett; Graham Brown; Colin and Beryl Leigo; Stuart and Josie Keane; and Peter and Janet Hughes**

### ***Pest Animal Issues***

- Rabbits are considered to be a problem on approximately 10% of the District.
- Fox predation of lambs and native wildlife.

- Feral pig numbers are low due to the drought and an effective trapping program. Sporting Shooters that hunt pigs are of some help but also of concern because of the damage caused by escaped pig dogs.
- Feral cats were seen to be a major threat to native wildlife.
- Crows and Wedge-tail eagles are seen to be a problem as they prey on lambs.
- Kangaroos numbers are low due to the drought and not considered to be a significant issue at present.
- Absentee landholders and unoccupied land are a significant and growing proportion of the land in the District.

### **Weed Issues**

- Woody weeds are a major issue.
- African box thorn (*Lycium ferocissimum*) – there have been several infestations in the District.
- Johnson Grass (*Sorghum halepense*).
- Lippia (*Phyla nodiflora*) occurs in the District but control is difficult.
- Golden Dodder (*Cuscuta spp*) outbreaks have been recorded on the Brewarrina to Bourke Road.
- Parkinsonia has been recorded.
- Mesquite is a concern but there have been only a couple of outbreaks in the District.
- Parthenium outbreaks have been recorded. All have been along roadsides.
- Pimelia and its toxicity to cattle was seen by some as a growing issue.
- Wild turnip (*Raphanus raphanistrum*), is increasing along several roads
- Spiny Burr-grass (*Cenchrus spp*).
- Silver-leafed nightshade (*Solanum elaeagnifolium*).
- Noogoora and Bathurst Burr (*Xanthium sp*) are widespread and significant weeds in the District.
- Water plants such as Cumbungi or bull rush (*Typha spp*) and pepper trees (*Schinus areira*). Hudson pear (*Cylindropuntia sp*), is becoming of increasing concern in the Lightning Ridge area where it has escaped from Opal Diggings.
- Devils Rope Pear (*Cylindropuntia imbricata*) has been reported in the District.

## APPENDIX 2 Report of Lightning Ridge meeting

### LIGHTNING RIDGE MEETING

NPWS Regional Office

6 June 2005

**Attendees:** Mike Braysher (facilitator), Bill Atkinson (NSW DPI), Andy Bostock, Doug Wilson, Juliet McConochie (CMA), Nick Deshon, Doug Lehman, John Knight, Cameron Ritter, Hamish Caddy (CMA), James Morris, Ian Butler, Claire Bergin (CMA), James Fleming (NSW DPI), Mal Scott (RLPB), Bill Atkinson (NSW DPI).

#### *Pest Plants*

- Attendees highlighted the issue of Hudson's Pear in Lightning Ridge area that is prevalent around the mines and making its way to the floodplain. At present it occupies the mining area of 50 000 acres and is becoming a problem because of absentee miners and lack of control. Best control is Access and diesel. Good opportunity for control given its limited distribution.
- Prickly Pear was discussed but not considered to be a major issue. Other weed species mentioned were African Boxthorn; Mother of Millions; Lippia is spreading from Moree to Narrabri, Mimosa, Parkinsonia (Weed Category 1); Green Cestrum (Weed Category 2); Desert Riceflower (minor problem); and Mint Weed, which can poison stock. Control of Mint Weed is by chemicals and cultivation.
- A distribution map is required – information to be sent to Mal Scott for coordination.
- There is occurrence of Mesquite at Louth.
- Parthenium outbreaks are mainly on the highway due to truck movement.
- Mike Braysher highlighted the fact that roadside weeds and areas where stock feed sites are going to be an issue when the drought breaks.
- *Mike Braysher said that he will send a copy of the Broken Hill report to Mal Scott.* NSW DPI has a funding support program for managing notifiable weeds. Hudson Pear is relatively localised, therefore it maybe more appropriate to apply for CMA funding. It is important to build into the budget re-establishment of pasture if it is required i.e. for Mint Weed to give a long-term outcome.

#### **Pest Animals**

- Attendees noted rabbits are not a major problem in the area. They are surface dwellers living mainly in fallen timber. They said that hares are widespread although not a major problem.
- Kangaroos are a protected species and managed within the harvesting program of the commercial industry.

- A question was asked about controlling cats with fox baits. Mike Braysher explained that cats are live feeders and rarely take baits. 90% of cat kittens don't make their first year. It was noted that Toxoplasmosis which cats help to cycle, causes premature abortion in sheep.
- Feral pigs are an issue in a good season i.e. high rainfall. It was suggested a funding application be made under the National Action Plan on water (NAP) as pigs affect water quality. The application would have to meet the NAP blueprint objective.
- Attendees raised the issue of wild dogs and in particular, stray pig dogs and miner's dogs. This is an ongoing issue and it was suggested that the CMA probably would not support an application. It was suggested the issue should be discussed with the Wild Dog Control Board.
- It is not possible to access CMA funding for plague locusts. The NSW DPI manages this issue.
- Attendees raised the issue of emus being a problem. They were advised by Mike Braysher to contact NSW NPWS and explain the problem and where appropriate, apply for a destruction permit.
- It was agreed by all attendees that goats were a supplementary source of income and not considered a pest by landholders although they are still a management concern on National Parks.
- Mike Braysher talked about foxes and explained to the group that they have a territory size in the District of approximately 7-9 sq km. It is critical to extend the control two to three fox territories (approximately 7 km) to ensure effective control of fox damage in the core area. Any less and foxes are likely to re-invade in about a week. Foxes can move readily and rapidly move 20 km. Fox control over a large scale must be done with surrounding landholders working in a coordinated way.
- Mal Scott (RLPB) explained that he is trying to extend the fox control program by annual group baiting with the aim of increasing the treated area. Timing is critical and should be undertaken just prior to lambing. The most active baiters are around the Lightning Ridge area.
- Mike Braysher stated that Glen Saunders (NSW DPI) recommends one bait per 400 metres. More intensive baiting is likely to lead to excessive caching of uneaten baits. Fox control for conservation is usually conducted three times a year. If it is done for agricultural production, once a year just prior to lambing is usually sufficient. Foxes normally cub around spring and have a gestation period slightly shorter than the domestic dog. Foxes are hard to monitor because they are very smart and very hard to see. There are few good survey techniques to determine the density of foxes. The best indication of success is a reduction in bait take and in fox damage (for example an increase in lamb marking rates).
- Attendees raised the issue of using a bounty to encourage pest control. Mike Braysher explained that bounties have been shown to be ineffective. Bounty hunters usually go where the foxes are most common and not necessarily to areas where they are causing the most damage. Bounties also have been shown to be easily rorted.

## CONTACT LIST

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Mal Scott	RLPB, Walgett	6828 1091	6828 1507	
Bill Atkinson	NSW DPI, Dubbo	0427 800 376		

## APPENDIX 3 Noxious weeds and their categories for various sections of the Western Division

### **Bourke**

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Bathurst		
Noogoora		
Californian	<i>Xanthium spp.</i>	W3
Cockle burrs		
Black knapweed	<i>Centaurea nigra</i>	W1
Broomrape	<i>Orobanche spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Columbus grass	<i>Sorghum x alnum</i>	W2
Dodder	<i>Cuscuta campestris</i>	W2
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1
Horsetail	<i>Equisetum spp.</i>	W1
Jerusalem thorn	<i>Parkinsonia aculeata</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Siam weed	<i>Chromolaena odorata</i>	W1
Spiny burrgrass	<i>Cenchrus incertus</i>	W2
Spiny burrgrass	<i>Cenchrus longispinus</i>	W2
Spotted knapweed	<i>Centaurea maculosa</i>	W1
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

### **Brewarrina**

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Bathurst		
Noogoora		
Californian	<i>Xanthium spp.</i>	W3
Cockle burrs		

Black knapweed	<i>Centaurea nigra</i>	W1
Broomrape	<i>Orobanche spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Columbus grass	<i>Sorghum x almum</i>	W2
Dodder	<i>Cuscuta campestris</i>	W2
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1
Horsetail	<i>Equisetum spp.</i>	W1
Jerusalem thorn	<i>Parkinsonia aculeata</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Siam weed	<i>Chromolaena odorata</i>	W1
Spiny burrgrass	<i>Cenchrus incertus</i>	W2
Spiny burrgrass	<i>Cenchrus longispinus</i>	W2
Spotted knapweed	<i>Centaurea maculosa</i>	W1
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

**Broken Hill**

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Black knapweed	<i>Centaurea nigra</i>	W1
Broomrape	<i>Orobanche spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Camel thorn	<i>Alhagi pseudalhagi</i>	W2
Columbus grass	<i>Sorghum x almum</i>	W2
Dodder	<i>Cuscuta campestris</i>	W2
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1
Horsetail	<i>Equisetum spp.</i>	W1
Jerusalem thorn	<i>Parkinsonia aculeata</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Siam weed	<i>Chromolaena odorata</i>	W1
Spotted knapweed	<i>Centaurea maculosa</i>	W1
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

**Central Darling**

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Black knapweed	<i>Centaurea nigra</i>	W1
Broomrape	<i>Orobanche spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Columbus grass	<i>Sorghum x almum</i>	W2
Dodder	<i>Cuscuta campestris</i>	W2
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1
Horsetail	<i>Equisetum spp.</i>	W1
Jerusalem thorn	<i>Parkinsonia aculeata</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Siam weed	<i>Chromolaena odorata</i>	W1
Spotted knapweed	<i>Centaurea maculosa</i>	W1
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

**Cobar**

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Bathurst		
Noogoora	<i>Xanthium spp.</i>	W3
Californian		
Cockle burrs		
Black knapweed	<i>Centaurea nigra</i>	W1
Blue heliotrope	<i>Heliotropium amplexicaule</i>	W2
Broomrape	<i>Orobanche spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Columbus grass	<i>Sorghum x almum</i>	W2
Dodder	<i>Cuscuta campestris</i>	W2
Galvanized burr	<i>Sclerolaena birchii</i>	W3
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1
Horsetail	<i>Equisetum spp.</i>	W1
Jerusalem thorn	<i>Parkinsonia aculeata</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Siam weed	<i>Chromolaena odorata</i>	W1
Spiny burrgrass	<i>Cenchrus incertus</i>	W2
Spiny burrgrass	<i>Cenchrus longispinus</i>	W2
Spotted knapweed	<i>Centaurea maculosa</i>	W1
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

**Unincorporated Area**

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Black knapweed	<i>Centaurea nigra</i>	W1
Broomrape	<i>Orobanche spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Camel thorn	<i>Alhagi pseudalhagi</i>	W2
Columbus grass	<i>Sorghum x almum</i>	W2

Dodder	<i>Cuscuta campestris</i>	W2
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1
Horsetail	<i>Equisetum spp.</i>	W1
Jerusalem thorn	<i>Parkinsonia aculeata</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Siam weed	<i>Chromolaena odorata</i>	W1
Spotted knapweed	<i>Centaurea maculosa</i>	W1
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

### **Castlereagh Macquarie County Council**

The following weeds are declared noxious in the Castlereagh Macquarie County Council control area (**including Coonamble, Gilgandra, Walgett, Warren and Warrumbungle council areas**).

<b>Common name</b>	<b>Scientific name</b>	<b>Category</b>
African boxthorn	<i>Lycium ferocissimum</i>	W2
Alligator weed	<i>Alternanthera philoxeroides</i>	W1
Bathurst		
Noogoora		
Californian	<i>Xanthium spp.</i>	W3
Cockle burrs		
Black knapweed	<i>Centaurea nigra</i>	W1
Blackberry	<i>Rubus fruticosus (agg. spp.)</i>	W2
Blue heliotrope	<i>Heliotropium amplexicaule</i>	W2
Broomrape	<i>Orobancha spp.</i>	W1
Cabomba	<i>Cabomba spp.</i>	W4g
Columbus grass	<i>Sorghum x almum</i>	W2
Dodder	<i>Cuscuta campestris</i>	W2
Galvanized burr	<i>Sclerolaena birchii</i>	W3
Green cestrum	<i>Cestrum parqui</i>	W2
Harrisia cactus	<i>Harrisia spp.</i>	W4f
Hawkweed	<i>Hieracium spp.</i>	W1

Horsetail	<i>Equisetum spp.</i>	W1
Johnson grass	<i>Sorghum halepense</i>	W2
Karoo thorn	<i>Acacia karroo</i>	W1
Kochia	<i>Kochia scoparia</i>	W1
Lagarosiphon	<i>Lagarosiphon major</i>	W1
Mesquite	<i>Prosopis spp.</i>	W1
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1
Miconia	<i>Miconia spp.</i>	W1
Mintweed	<i>Salvia reflexa</i>	W3
Nodding thistle	<i>Carduus nutans</i>	W2
Pampas grass	<i>Cortaderia spp.</i>	W2
Parthenium weed	<i>Parthenium hysterophorus</i>	W1
Prickly acacia	<i>Acacia nilotica</i>	W1
Prickly pears	<i>Opuntia spp.</i>	W4f
Rhus tree	<i>Toxicodendron succedaneum</i>	W2
Salvinia	<i>Salvinia molesta</i>	W1
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1
Serrated tussock	<i>Nassella trichotoma</i>	W2
Siam weed	<i>Chromolaena odorata</i>	W1
Silk forage sorghum	<i>Sorghum spp. hybrid cv.</i>	W2
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>	W2
Spiny burrgrass	<i>Cenchrus incertus</i>	W3
Spiny burrgrass	<i>Cenchrus longispinus</i>	W3
Spotted knapweed	<i>Centaurea maculosa</i>	W1
St John's wort	<i>Hypericum perforatum</i>	W2
Sweet briar	<i>Rosa rubiginosa</i>	W3
Water hyacinth	<i>Eichhornia crassipes</i>	W1
Water lettuce	<i>Pistia stratiotes</i>	W1
Willows	<i>Salix spp.</i>	W4g

### **Noxious weed categories**

<b>Category</b>	<b>Description</b>
W1	The presence of the weed on land must be notified to the local control authority and the weed must be fully and continuously suppressed and destroyed.
W2	The weed must be fully and continuously suppressed and destroyed.
W3	The weed must be prevented from spreading and its numbers and distribution reduced.
W4a	The weed must not be sold, propagated or knowingly distributed and any part of the weed must be prevented from growing within 3 metres of the boundary of a property.
W4b	The weed must not be sold, propagated or knowingly distributed and any existing weed must be prevented from flowering and fruiting.
W4c	The weed must not be sold, propagated or knowingly distributed and the weed must be prevented from spreading to an adjoining property.
W4d	The weed: (a) must not be sold, propagated or knowingly distributed; and (b) must be fully and continuously suppressed and destroyed unless it is: · listed on the state heritage register under the Heritage Act 1977; listed for preservation or protection as a heritage item under an Environmental Planning Instrument under the Environmental Planning and Assessment Act 1979; · listed for preservation or protection in a tree preservation order of the council for the Local Government area; · included for preservation or protection in a Plan of Management for a local

government area under section 40 of the Local Government Act 1993; or · included for preservation or protection in a noxious weed policy or a noxious weed control program approved by the local control authority for the area for which it is the local control authority.

- W4e The weed must be fully and continuously suppressed and destroyed. All reasonable precautions must be taken to ensure produce, soil, livestock, equipment and vehicles are free of the weed before sale or movement from an infested area of the property.
- W4f The weed must not be sold, propagated or knowingly distributed. Any biological control or other control program directed by the local control authority must be implemented.
- W4g The weed must not be sold, propagated or knowingly distributed.

## APPENDIX 4 Fox management application based on the WCMA funding incentive program



### *Western CMA 2005 Incentives Program*

# Project Proposal Form & Guidelines

## *Who Can Apply?*

For individuals, groups and organisations to **implement on-ground works or undertake training** to address the **Management Targets** of the Western Catchment Management Authority

## **Contact:**

**Enquiries regarding the incentives program or seeking assistance in submitting a project proposal please use the following contacts (highly recommended).**

Location	Contact
Broken Hill	(08) 80 878 400
Bourke	(02) 68 722 144
Cobar	(02) 68 361 575
Walgett	(02) 68 281 272
Website	<a href="http://www.western.cma.nsw.gov.au">www.western.cma.nsw.gov.au</a>

## **Send Applications to:**

### ***Fax:***

(02) 68 362 988

### ***Post:***

WCMA 2005 Incentives Program  
PO Box 307  
Cobar NSW 2835

### ***Email:***

[western@cma.nsw.gov.au](mailto:western@cma.nsw.gov.au)  
(signed hard copy must be sent in post in addition to email)

## **Closing Date:**

**Applications must be received at the above address by 5.00pm on: Friday, 2<sup>nd</sup> of September 2005**

*In Partnership with:*



**NSW  
Sustainability  
Fund**



**Important: before filling out the application form it is highly recommended that you read the attached guidelines and seek assistance where required.**  
**WCMA 2005 Incentives Program Project Proposal**

**Name of Individual or Group:** Cobar Rural Lands Protection Board representing the Bourke, Brewarrina, Cobar, Hillston, Wanaaring and Wilcannia RLPB's, and the Cobar Area National Parks and Wildlife Service

**Property Name/s:**

**Property/Group Location:** The Central and Upper Darling region of Western NSW

**Location of activity:** Across the six (6) Rural Lands Protection Board districts of Bourke, Brewarrina, Cobar, Hillston, Wanaaring and Wilcannia.

### 1. Contact Details

Contact name for project: Robert Neate  
 Contact phone number: (02) 6836 2081  
 Mobile phone: 0428 362 397  
 Contact fax number: (02) 6836 1419  
 Email: robert.neate@rlpb.org.au  
 Postal Address: Cobar Rural Lands Protection Board PO Box 52 COBAR NSW 2835

### 2. Business/Group details

Business/Group name: Cobar Rural Lands Protection Board – ABN 96 743 545 653  
 Brewarrina Rural Lands Protection Board – ABN 22 248 509 489  
 Bourke Rural Lands Protection Board – ABN 11 924 653 409  
 Hillston Rural Lands Protection Board – ABN 75 738 054 817  
 Wanaaring Rural Lands Protection Board – ABN 25 462 364 062  
 Wilcannia Rural Lands Protection Board – ABN 33 710 418 924  
 ABN registered  ABN number (if ticked yes) As above  
 GST registered  (Please ensure business name matches ABN)

### 3. Planning

Does the proposed site/s have a current Property/Business Management Plan in place?

Yes   
 No

*If yes, please explain how the proposed project links into the current Property Management plan.*

This project was developed through a consultative workshop process called PESTPLAN that involved key private and government landholders and managers in the District (See attached report of the Cobar Pest Animal and Weeds Workshop).

The project intrinsically links with and builds on each of the six Rural Lands Protection Boards (Cobar, Brewarrina, Wanaaring, Wilcannia, Hillston and Bourke) Pest Management Plans, as well as the well recognised and established NPWS projects at Yathong and Tilpilly Nature Reserves. The project extends across RLPB district borders and applies nil tenure principles

recognising that a pest needs to be managed across regions, rather than just on individual sites.

Further consultation took place with the Broken Hill, Milparinka, and Walgett Rural Lands Protections Boards in late August 2005. These three Boards are committed to fox and feral pig management and control within their respective districts. Continued consultation will take place with these Boards in the later part of 2005 regarding their involvement (or not) with the project in 2006.

While current fox and feral pig control programs are traditionally grouped across the region, the project aims to link up groups for a truly coordinated regional effort in pest management and control.

The project also addresses the catchment management priorities of the Western Catchment Management Blueprint (High Priority – 7) (Department of Land and Water Conservation, 2003).

#### 4. Project Description

**Project title:** Western Catchment Fox and Feral Pig Management Program

The project area encompasses six Rural Lands Protection Board Districts (Bourke, Brewarrina, Cobar, Hillston, Wanaaring and Wilcannia) spanning in excess of 17.3 million hectares of the Western Catchment. There are approximately 950 rateable landholders across the six districts, including crown land managers such as the National Parks and Wildlife Service.

Ross McLeod recently carried out a review on the economic, environmental and social impact (triple bottom line) of 11 major introduced vertebrate pests of Australian agriculture, industries and environment. While the cost impact assessment totalled \$720 million per year, foxes, feral pigs, rabbits and feral cats were estimated to account for 83% of losses. Agricultural productivity loss accounts for approximately half of the total costs estimated (R. McLeod 2004).

As pest species, foxes and feral pigs combined account for \$334 million annually to triple bottom line impacts in Australia.

*Please provide a detailed description of the proposed project and the methods used to conduct on-ground works. (Attach extra paper if necessary)*

**What Natural Resource Management issues are you addressing with this project?**

- No increase in impacts of pest animals above current levels.
- Foxes are common throughout the district. They prey on endangered and threatened wildlife, including the Kultarr (*Antechinomys laniger*), Australian bustard (*Ardeotis australis*) and Malleefowl (*Leipoa ocellate*).
- It is well documented that foxes predate on lambs and goat kids.
- Feral pig distribution across the project area is common and can:
  - Largely impact on lamb marking percentages due to predation,
  - Compete with livestock for water and feed,
  - Place emotional stress on landholder in times of drought and hand

- feeding,
  - Impacts costing producers tens of thousands of dollars annually in lost agricultural production,
  - Damage fences,
  - Fowl dams, ground tanks, creeks and bore drains,
  - Spread woody weeds and other noxious and seasonal weeds,
  - Be potential vectors for exotic disease host and transmission,
  - Be vectors of zoonotic diseases such as Q Fever, Leptospirosis etc.,
  - Cause erosion and soil/land degradation and disturbance of fragile ecosystems,
  - Cause significant environmental and agricultural effects to swamp and wetland areas, as well as adjacent lands during normal seasons,
  - Have large litters,
  - Breed all year round; and
  - Have low mortality rate amongst juveniles.
- The project also aims to increase the populations of native wildlife on the privately managed land in the district to complement the work being done to protect native species on and around Yathong and Tilpilly nature reserves.
- Also it will contribute to the sustainability of agriculture in the district by reducing the predation of foxes and feral pigs on lambs. The aim is to increase lamb marking percentage by 15% on properties not previously carried out control on foxes or feral pigs.
- Several other groups wish to undertake coordinated fox and feral pig management in the Western Catchment. This project will be written up in detail as a demonstration project that can be used by others to help them establish their local projects.
- The project will also increase the capacity of landholders in the district to address other sustainable land management issues, not the least through the establishment of a cooperative network of private and government land managers.

**Detail the methods used in implementing the project and why? (e.g. type of fencing)**

- An informal group of Board staff and Directors from the Boards involved have come together to establish the basis of the funding application. Once funding has been granted by the Western Catchment Management Authority, a project steering committee will be established to manage the project. The committee proposes to involve representatives of the Bourke, Brewarrina, Cobar, Hillston, Wanaaring and Wilcannia RLPBS and NSW NPWS.
- Coordination of the project will be driven by staff of the local Boards and NPWS (project implementation team), however under the day-to-day supervision (for travel claims etc) of the respective employer. Strategic management will be through the Steering Committee. The duties of the project implementation team will include:
  - establish and coordinate the program
  - plan and expand the program
  - develop and implement communication plan
  - prepare and source education materials and or opportunities

- develop and implement monitoring program which includes analysis of data and preparing a comprehensive report
  - community and agency liaison, consultation.
- Gaps where there is no or insufficient baiting in the current programs will be identified and incorporated them into the program over time. Expansion of the program from the current base will be staged over the term of the project.
- Foxes in the District have defended territories of approximately 7 - 10 square kilometres. To prevent rapid reinvasion of foxes from surrounding areas, a buffer zone of two to three fox territories wide or approximately 7 kilometres around the area that is to be protected (e.g. the lambing paddock or the distribution of a threatened animal) will also be treated. About the only efficient way of achieving this is for a group of landholders to coordinate baiting between government and private land managers. Otherwise, sub-adult foxes will move into a vacant territory (where the adult has been poisoned) within a few days.
- For fox control, the most effective technique is 1080 impregnated baits laid prior to lambing. Baits will be laid at approximately one per 500 metres. The position of the bait will be marked and checked at least every 3 days to see if it has been taken. Taken baits will be replaced.
- It is anticipated that there will be a variety of fox bait types used as part of this program, including the use of manufactured 'Foxoff' baits. The rationale for the inclusion of Foxoff baits as opposed to only using fresh meat baits include:
  - Foxoff Baits are 'pre-packaged' and ready to go. They have a storage life (require no refrigeration etc) and are easy to distribute/handle. The initial cost will also be reduced for the purchase of a bulk lot.
  - While the initial outlay appears more expensive this is not necessarily the case. When you look at meat baits there are many things to consider. Firstly the labour component required to get the bait ready for distribution includes; obtaining the meat, cutting them into the legal size and manually injecting 1080 poison into each individual bait. Added expense includes the supply of liquid 1080 poison and plastic storage bags.
  - The next major concern (especially in the warmer western area climate) is the life of the bait. Meat baits will need to be stored (fridge etc) and there will need to be an investment in infrastructure to store, particularly when catering for large group baiting programs.
  - The next major concern is the handing out, distribution and laying of the meat bait. As they have a short shelf life once injected and bagged (possibly 1 day before going off) there is the problem of getting them out and laid on trails before they putrefy.
- For feral pig control, integrated measures of baiting, trapping and shooting (by ground and air) are the preferred across the region. The aim of such large projects is to utilise Integrated Pest Management (IPM)

practises. The CMA should consider the use of aerial shooting for the following reasons.

- Like all pest projects there is a need to involve a variety of control methods to achieve the most effective results. With feral pigs, there is always a proportion of the population that will not be controlled by the use of one or two control methods. There will always be feral pigs that are bait shy or trap shy. There are also pigs that will be in areas difficult to access or feral pigs simply missed by ground control. The use of aerial control, as an initial knock down control method, or as a follow up strategy is aimed at targeting those problem pests. If these residual pigs are not cleaned up it can jeopardise the effectiveness of the entire program.
- Aerial culling of feral pigs will only be carried out after consultation with participating Boards and the CMA, and only if aerial culling is required
- While low feral pig populations are scattered across the six Board districts, particularly along the Darling River and Cuttaburra basin areas receive regular influxes of feral pigs due to habitat and foraging preferences of the pest.
- In production areas, landholders will further reduce the chance of fox and feral pig predation through neighbours joining their sheep as far as is practicable at the same time so that foxes and feral pigs are swamped by potential prey (it is understood however that this practice is not always achievable).
- Where they adjoin, landholders will coordinate with fox and feral pig control conducted on NPWS land. Fox and feral pig control in these parks is usually conducted three times a year.
- Project participants will be kept informed on progress of the program through the RLPB newsletters, field days and via local print and radio media.

**How would you ensure the long term success of the proposed project? (Follow up methods and/or change of management).**

- The project has been developed locally through a consultative process. It will also be owned and managed by local land holders, the RLPBs and government agencies involved. Also there will be extensive input of the time and other resources of the local land holders. Hence there will be significant local commitment to its success. The long-term success of this approach has been demonstrated by projects based along similar lines such as the West Coast Integrated Pest Program on Eyre Peninsula in South Australia and the Goonoo Fox Project based near Dubbo, NSW.
- Group commitment will be encouraged through reporting in the regular RLPB newsletters, regular media articles, workshops, local control group meetings and field days.
- Whilst this project is initially funded over three years, the continuing role of RLPB staff, landholders and other stakeholders will continue beyond 2008 as the Boards involved are wholly committed to the project. It is a core function of Rural Lands Boards to assist and implement programs relating to pest animal control and this will continue to be carried out. Boards have prepared Pest Animal Function Management Plans which

outline their future pest animal objectives. This program is linked into these Management Plans to ensure continued support. Pest animals are seen as a major threat to both agricultural production and the environment therefore, long after this funding expires the landholders and Board staff will be carrying out pest control on foxes and feral pigs for the benefit of the environment and themselves. This commitment will be highlighted and reinforced by the results produced by the landholders and land managers themselves through the surveys they complete over the continuing project.

**How will the results of the project be monitored and evaluated?  
(Photopoints minimum)**

- NSW NPWS have a comprehensive monitoring program for the fox control on NPWS land. The results are reported regularly to the NSW Fox Threat Abatement Team and the results are available through the annual NSW Department of Environment and Conservation reports. NPWS will also collect and analyse any data collected on native wildlife by local landholders although it is recognised that many landholders will be reluctant to report such information. To ensure a sample of such data is collected, 5 properties that are willing to cooperate will be provided with a data collection sheet on native wildlife which will be sent to and analysed by NPWS.
- For production monitoring, a range of monitoring tools will be used such as:
  - Landholder/manager pest surveys,
  - Engaging kangaroo trappers/shooters to provide on-ground visual assessments of pest activity and density,
  - Using RLPB Rangers to enhance reported on-ground visual assessments of pest activity and density
- the following information will be collected:
  - The reduction of fox and feral pig populations will be estimated through recording the reduction in bait take over a week period.
  - The success from fox and feral pig control, lamb producers, (including those that do not poison) will be encouraged to keep the following records and send them to the RLPB for collation and analysis:
    - Breed of sheep
    - Stocking rate
    - Weather conditions at lambing
    - Percentage lamb marking

The lamb marking success of a range of properties (those that poison and those that don't) will be compared as well as assessing the impact of breed and other factors such as weather. A summary of the information collected and results of analysis should be fed back to landholders regularly such as through the RLPB newsletters and local media.

- The success of the project will also be monitored by the interest shown at the field days, the willingness of landholders to join the project and the number of media articles on the project.

Each RLPB will be responsible for the sending out, receiving and collation of the

pest surveys to land holders and managers within their district. The six sets of data (six RLPB districts) will then be centrally collated with involvement by the Boards, NPWS, State Councils Pest Animal and Insect Manager (if required) and pest researchers Lynnette McLeod and Glen Saunders of the Vertebrate Pest Research Unit - NSW Department of Primary Industries (For technical and reporting advice).

## 5. Management Targets

Which of the following Management Targets does your project address? Then explain in detail how the project addresses the Management Target(s). Your project may address more than one Management Target. Please tick and complete relevant areas. (Please read Management Target descriptions in guidelines if unsure).

- Pest Management

No increase in the number of species or extent of pest weeds and animals above current levels. These are projects which are aimed at eliminating pests and weeds. Examples would be baiting programs, rabbit warren ripping, spraying of weeds etc.

- The project aims to reduce the damage to native wildlife and lamb producers by reducing the overall density of foxes and feral pigs in the district and maintaining them at the reduced density through an ongoing coordinated control program. Specifically the project aims to:
  - Increase the density of key native fauna including Kultarr, Plains Bustards and Malleefowl.
  - Increase lambing percentage by 15% on properties previously not baited for foxes or who have not carried out coordinated feral pig control.
  - The project will have broader benefits by providing a mechanism for developing and implementing programs to address weed and other pest management issues.

## 6. Standardised Outputs Table

Nominate the output you will deliver through your project. If your project does fit etc.

Pest Management	Project Output(s)
Area (ha) of pest plant control	
Area (ha) of pest animal control by type of pest animal (foxes)	8,000,000ha
Area (ha) of pest animal control by type of pest animal (feral pigs)	3,000,000ha

<b>Training/Community support</b>	
Number of non-training forums (e.g. demonstrations, field days, study tours, field trips etc.) and number of participants in person-days.	4-6 field days per year 150 participants
Number of non-training products or materials developed (e.g. brochures, newsletters, displays, etc.), and quantity distributed	Newsletters-6 distribution 1 each ratepayer (approx 1000) 7x media releases
Number of skills and training events (e.g. training sessions, workshops and seminars) held and number of participants in person-days.	Training etc 20 Participants 320
Number of key materials (e.g. workbooks, course notes etc) developed and quantity distributed	
Number of best management practice guidelines developed	
Number of PVPs and property management plans completed and implemented	
Number of decision support tools	
Number of community groups (e.g. Landcare) or community projects assisted	In excess of 10
<b>Monitoring</b>	
Number of sites monitored (e.g. water quality, piezometers, asset evaluations, vegetation, wetlands etc.).	Monitoring through landholder surveys – one per year (3 in total) 6 x photo sites set up and maintained

## 7. Project Map

1. Attach an A4 sized map showing the location of the property or properties where the proposed project is to be undertaken.
2. Attach another A4 sized site map for the proposed project, showing details listed as in the guidelines (e.g. specifications and /or measurements, proposed fencing, areas of degraded land).
3. Maps must be legible in black & white, do not use colour. Satellite or aerial photography images may be submitted in addition to the black and white A4 plan if desired.
4. Please include the following details:
  - Project location;
  - Paddock details including name and size;
  - Houses, fencelines and property roads;
  - Watering points including troughs, ground tanks and pipe lines;

- Major drainage lines and geographical features (e.g. hills);
- All the proposed ground works using the funding being sought;
- A legend clearly differentiating all the sections of the plan; and
- Distances and directions to the nearest towns and or shire roads.

It is recommended you develop your map, location map and site map in consultation with WCMA staff.

## 8. Project Timetable

Project Title	Activity	Proposed Completion Date
<b>2004</b>		
PESTPLAN	Coordinate consultative workshop involving key stakeholders to prioritise pests in the Bourke, Cobar, Hillston and Wilcannia RLP Districts of the Western Catchment Area	December 2004
<b>2005</b>		
Steering Committee	Informal steering committee establish the planning and funding process	February 2005
Funding Participants	Consultation with Wanaaring and Brewarrina RLPBs to increase Catchments involvement in the project	Late July 2005
Funding Participants	Discussions held with Broken Hill, Milparinka and Walgett RLPBs regarding future involvement in the fox and feral pig project	Late August 2005
Funding Submission	Apply to CMA for part funding of coordinated fox and feral pig control	2 September 2005
Media Release	Informal steering committee secure CMA support and funding to coordinate fox and feral pig control across 17.3 million ha across catchment	End October 2005
Participants Meeting	6 Boards, NPWS and CMA to meet in Cobar to formally establish the project management committee. Each Board involved may need to elect Board representative/s (Director and or Staff representative/s) to the committee to work through technical and operational aspects of the 3 year plan	Early November 2005
Coordinated feral pig control	Integrated feral pig control (aerial culling (only if required), trapping and baiting) implemented, incorporating education/training session for landholders and landholder survey for monitoring purposes	End November 2005

<b>2006</b>		
Newsletter produced	1 x newsletter produced and sent to landholders (update on project, outcomes of feral pig control, fox control to take place over March/April/May 2006). Newsletter to coincide with distribution of RLPB Rates Notice	End January 2006
Coordinated fox control	<ul style="list-style-type: none"> <li>• Media release – landholders about to embark on the largest coordinated fox control program in the Western Catchment</li> <li>• 2 x field days</li> <li>• Establish baiting groups (existing and new)</li> <li>• 1 x training session</li> <li>• Fox baits distributed (with survey form for monitoring)</li> </ul>	End May 2006
Newsletter produced	1 x newsletter produced and sent to landholders (update on project, outcomes of fox control, follow up fox control to take place over spring 2006, feral pig control planned for Oct/Nov 2006) – Survey also sent to landholders in an attempt to capture information from landholders who do not bait for foxes. Newsletter to coincide with distribution of RLPB Land and Stock Return	End June 2006
Coordinated fox control	<ul style="list-style-type: none"> <li>• 1 x training session</li> <li>• Fox baits distributed (with survey form for monitoring)</li> </ul>	End September 2006
Coordinated feral pig control	<ul style="list-style-type: none"> <li>• 1 x media release</li> <li>• 2 x education/training sessions for landholders</li> <li>• Integrated feral pig control (aerial culling (only if required), trapping and baiting) implemented with increased landholder participation.</li> <li>• landholder survey for monitoring purposes</li> <li>• 2 x field days</li> </ul>	End November 2006
CMA Report	Project committee to provide brief report and update to CMA on project and funding	Mid December 2006

<b>2007</b>		
Newsletter produced	1 x newsletter produced and sent to landholders (update on project, outcomes of feral pig control, fox control to take place over March/April/May 2007). Newsletter to coincide with distribution of RLPB Rates Notice	End January 2007
Coordinated fox control	<ul style="list-style-type: none"> <li>• Media release – landholders into 2<sup>nd</sup> year of the largest coordinated fox control program in the Western Catchment)</li> <li>• 2 x field day</li> <li>• Baiting groups expanded</li> <li>• 2 x training sessions</li> <li>• Fox baits distributed (with survey form for monitoring)</li> </ul>	End May 2007
Newsletter produced	1 x newsletter produced and sent to landholders (update on project, outcomes of fox control, follow up fox control to take place over spring 2007, feral pig control planned for Oct/Nov 2007) – Survey also sent to landholders in an attempt to capture information from landholders who do not bait for foxes. Newsletter to coincide with distribution of RLPB Land and Stock Return	End June 2007
Coordinated fox control	<ul style="list-style-type: none"> <li>• 2 x training sessions</li> <li>• Fox baits distributed (with survey form for monitoring)</li> </ul>	End September 2007
Coordinated feral pig control	<ul style="list-style-type: none"> <li>• 1 x media release</li> <li>• 1 x Field day</li> <li>• 2 x education/training session for landholders</li> <li>• Integrated feral pig control (aerial culling (only if required), trapping and baiting) implemented with increased landholder participation.</li> <li>• landholder survey for monitoring purposes</li> <li>• 2 x field days</li> </ul>	End November 2007
CMA Report	Project committee to provide brief report and update to CMA on project and funding	Mid December 2007

<b>2008</b>		
Newsletter produced	1 x newsletter produced and sent to landholders (update on project, outcomes of feral pig control, fox control to take place over March/April/May 2008). Newsletter to coincide with distribution of RLPB Rates Notice	End January 2008
Coordinated fox control	<ul style="list-style-type: none"> <li>• Media release – landholders into 3<sup>rd</sup> year of the largest coordinated fox control program in the Western Catchment</li> <li>• 2 x field days</li> <li>• Baiting groups expanded</li> <li>• 2 x training sessions</li> <li>• Fox baits distributed (with survey form for monitoring)</li> </ul>	End May 2008
Newsletter produced	1 x newsletter produced and sent to landholders (update on project, outcomes of fox control, follow up fox control to take place over spring 2008, feral pig control planned for Oct/Nov 2007) – Survey also sent to landholders in an attempt to capture information from landholders who do not bait for foxes. Newsletter to coincide with distribution of RLPB Land and Stock Return	End June 2008
Coordinated fox control	<ul style="list-style-type: none"> <li>• 2 x training sessions</li> <li>• Fox baits distributed (with survey form for monitoring)</li> </ul>	End September 2008
Coordinated feral pig control	<ul style="list-style-type: none"> <li>• Integrated feral pig control (aerial culling (only if required), trapping and baiting) implemented with increased landholder participation.</li> <li>• 2 x field days</li> </ul>	November 2007
CMA Report	Project committee to provide final report to CMA on project and funding	End November 2008
Media Release	Project Committee to outline successes of funded project supported by CMA and what will continue into the future	Mid December 2008
2009-2015	Participant Boards meet to review operational plan and future directions of fox and feral pig management in Western Catchment	January 2009

## 9. Project Budget – Year 1

Activity to be undertaken	Item	Cost per Item	Applicants (In-kind)	WCMA (Must Be GST Free)	Total cost
Administrative Costs			15,200	10,500	25,700
Fox Control			26,754.50	101,370	128,124.50
Feral Pig Control			11,680.50	45,980	57,660.50
Distribution			228,052	1,000	229,052
Field Days and Training Sessions			21,595	10,750	32,345
Monitoring			16,810	5,650	22,460
Media and Newsletter			98,950	2,750	11,700
			<b>Total</b>	<b>178,000</b>	<b>507,042</b>

Total cost divided by 3	169,014
Applicant contribution greater (If no, cost sharing is too low)	Yes

Due to the seasonality of fox and feral pig control and management, the group would ask the Western CMA for funds not expended in the year of operation be carried over to the following year.

## Project Budget – Year 2

Activity to be undertaken	Item	Cost per Item	Applicants (In-kind)	WCMA (Must Be GST Free)	Total cost
Administrative Costs			15,700	9,500	25,200
Fox Control			42,787.40	115,817.50	158,604.90
Feral Pig Control			23,308.60	67,032.50	90,341.10
Distribution			367,391	1,000	368,391
Field Days and Training Sessions			21,595	10,750	32,345
Monitoring			18,150	6,150	24,300
Media and Newsletter			8,950	2,750	11,700
			<b>Total</b>	<b>213,000</b>	<b>710,882</b>

Total cost divided by 3	236,960.67
Applicant contribution greater (If no, cost sharing is too low)	Yes

Due to the seasonality of fox and feral pig control and management, the group would ask the Western CMA for funds not expended in the year of operation be carried over to the following year.

### Project Budget – Year 3

Activity to be undertaken	Item	Cost per Item	Applicants (In-kind)	WCMA (Must Be GST Free)	Total cost
Administrative Costs			15,200	9,100	24,300
Fox Control			54,776.80	131,272.50	186,049.30
Feral Pig Control			31,093.20	76,877.50	107,970.70
Distribution			448,104	1,000	449,104
Field Days and Training Sessions			22,095	11,2750	33,345
Monitoring			20,810	7,250	28,060
Media and Newsletter			8,950	2,750	11,700
Total			601,029	239,500	840,529

Total cost divided by 3	280,176.33
Applicant contribution greater (If no, cost sharing is too low)	Yes

## **APPLICATION DECLARATION**

I, Mr Wayne Leigh Chairman of the Cobar Rural Lands Protection Board and

I Mr Stuart LeLievre Chairman of the Bourke Rural Lands Protection Board and

I Mr Ian Kemp Chairman of the Hillston Rural Lands Protection Board and

I Mr Brain Thomas Chairman of the Wilcannia Rural Lands Protection Board and

I Mr Matthew Slack-Smith Chairman of the Brewarrina Rural Lands Protection Board and

I Mrs Joan Myers Chairman of the Wanaaring Rural Lands Protection Board and

I Mr Warren Mayers Area Manager for the Upper Darling Region – NPWS

declare:

That the information provided by the above parties in this application is complete and correct. We have read and understand the guidelines concerning this application.

Is this declaration being signed on behalf of a group?

YES   
NO

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mr Wayne Leigh)

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mr Stuart LeLievre)

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mr Ian Kemp)

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mr Brain Thomas)

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mr Matthew Slack-Smith)

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mrs Joan Myors)

Signed: \_\_\_\_\_  
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(Mr Warren Mayers)

## References

McLeod, R. 2004. Counting the Cost: Impact of Invasive Animals in Australia, 2004. Cooperative Research Centre for Pest Animal Control. Canberra.

Department of Land and Water Conservation. 2003. Western Catchment Blueprint. Department of Land and Water Conservation. Sydney