

Assisting koala conservation through wild dog control

Response to Question on notice from Senator Cameron, submitted by

Greg Mifsud, National Wild Dog Facilitator Invasive Animals Cooperative Research Centre.

13 July 2011

Summary

At the hearing into the Status, Health and Sustainability of Australia's Koala population conducted in Canberra on 19 May 2011, Senator Cameron requested information on the cost and timeframe for a research project to investigate the impacts of wild dogs on koalas in south west and south east Queensland. Several studies conducted across Eastern Australia have already identified that the impacts of wild dog predation on koala populations has the potential to cause local extinctions within fragmented landscapes and to prevent populations from re-establishing and reaching natural densities following catastrophes such as fire and drought.

Here we propose a two stage approach to investigate and mitigate the impacts of wild dogs, primarily dingo hybrids and feral or roaming domestic dogs, on at risk populations of koalas in eastern Australia.

Stage1: Conduct mapping exercise to overlay the current extent of koala habitat from the Australian Koala Foundation's Koala Habitat Atlas and relevant state GIS resources with information on wild dog distribution and activity across Eastern Australia. Information on wild dog activity is recorded by the relevant authorities, including local governments, in each state and could be compiled relatively quickly. This mapping exercise will provide the basis for prioritization of areas requiring immediate management of wild dogs in addition to factors such as to the conservation status of remaining koala populations, such as habitat quality, extent of habitat degradation, koala hospital data and the capacity for koala population recovery given the prevalence of other threatening processes.

Stage 2: Implement intensive wild dog control in the priority areas identified in Stage 1. Several locations from southeast Queensland and northern NSW already have wild dog management programs in place as a result of attacks on livestock and pet animals. For example, Gold Coast City Council implemented intensive wild dog monitoring and control programs for two hinterland bush land areas in direct response to recent alarming evidence of significant koala predation. Funds identified in this proposal are being sought to supplement existing wild dog management programs across eastern Australia in order to protect at risk populations of koalas. Success in these areas will provide a spur to local governments and conservation agencies elsewhere to target the control of wild dogs for koala conservation.

The approach proposed here would yield immediate benefits for koala conservation; it doesn't require any further state or federal policy development, and will not impact on commercial development or town planning for urban areas. Collaboration with the Australian Koala Foundation and researchers from within government departments and tertiary institutions involved in koala management will be essential to monitor populations in relation to any wild dog control program implemented as a result of this proposal. Additionally, the control of wild dogs will be supported by rural stakeholders as it will yield benefits for primary production, as well as for conservation of koalas and biodiversity.

The initial proposal would aim at priority areas in southeast Queensland and northern NSW, but may be rolled-out across other priority areas for koala conservation in Queensland, NSW and Victoria if identified.

Project detail and budget

Stage 1 – Mapping wild dog and koala distribution and to prioritise areas for intensive wild dog management

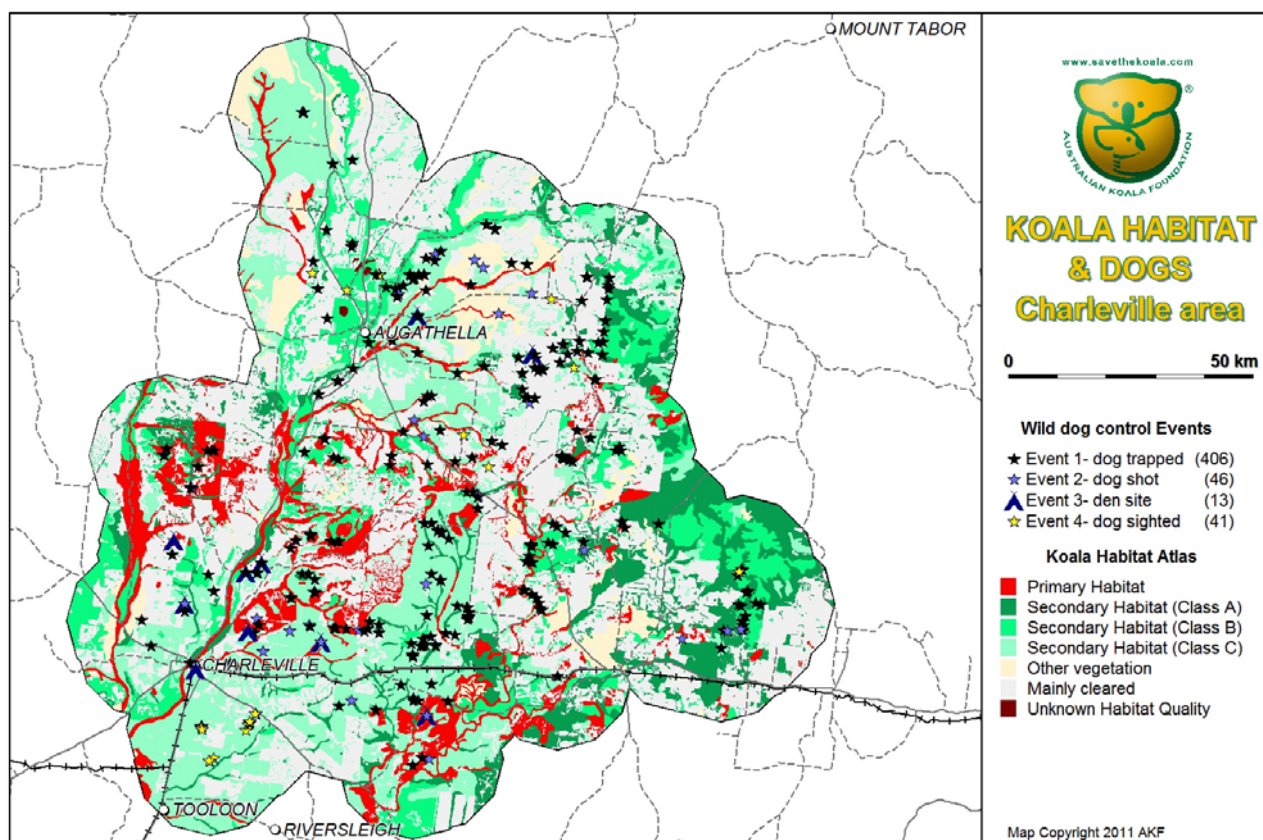
Mapping is needed to identify areas where koala conservation is compromised by wild dogs. Habitat mapping information is available from a range of state and federal sources and will be used in addition to the Australian Koala Foundations detailed habitat atlas mapping. However this mapping isn't extensive and coverage of areas heavily impacted by wild dogs is still lacking, particularly in northern NSW. Funds to carry out additional habitat atlas mapping in this area may be required to clearly identify areas of Koalas prevalence in order to better target wild dog management. The Australian Koala Foundation has identified the need for more detailed habitat mapping across the entire range of the Koala and while the information delivered here will inform that process it is not the intent of this proposal.

Very large scale (50km² map grids) data on wild dog distribution already exists, but more detailed local information will be required to identify areas where koala populations are being affected. The National Wild Dog Management Advisory Group members and Invasive Animals CRC already hold some of this information and will provide linkages to state and local authorities to collect and collate information on wild dog distribution and activity at a finer scale.

Stage 1 - Indicative budget.

Item	Cost
GIS Staff /Consultant Salaries	\$50,000
Travel	\$3,000
Materials, Printing and Consumables	\$2,000
Total	\$55,000

Figure 1. – Example of the type of mapping that will be developed in stage 1 to identify areas of wild dog activity and in relation to Koala habitat.



Stage 3 – Intensive wild dog control in priority areas

- Control options for wild dogs in these priority areas will vary depending on the landscape and government regulations.
- There are a greater number of control options available to manage wild dogs in rural areas due to larger property sizes providing less risk which is reflected by the less restrictive government regulations.
- Baiting with 1080 poison aimed specifically at wild dogs is the most target specific and environmentally sensitive means of broad scale control in these areas.
- Professional wild dog controllers skilled in the use of soft jaw, foothold traps to capture wild dogs are also commonly employed in these areas to capture specific problem dogs that have become bait averse and are causing significant problems for livestock producers.
- Professional wild dog controllers are frequently used by conservation agencies to manage wild dogs and foxes on protected areas.
- Regulations governing the use of 1080 in semi or peri urban areas (fragmented koala habitat) often make it impossible to conduct baiting programs. Federal and State requirements for producers and local government to secure signatures for all residents within 2 km of where baits are to be laid often make baiting prohibitive.
- As a consequence, local governments and statutory bodies employ staff or contractors to control wild dogs using soft jaw traps where baiting is unviable.
- **Wild dog management in urban areas will be expensive due to the reliance on intensive wild dog trapping programmes requiring full time professional wild dog controllers. However these intensive programmes will be essential in fragmented landscapes where koala populations are experiencing a range of threats in addition to those posed by wild dogs in peri urban environments.**

Additional benefits of intensive wild dog management for Koala conservation:

There would also be significant biodiversity benefits to other native species if wild dogs are managed intensively in areas occupied by Koalas:

- Species identified in Table 1 and 2 (see background section below) such as the spotted tailed quoll, southern brown bandicoot, long footed potoroo and smoky mouse all share habitats with the Koala.
- The major non target species controlled during wild dog programmes are foxes and feral cats;
- Foxes and cats impact on a far greater range of native species than wild dogs so their removal would also have significant biodiversity benefits.

Livestock producers in rural areas would also support any efforts to intensify wild dog management to protect Koala populations, not just from a production point of view but due to very real concerns for koalas and other native species.

- Introduced predators such as wild dogs (*Canis lupis*) and the European Red Fox (*Vulpes vulpes*) are both considered serious agricultural pests causing significant economic damage to Australia's grazing industry.
- Conservative estimates of the impacts of the wild dogs and foxes on agriculture nationally were found to be \$48.5 million and \$22.5 million dollars in a recent report commissioned by the IA CRC (Gong *et al* 2009).
- Agforce Queensland found the economic cost of wild dogs on the Queensland grazing industry in 2009 to be approximately \$67 million dollars a year in that state alone (Hewitt 2009).

- Producers around the country also site declines in native fauna as one of the major impacts of wild dog predation with many providing anecdotal evidence of Koalas no longer being present on the property when they were once seen regularly.

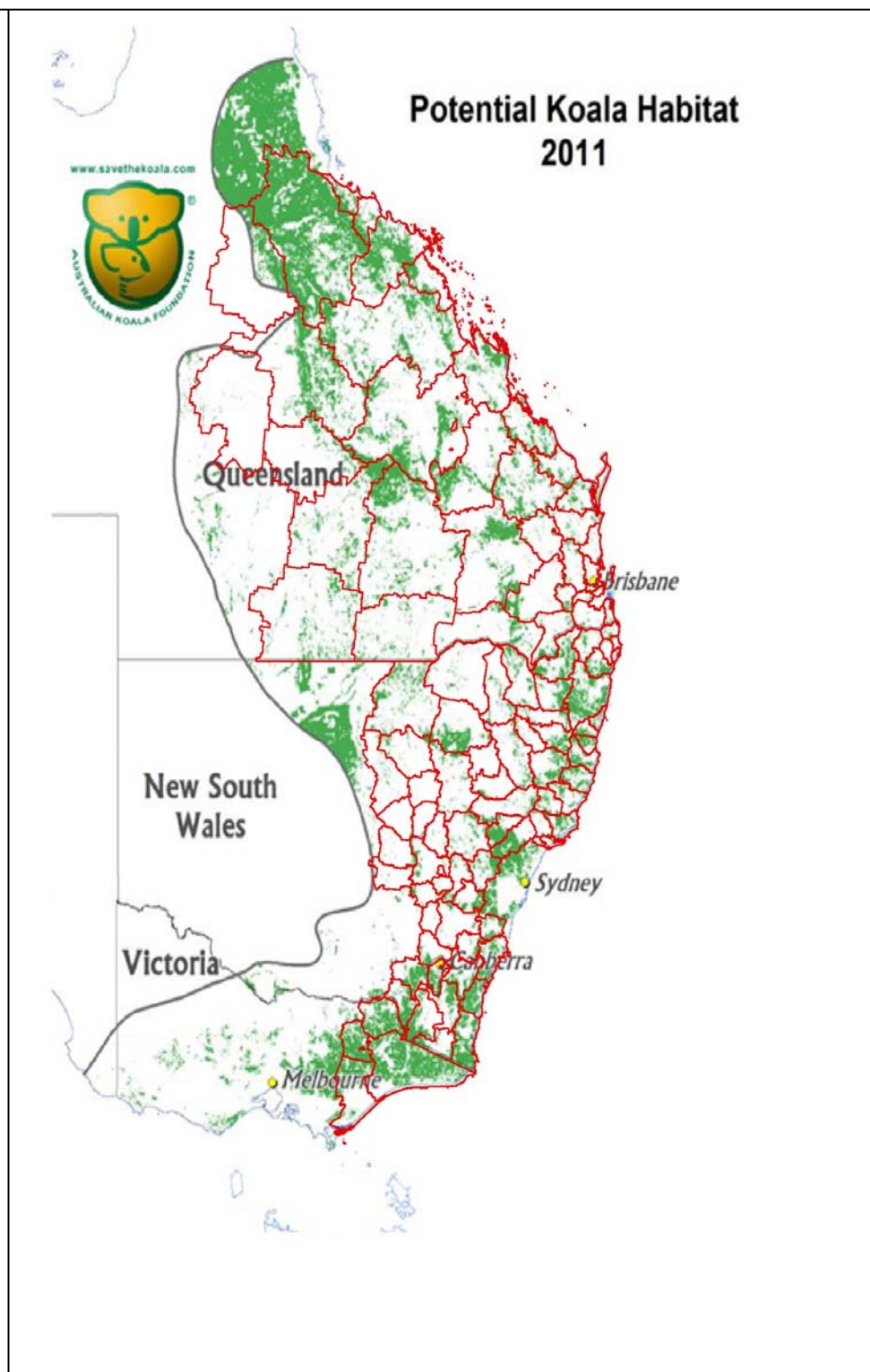
Stage 2: Indicative budget

- A total of 107 Local government areas affected by wild dogs exist over the remaining potential Koala habitat in eastern Australia as mapped by the Australian Koala Foundation, (Figure 2).
- Each of these 107 local government areas would significantly benefit from the employment of a professional wild dog controller; however additional resources may be required to manage wild dogs in fragmented semi urban landscapes.
- A single wild dog controller will cost around \$120,000 (Table 2). Stage 1 of the project will identify where these are to be employed.
- **A budget of \$12.8 million dollars would be required each year to employ a single wild dog controller in each of the 107 local government areas identified in Figure 2.**
- The mapping process discussed in Stage 1 however will prioritise areas for investment in order to achieve cost-effective Koala conservation outcomes.
- The cost of delivering an effective wild dog management programme in these priority areas will ultimately be determined by the landscape (regional vs. urban) and regulations governing the type of wild dog control program that can be implemented.
- \$12.84 million in wild dog control to protect Koala populations is relatively cost effective when the estimate the value of the Koala to the Australian economy via tourism is \$1.2 billion and approximately 9,000 jobs in 1996 (Hundloe and Hamilton 1997).
- Similarly given that wild dogs conservatively cost the Australian agricultural industry \$48 million dollars the investment of \$12.8 million into wild dog management would generate significant financial gains through increased production from the grazing industry in eastern Australia and a major benefit to rural communities (Gong *et al.* 2009)
- Funding this programme may negate the need for the Federal Government to invest in separate control programmes for introduced predators for those endangered native species which habitat with Koalas, that identify predator control as a recovery action under there respective threat abatement plans.
- **Any investment in wild dog management however would need to be managed by the appropriate regulatory authority and be part of a broader coordinated community wild dog and fox management plan or local government pest management plan involving all stakeholders.**
- Management plans developed through this process would utilise current national best practice to deliver an integrated and coordinated wild dog and fox management programme.
- In regional areas where there is greater emphasis on coordinated baiting programmes investment may be required for operational items such as aerial baiting costs, meat and labour.

Table 2 - Indicative budget for a single permanent wild dog controller within local government in Queensland. Cost would be similar in other states but may vary depending on awards for permanent staff or the use of contractors.

Item	Cost
Level 3 Officer, QLD local government award plus on costs	\$60,000
Vehicle	\$40,000
Vehicle running costs and maintenance	\$15,000
Equipment, Materials, and Consumables	\$5,000
Total	\$120,000

Figure 2. – Local government areas (in red) within eastern Australia where wild dogs have been identified as a major issue for production, public health and biodiversity, in relation to remaining Potential Koala Habitat 2011.



Locations for immediate implementation of intensive wild dog control to mitigate the impacts on already declining and stressed koala populations

Immediate intensive management of wild dog populations could be implemented at a number of locations within SEQ and northern NSW to mitigate the impacts on already stressed populations of Koalas.

Opportunities for immediate action within south east Queensland

- Koala populations in southeast Queensland have suffered extensive declines due to habitat fragmentation, infrastructure development and land clearing. Declines in some areas such as the Pine Rivers area north of Brisbane have been associated with increases in wild dog numbers and a shift in their distribution into fragmented habitats surrounding urban developments where koala populations now occur.
- Community Koala survey programmes conducted by Moreton Bay Regional Council's Environment Section indicate major declines in Koala observations in these same areas where wild dog attacks and reports have increased.
- Mortality of Koalas as a result of wild dog predation has been observed within two populations of Koalas being studied and radio tracked by researchers with Queensland Parks and Wildlife (DERM) and Griffith University.
- Moreton Bay Regional Council have an extensive wild dog management programme with three permanent staff involved in wild dog management and pest animal control in a range of landscapes from rural to semi urban and extremely urbanised environments.
- Koala numbers have declined most dramatically in the more urbanised areas of the shires where the only option for wild dog management will be intensive trapping programmes for reasons discussed earlier.
- Senior staff from the Moreton Bay Regional Council advise, that wild dog numbers could be brought under control within the shire with the addition of three professional wild dog controllers for at least three years at a cost of \$1.08 million (refer to Table 3).
- Monitoring of koala populations in response to intensive wild dog management will be done through existing koala management projects undertaken by DERM, Griffith University, the University of Queensland and Moreton Bay Regional Council.

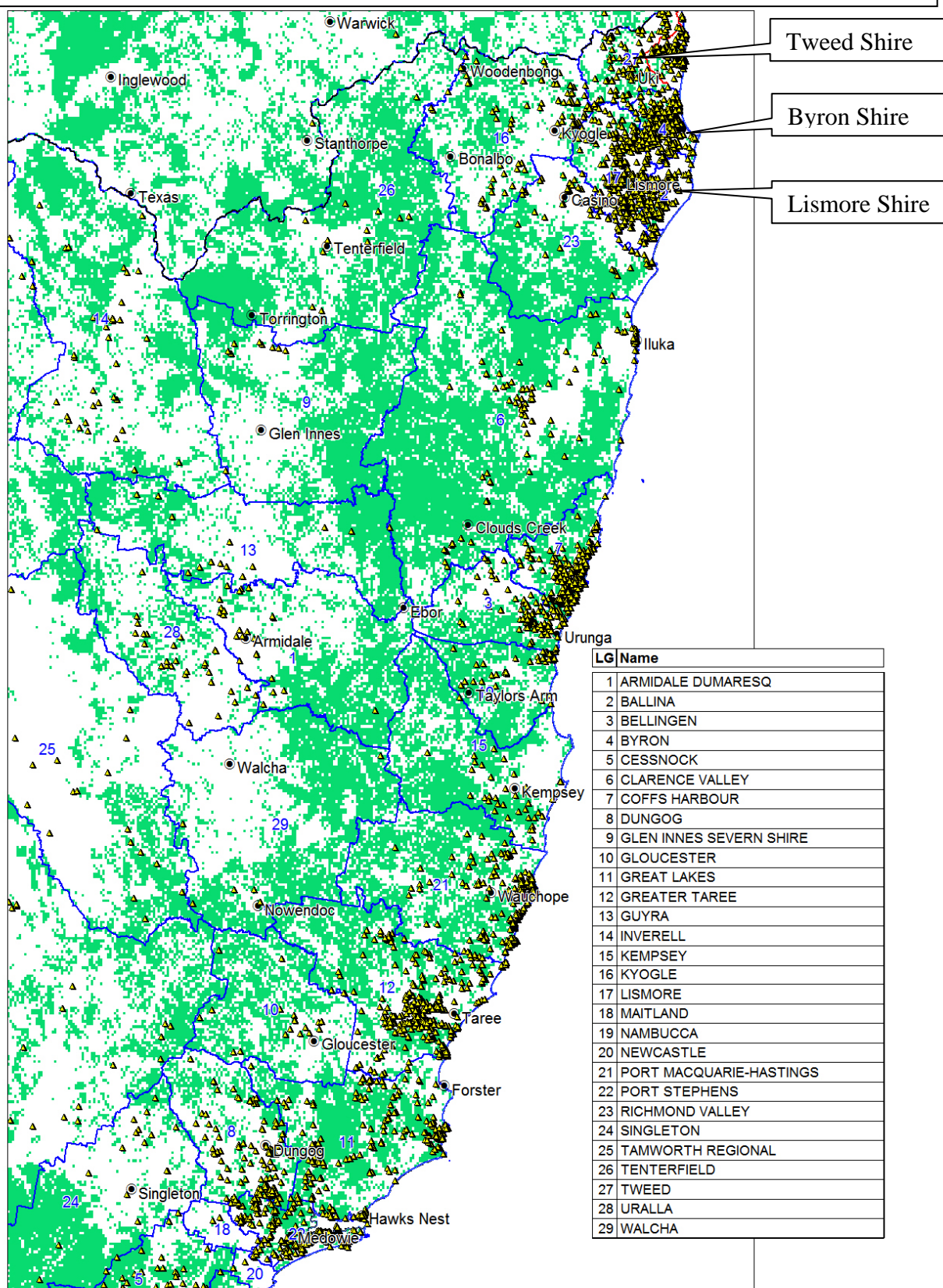
Table 3 - Indicative annual budget for three wild dog controllers with Moreton Bay Regional Council.

Item	Cost
Level 3 Officer, QLD local government award	\$180,000
Vehicle	\$120,000
Vehicle running costs and maintenance	\$45,000
Equipment, Materials, and Consumables	\$15,000
Total Annual Budget	\$360,000
Budget Required for Three year programme	\$1,080,000

Opportunities for immediate action within Northern NSW

- Recent news reports from the North Coast of NSW and feedback I received from numerous concerned residents indicate that wild dog numbers are increasing throughout the region south of Tweed Shire Council as far south as Newcastle (see Attachment 2).
- However main areas of concern appear to be in the hinterland regions of Byron, Lismore Kempsey and Port Macquarie-Hastings. Wild dog numbers and attacks have escalated in these area with over a thousand calves killed in the Kempsey are in 2010 according to the local Livestock Health and Pest Authority figures (*pers comm.*).
- Port Macquarie-Hastings Shire has a number of action plans in place to mitigate the impacts of urban and infrastructure development on resident Koala populations but as in many places hasn't recognised the impacts of wild dogs on these populations in the same environments.
- This issue has been so great that residents in some areas have pooled there resources and employed a dogger of there own accord to manage wild dogs in the local area.
- Byron Shire has committed \$20,000 of its 2011-2012 budget, to wild dog management in response to the alarming number of wild dog attacks on livestock, pets, wildlife and threats to humans.
- Given the fragmented landscape and semi rural nature of this region it will take considerably more funds than those provided by Byron Shire to manage this issue in a coordinated and strategic fashion on a scale required to manage the problem.
- Australia Koala Foundation last surveyed koalas in the region in 2006 (figure 3) and the concern is that wild dogs could be impacting heavily on these populations given the alarming increase in wild dog attacks and abundance recorded by residents and the statutory authorities in the region.
- It is also interesting to note the limited number of koala observations from the local government areas of the New England despite extensive Koala habitat in the shires of Tenterfield, Glenn Innes-Severn, Guyra, Armidale and Walcha in Figure 3.
- These shires have had a history of wild dog problems in the region however they too have seen a marked increase in wild dog numbers and attacks on livestock resulting in the decimation of the sheep and wool growing industry in what was once considered premier sheep grazing country.
- I am about to embark on a project to critically review the current wild dog management plans in the Tenterfield region. This initiative is a collaborative effort between the Granite Borders Landcare Group, Tenterfield Livestock Health and Pest Authority, NSW National Parks and Wildlife Service and members of the Tenterfield Wild Dog Management Association.
- The Tenterfield Wild Dog Association project has industry support from Australian Wool Innovation however significant investment in operational expenditure in the form of wild dog controllers and baiting in order to develop an effective programme to mitigate the impacts of wild dogs on livestock and biodiversity within the shire is required.
- Based on the figures provided in Table 3, provision of a wild dog controller in each of the northern NSW local government areas identified here for a period of three years under a coordinated community wild dog and fox management programme would cost approximately \$1.44 million.

Figure 3. – Koala Survey records for Local Government Authorities in Northern NSW from 2006.
These shires are also experiencing significant increases in wild dog abundance and attacks.



**NSW North Coast LGAs
with 2006 Koala survey records**

Attachment 1

Background to Question on Notice

The biggest single threat facing koalas is habitat loss throughout the species' entire geographic range. Fragmentation of remaining habitat exposes koalas to increased predation risks as they cross open areas between habitat patches and isolated trees. Wild dog abundance and distribution is on the increase, with greater reliance on remaining habitat patches for refuge, exacerbating the risk of koala predation. Wild dogs may also affect koala population viability by severely reducing the survival rates of offspring and the ability of sub-adults to safely disperse between habitat areas.

Wild dog distribution and activity has been increasing across eastern Australia at an alarming rate over the last 10-15 years. Regions that were once strong sheep meat and wool growing districts can no longer support the industry due to the impacts of wild dog on small stock. These same producers are now suffering the impacts of wild dogs on calves since moving out of the sheep industry. The increase in wild dog activity also appears to correlate with reduced koala populations in many of these areas, with wild dogs also potentially implicated in limiting the re-establishment of koala populations. Modifications of habitat and increased prey availability have contributed to increases in canid populations in many environments across the country (Corbett 2001), with corresponding increased wild dog predation pressures.

Research undertaken in NSW and southeast Queensland (Eco Logical report 2006, Lunney *et al* 2007 and Rhodes *et al* 2011) has highlighted the contribution of wild dog predation to declines in koala populations and reduced re-colonization of suitable habitat by koalas following habitat disturbance and natural disasters such as fire. Attacks on koalas come from three types of dogs: backyard dogs attacking straying koalas, domestic dogs roaming in packs, and wild dogs. Unfortunately these categories are usually combined in the available statistics. Dog attacks appear to occur more frequently during the koala breeding season (i.e. spring and early summer) when koalas are more active and inclined to spend more time moving across open ground (DECC 2008). Notably, attacks by wild dogs are usually fatal and often unreported (DEC 2003) because carcasses are rarely found or are misdiagnosed as domestic dog attacks because residents in semi urban areas of eastern Australia are unaware that wild dogs exist within the region. Predation by wild dogs has been identified as a key threatening process to the Koala within NSW (Table 1), is recognised within the Queensland Government's Koala Conservation Plan and Management Program, and in the federal Government's National Koala Conservation and Management Strategy. Recovery planning for another thirteen federally listed threatened fauna species also identifies wild dog predation as a key threat (Table 2). These species will also benefit from the sustained control of wild dogs proposed here. Foxes and cats will also be removed during the control program, further benefitting biodiversity.

Table 4. - Species threatened by wild dog predation under the key threatening process listing in NSW. (www.environment.nsw.gov.au/determinations/feraldogsFD.htm)

Species Type	Species		NSW Conservation Status
Mammal	Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	Vulnerable
Mammal	Koala	<i>Phascolarctos cinereus</i>	Vulnerable
Mammal	Southern Brown Bandicoot	<i>Isodon obesulus obesulus</i>	Endangered
Bird	Eastern Ground Parrot	<i>Pezoporus wallicus wallicus</i>	Vulnerable
Bird	Pied Oystercatcher	<i>Haematopus longirostris</i>	Endangered
Bird	Hooded Plover	<i>Thinornis bricollis</i>	Critically Endangered
Bird	Little Penguin	<i>Eudyptula minor</i>	Endangered Population

Table 5. Current federally listed threatened species for which wild dog predation has been identified as a threat to their recovery (details can be found in the respective national recovery plans available at www.environment.gov.au). *Although the koala is not yet included on the federal threatened species list, it is the subject of a National Koala Conservation and Management Strategy.

Species type	Common name	Scientific name
Mammal	Koala*	<i>Phascolarctos cinereus</i>
Mammal	Marsupial moles	<i>Notoryctes typhlops</i> , <i>N. caurinus</i>
Mammal	Smoky mouse	<i>Pseudomys fumeus</i>
Mammal	Golden bandicoot	<i>Isodon auratus</i>
Mammal	Northern quoll	<i>Dasyurus hallucatus</i>
Mammal	Greater bilby	<i>Macrotis lagotis</i>
Mammal	Long-footed potoroo	<i>Potorous longipes</i>
Mammal	Bridled nail-tail wallaby	<i>Onychogalea fraenata</i>
Mammal	Proserpine rock-wallaby	<i>Petrogale persephone</i>
Mammal	Northern hairy-nosed wombat	<i>Lasiorninus krefftii</i>
Bird	Black-breasted button-quail	<i>Turnix melanogaster</i>
Bird	Mallee fowl	<i>Leipoa ocellata</i>
Bird	Southern Cassowary	<i>Casuarius casuarius johnsonii</i>
Reptile	Marine turtles	Various

Attachment 2 - Articles from the Northern Star newspaper in NSW describing the impacts of wild dogs on a range of stakeholders in the region and the difficult issue of managing these dogs in semi rural/peri urban environments.

Byron bid to control wild dogs

Ava Benny-Morrison | 14th April 2011



At least 10 wild dogs have been killed in the past three weeks by a private trapper.

A PRIVATE trapper from Byron Shire has had great success in eradicating wild dogs in the region, catching 10 in the past three weeks.

Now a group of residents has hired the services of the trapper, Jim Rogers, who has caught 75 wild dogs across Byron Shire in the past two years.

Byron Shire Councillor Patrick Morrissey will put forward a notice of motion at today's council meeting requesting the council allocate \$20,000 from its 2011/2012 budget to a strategic wild dog control program.

"People are frustrated that the service being provided by the Livestock Health and Pest Authority is not solving the problem," he said.

Cr Morrissey said villages within the shire, including Main Arm and Goonengerry, were now networking to eradicate wild dogs.

The LHPA is responsible for enforcing the control of pest animals on private lands.

LHPA North Coast senior ranger Dean Chamberlain said rangers did administer trapping when baiting programs were ineffective.

"A group of landowners baiting on a regular basis is the best form of control you will get," he said.

LHPA staff recently laid traps in the Nimbin area and will start a baiting program at Nashua next week following a wild dog attack on a domestic dog recently.

The LHPA is the only body able to authorise use of the wild dog bait 1080. There are strict guidelines for its use.

Wild dogs remain a problem

14th February 2011

WILDLIFE carer Katy Stewart, of The Pocket, says despite baiting programs wild dogs are still an issue for her community.

Ms Stewart said she still saw at least one wild dog every day on her property near the village of Crabbes Creek.

In April last year, 84 baits were laid on properties at The Pocket, which resulted in the bodies of four wild dogs being discovered.

"It's a little bit better, but there are still a lot of dogs out there," Ms Stewart said.

Ms Stewart, who is unable to set baits on her property due to its proximity to a school, said she would like to see marksmen hired to cull wild dog numbers in her community.

Wild dog numbers were starting to build up again as pups weaned from their mothers moved on in order to mate, Dean Chamberlain, senior ranger with the North Coast Livestock Health and Pest Authority (LHPA), said.

Mr Chamberlain said a co-ordinated effort between landholders and the LHPA was required to manage the problem.

"It is the responsibility of landholders to control dogs on their own properties, but we can help them," he said.

The LHPA is seeking input from the community as part of the review process for its Wild Dog Management Plan for the Northern Rivers.

Northern Star

Farm ravaged by wild dogs

Ava Benny-Morrison and Kate O'Neill | 15th April 2011



Bob Kerle, of Wilsons Creek, calls his sheep into a purpose-built pen to prevent wild dog attacks.

Jay Cronan

BOB KERLE has fought tirelessly during the past few years trying to combat the increasing number of wild dogs that ravage his property and animals almost weekly.

But it was a long-running battle he recently and regrettably lost.

Mr Kerle, who lives at Wilsons Creek, used to have 30 to 40 sheep, but is now down to 11 due to wild dog attacks on his stock.

"We had five dogs here on Tuesday night right near the house," he said.

"Someone is going to get killed.

"Our neighbour is afraid to walk home at night because the dogs are walking the street."

Every night Mr Kerle locks up what is left of his herd into a pen, where two fluorescent lights are turned on and a radio is played throughout the night.

While the music and lighting proved successful, the wild dogs started to attack in broad daylight, he said.

"We don't get much trouble at night time. It's the daytime killing that is getting them," Mr Kerle said.

He recently came home to find one of his sheep gutted by a wild dog only moments before the feral animal turned on him.

"It would have had me if it was not for my dog. It was that quick and he was coming straight for me," Mr Kerle said.

"If it had been a child, it would have been killed."

Mr Kerle can't use 1080 baiting to eradicate the problem dogs as he lives too close to a public school and has close neighbours.

Instead, the Wilson Creek resident of 30 years gave up breeding further sheep.

"We don't bother breeding any more because they are just getting killed," he said.

"The sheep get gutted and the dogs don't even kill them.

"The sheep crawl back down to the house and we have to kill them."

Byron Shire Council agreed yesterday to allocate \$20,000 to a wild dog, cat and fox control program in next year's budget.

Mayor Jan Barham said biodiversity protection was one of the council's core responsibilities.

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