

Proceedings of the NSW Linear Reserve Environmental Management Forum



Held at the Australian National Maritime Museum, Darling Harbour NSW
Tuesday 30th October, 2012

NSW Linear Reserve Environmental Management Forum

The NSW Roadside Environment Committee (REC) hosted the NSW Linear Reserve Environmental Management Forum in Sydney on Tuesday 30 October 2012 at the Australian National Maritime Museum in Darling Harbour, Sydney.

The forum provided an opportunity for land managers and other interested people to learn and discuss operational and strategic issues facing linear reserves in NSW.

Eighty participants attended the forum with presentations covering the importance of linear reserve environments, the Great Eastern Ranges Initiative, as well as best practices in roadside environmental management. Workshop sessions focused on ways to manage competing and complex issues.

The NSW REC thanks Erica Adamson (General Manager, Environment - Roads and Maritime Services) for providing the Opening Address and Michael West (Metropolitan Local Aboriginal Land Council) for the Welcome to Country.

The NSW REC also thanks the presenters for their contributions at the Forum and for preparing proceedings in this document:

- Dr Peter Spooner (Charles Sturt University) - Road reserves in NSW: values, challenges, and opportunities
- Gary Howling (NSW Office of Environment and Heritage) - Implementing the Great Eastern Ranges Initiative: the role of linear reserves in achieving continental connectivity
- Steve Wilson (Hunter & Central Coast Regional Environmental Management Strategy - HCCREMS) - A Regional Approach to Managing Roadsides
- Rachel Clancy (Albury City Council) - Working in Albury's Significant Environment Areas
- Lloyd van der Wallen (NSW Rural Fire Service) – Fire Management in Linear Reserves

Slides from the afternoon discussion session are also provided, including a table of the priority issues for linear reserve environmental management identified by participants in the forum registration process.

A short report on results of the forum feedback survey is also provided.

Road reserves in NSW: values, challenges, and opportunities

Dr Peter Spooner

Charles Sturt University, Email: pspooner@csu.edu.au

A brief history of road reserves

Roadside environments are a ubiquitous component of the Australian landscape. Fringing our vast network of roads and stock routes, these remnants of native vegetation often provide the only remaining evidence of extensive forests, woodlands and grassland ecosystems which once graced the countryside. In conjunction with stock routes, roadsides often constitute a significant proportion of native vegetation remaining in agricultural or urbanized areas, and provide important refuge for populations of native plants, many of which are threatened or endangered. Therefore Australia is fortunate to possess these linear remnants, but how did they get there?

The narrow area of land which contains the road and surrounding environments is a road reserve – an area of public land set aside to provide transportation routes, many of which were first surveyed in the late 19th century. As our landscapes were subdivided for settlement (after land acts in 1861), an extensive network of road reserves were surveyed so all titles could access water. Most road reserves were originally surveyed at one-chain (20.12m) width for horse and carriage - which is barely wide enough for modern transportation needs. To mark out road reserves, survey instructions in 1848 described the marking of boundaries with blazed trees ‘with a broad arrow at least 6 inches long...and the portion number’. The mark mainly used was a shovel shaped blaze, and corner trees were often blazed on four sides. Such trees can still be found in road reserves today.

Problems with road usage and construction evidently led to changes in survey design of road reserves. It was initially hoped that newly formed Parishes would pay for the upkeep of minor ‘Parish’ roads as in England. But as road construction was a low priority in the late 1800s as compared to rail, most ‘roads’ of the time were no more than a boggy collection of tracks. In the late 1800s, it appears that the fencing in of one-chain road reserves was causing major problems in road usage and construction. For example, an 1872 instruction to surveyors states:

Very serious interruption to traffic in the interior of the Colony has resulted from the fencing in of lands by proprietors either side of projected or reserved roads, previously to the construction and drainage of such roads, and it is considered expedient that... roads according to the nature of the ground and probable traffic may be 100 or 150 links wide, or even more in cases where materials for road making are scarce.

Many roads were in such a deplorable state, ‘ploughed up into such a slough by bullock teams’, that travellers were forced to take rails out of adjoining paddock fences to circumnavigate problematic areas, much to the consternation of neighbouring landholders. To alleviate this problem, a system was developed to survey major roads at much greater widths; main roads and stock routes often surveyed at widths from 1.5 to 3 chains (30-60m). In this way, extensive linear tracts of crown lands were retained for transport use. The (indirect) legacy of these past land-use decisions is an extensive network of vegetated corridors traversing New South Wales – particularly through the wheat–sheep belt. For further details, see Spooner (2005).

Travelling Stock Routes (TSRs) are also an integral component of road networks. Indeed, most of the general public would not know if they are travelling down a normal road or stock route. The clue is in the width of the corridor. Many stock routes were surveyed up to ½ or 1 mile wide, however

most are 3 chains (60m) wide. It has been suggested that many may have started as trails of the indigenous peoples, tracks of native animals, bullock tracks of early explorers or overlanders, or as routes between early settlers homes, water-points and townships. As such, many TSRs are our oldest roads, where government authorities merely surveyed and administered pathways already in existence. The origins of TSRs are therefore of great historical interest, as they are a lasting imprint of people and transport patterns long ago (see Cameron & Spooner 2010; Spooner *et al.* 2010).

Not surprisingly, TSRs are now gaining new attention as historic roads in many rural areas of Australia. Their development created a vast network of vegetated corridors, which by the late 1800s, was in the order of millions of hectares. Presently the network is much reduced, however many components still remain which possess significant tracts of native vegetation. Many such TSRs possess important conservation values, where in some areas, managers graze TSRs to achieve conservation, fire hazard reduction and production aims.

Management of road reserves – challenges

In the early 20 century, much of the ‘road network’ was nothing more than an ad hoc collection of narrow vegetation corridors, where travelers navigated their way through the trees along rough bush tracks. Local councils had the enormous task of making this network trafficable, where individual road reserves being used by transport were declared as ‘open’ roads. Development of road networks continued throughout much of the early 1900s, where decisions were made not to use many previously surveyed road reserves – often known as ‘paper roads’, in reference to their existence as ‘roads’ only on parish maps. Later, councils would close many unused road reserves – which often still exist as narrow bush corridors, providing enormous opportunities for conservation projects.

Since the late 1980s, there has been increasing attention toward the conservation management of stock routes and other roadside environments. Rather than use a grader to remove roadside vegetation for safety concerns, more enlightened councils are endeavoring to better manage these precious biodiversity assets. In the 1990s, bodies such as the NSW Roadside Environment Committee (REC) were formed to encourage the better management of the roadside environments, by providing training and assistance to identify the natural and cultural heritage values of roadsides. For example, most council’s have now used a rapid bio-assessment methodology of some kind to **assess the conservation values of each road segment** (ranked as High, Medium or Low). These rankings are then used to determine appropriate management actions for each road category, as described in local roadside management plans.

However councils must address a number of competing values and manage accordingly (Table 1). For example, conservation needs must be balanced with road safety and fuel reduction requirements. This is no easy task, where efforts to maintain roadsides vary enormously from one council area to the next. This largely depends on available funding, but also on the roadside management programs put in place. Unfortunately, many rural councils cannot afford a dedicated environment officer, and so compliance to any roadside plan is often lacking. Roadside vegetation plans need to be promulgated in local by-laws for compliance to take place, else they can languish as a dusty folder on the bookshelf in the engineer’s office.

Training of council workers is often lacking or non-existent, and local contract workers are often over-looked in this process. Ongoing training is necessary so workers know exactly where the ‘good bits’ are, so as to avoid damage by heavy machinery. To this end, simple **marking (signage) of roadsides** (using colour-coded markers on existing road reflector posts) has been successfully implemented in many council areas to warn road workers of sensitive vegetation areas.

Table 1. Competing values and issues to consider in the management of road reserves

<p>Enhance road safety and vehicle movements</p> <ul style="list-style-type: none"> • Soil stability management • Water runoff, run-on control • Road upgrades – development needs • Legal requirements/ insurance 	<p>Protect environmental values</p> <ul style="list-style-type: none"> • Threatened species and ecosystems • Seed source for revegetation activities • Connectivity functions? • Weed management • Stockpiling
<p>Infrastructure corridor</p> <ul style="list-style-type: none"> • water, power, telecommunications 	<p>Protect cultural heritage values</p> <p>e.g. bridges, scar trees, stock routes, heritage routes, monuments, memorials</p>
<p>Manage fire risk</p> <ul style="list-style-type: none"> • Roadside vegetation plays a role in fire management ie slows grass fires • Can also act as ignition points 	<p>Preserve and enhance roadside amenity</p> <ul style="list-style-type: none"> •Aesthetic values •Litter management
<p>Resources</p> <ul style="list-style-type: none"> • Firewood/ rocks/ gravel/ bees • Stock grazing during drought 	<p>Recreational values</p> <ul style="list-style-type: none"> • sight seeing, horse riding, hiking, bike riding • educational values
<p>Barrier to wildlife movements</p> <ul style="list-style-type: none"> • Roadkill (links to safety) 	<p>Ecotourism values</p> <p>nature drives</p>
	<p>New resources – carbon stock</p>

It is critical for state-based natural resources agencies to provide further training and resources towards the conservation management of roadsides. Yes, councils are responsible for their management; but given that conservation outcomes derived from roadsides can greatly contribute to catchment or state based conservation targets, these assets cannot be ignored. Also in terms of future climate change scenarios, we are fortunate to already have a green network in place to assist native species to disperse across the landscape. In this context, it is vital that roadside vegetation networks are maintained and even improved with restoration inputs. **Ongoing monitoring of roadsides is vital**, as vegetation conditions can both improve and deteriorate, depending on prevailing disturbances (e. stock grazing, or soil disturbance from grading), edge effects, impacts from the surrounding farmlands, or internal roadway stressors. Therefore regular formal monitoring is highly desirable to refine any planned management inputs.

Given the importance of many roadside environments, councils and state managers (RMS) also need to “**think outside the box**” in regards to road upgrades. In many landscapes, road reserves provide refuge for threatened species and ecosystems. Therefore any attempt to widen the road will require often expensive mitigation or restoration strategies. Alternative strategies need to be explored such as: (1) **expand the roadside**, by encouraging natural regeneration of native vegetation outside of the road reserve, and acquire adjacent lands if necessary, and (2) **move the road** – rather than directly impact on roadside vegetation, it may be feasible in many cleared farming landscapes to close the road reserve, and build a new carriageway on adjacent lands instead.

Opportunities to enhance roadsides – new values

Road reserves and stock routes have many important environmental, recreational, tourism and cultural heritage values to consider. For example, a number of our roads and TSRs literally follow the tracks of our first explorers and settlers, may have indigenous origins, and therefore possess **important cultural heritage values**. As such – many have a story to tell, which could be a useful approach in interpreting and educating the general public of roadside vegetation values. Roads and stock routes can have important cultural heritage values, not just for physical structures (such as old bridges), but for possessing uncommon, rare or endangered aspects of our cultural or natural history (e.g rare or endangered plants or ecosystem). These species, habitats, and remnant ecosystems also provide important aesthetic values, which are often unique to local landscapes.

Formal listing of specific road reserves, or stock routes, on State and National registers may result in opportunities to gain additional funding for management from sources otherwise not considered. However what criterion constitutes an historic road is not well understood in Australia. The term immediately evokes thoughts of famous roads such as Route 66 in the USA, or the Great Ocean Road in Victoria. In New South Wales, the Old Great North Road (north of Sydney) is the only historic road listed on the NSW State Heritage Registry, and is significant because:

“.. it is associated with several notable figures in colonial administration, surveying and engineering including Governor Darling, Surveyor General Thomas Mitchell and... physically demonstrates the work patterns, skills and organisation of convict work gangs... (NSW Heritage Office 2007).

However an historic road can be listed on the NSW State Registry if it meets one of the following three criteria:

- (a) is an item is important in the course, or pattern, of NSW’s cultural or natural history;
- (b) is an item is important in demonstrating aesthetic characteristics, or
- (c) is an item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history; e.g. plants (NSW Heritage Act 1977, Amended 1998).

Two roads are listed in the Register of the National Estate (Australian Commonwealth): the Bala Travelling Stock Route, Boorowa and the Somerton Road Travelling Stock Route, Lower Somerton Rd, NSW; for “..possession of uncommon, rare or endangered aspects of Australia’s natural or cultural history”, as they contain ‘intact’ remnants of endangered White box woodlands, and provide refuge for a number of rare or endangered plant species (Australian Heritage Council 2007). These examples highlight how further work should be undertaken to identify and preserve the cultural heritages values of roads and TSRs in many parts of New South Wales.

The benefits of identifying, preserving and managing an historic road are diverse. They may include opportunities for tourism (**ecotourism routes**, which include historic and natural values) and economic development, and assistance for restoration of historic structures and features such as bridges, survey trees, indigenous camp sites etc. Preservation of certain road sections may result in improved road safety and traffic flow. Furthermore, such a process may foster community pride associated with a more comprehensive understanding of a local area’s **cultural and transportation heritage**. Importantly, understanding the development history of historic roads can provide an important tool to gain new awareness of roadside environmental values, and facilitate greater community investment in their ongoing management.

Conclusions

Local councils, Landcare and naturalist groups, and other larger state-base agencies are doing a wonderful job in conserving the vegetation in road reserves and stock routes. However key threats such as grazing, invasive species and pollution from adjacent areas require constant vigilance. As human constructions, the key to success in ensuring the persistence of linear vegetations such as roadsides, is in addressing ongoing human impacts.

In many areas of New South Wales, the network of roadside environments far exceeds current protected areas in terms of areal extent and coverage of threatened habitats, especially in intensive agriculture districts where few conservation reserves exist. These linear features are critical for conserving flora and fauna in rural landscapes, and in providing potential ‘conduits’ for improving connectivity between fragmented populations (Spooner & Smallbone 2009). **The importance of road reserves will only become more pressing with climate change**, where the value in preserving and maintaining road reserves and TSRs is yet to be fully realised by state government bodies.

Sections of this conference paper was originally published as: Spooner P.G. (2010) Conservation management of linear vegetation remnants in Australia. *Australian Plant Conservation* 19(2), pp. 3-4

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THE ROLE OF LINEAR RESERVES IN CONTINENTAL CONNECTIVITY CONSERVATION

Gary Howling¹, Lynn Webber² and Rob Dunn³

¹Principal Conservation Programs Officer, Great Eastern Ranges Initiative

²Manager Conservation Programs Delivery, NSW Office of Environment and Heritage

³Chief Executive Officer, Great Eastern Ranges Initiative

Introduction

The past loss of species in Australia, and predicted future extinction resulting from existing 'extinction debt' from past clearing and climate change have stimulated increased interest in the need for large landscape rehabilitation projects (DSEWPC, 2012). The Great Eastern Ranges Initiative (GER) is a continental conservation project which seeks to link protected areas and other natural habitats for 3,600 kilometres along the eastern ranges of Australia from the Grampians in western Victoria, through New South Wales and the Australian Capital Territory, to far north Queensland (GER, 2012).

The GER is one of a number of continental scale programs which have emerged in the last decade in response to the widespread recognition that protected areas are not adequate to protect and retain the full range of ecosystems and the species they support. This recognition includes the realisation that:

- Even the largest protected areas are not large enough to protect populations and ecological processes that exist across multiple landscapes;
- In many landscapes, past habitat loss and land use development mean it is not feasible to protect more than relatively small isolated remnants; and
- The history of development of parks networks is such that there is a significant disparity in the extent to which different landscapes and ecosystems have been protected.

The global emergence of connectivity conservation initiatives has more recently been reflected in Australia through development of major initiatives in most environments, including GondwanaLink (southwest Western Australia), Trans-Australia EcoLink (arid landscapes through the Northern Territory and South Australia), Habitat 141 (mediterranean ecosystems in western Victoria and southwest NSW) and central Tasmania (temperate forests). The development of these initiatives has been acknowledged by the Australian Government through the release, in November 2012, of the National Wildlife Corridors Plan (DSEWPC, 2012)

Connectivity conservation and the role of 'corridors'

The natural environment is in constant motion. All native species have the ability to move from one location to another at some point in their lifetime. In fauna, such movements are obvious as they involve an individual moving from one location to another. However, for organisms that rely on the resources available in a specific location, such as plants, fungi, lichens and some aquatic species, movements are often far less obvious and rely on the dispersal of spores, seeds, larvae, etc.

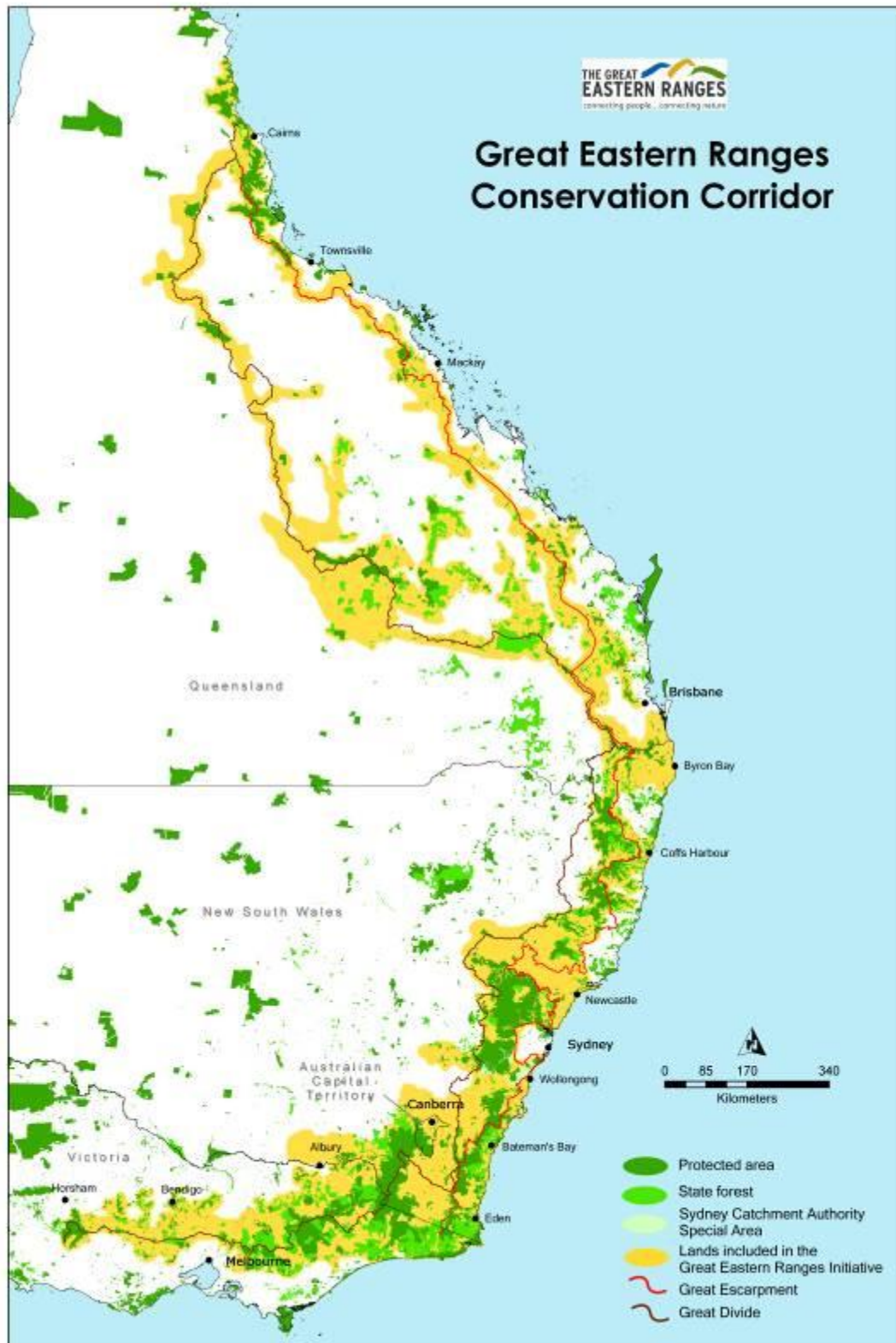


Figure 1. The Great Eastern Ranges Initiative in eastern Australia

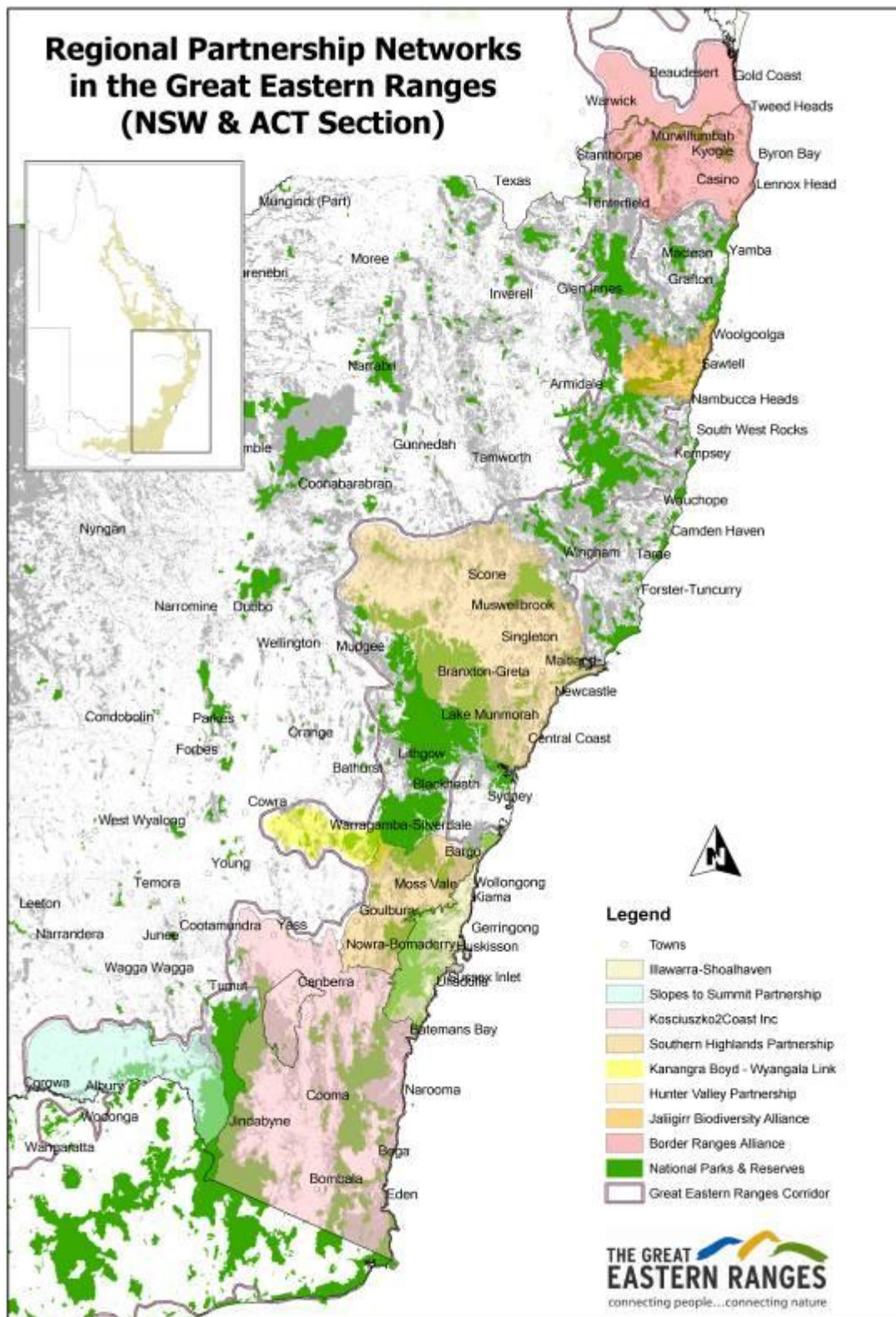


Figure 2. Regional Partnerships in the NSW and ACT sections of the GER

‘Connectivity’ refers to the characteristics of an area within a landscape or seascape that enable species movements from one location to another. The factors that determine the connectivity of an area depend on the dispersal ability and movement behaviour of the species concerned. Different species demonstrate very different types of movement, influenced by their varied life histories, anatomy and the environmental conditions that drive the need for dispersal. Such movements can be characterised in several ways, but generally include:

1. **Altitudinal movements** – along altitudinal gradients (terrestrial environments) or within water columns (marine environments) in daily or seasonal cycles.
2. **Latitudinal movements** – predictable annual movements between regions in response to seasonally driven changes in availability of suitable habitat, food, or marine currents.
3. **Episodic movements** – less predictable, with species responding to periodic availability of key food resources or favourable breeding conditions. Such movement patterns are generally driven by significant climatic events (e.g. flooding).
4. **Range shift or colonisation** – changes in the distribution of species driven by long term climatic cycles or changes in regional conditions, nutrient availability or currents.

Connectivity conservation initiatives such as the GER address these landscape design considerations by bringing together stakeholders to coordinate existing efforts to protect and restore opportunities to link protected areas and habitats so that species with varying levels of movement capacity are able to:

- persist within remnants – through protection and management of remnant habitats to remove or limit pressures from weeds, feral animals, etc.
- access and utilise the resources in broader area landscape – through buffering remnants and reducing pressures in intervening areas so that they are more suitable for movement; and
- move between remnant areas, so that the total area of 'effective habitat' which is accessible is larger than that confined to within a single reserve.

Connectivity conservation and the Great Eastern Ranges

The GER includes landscapes comprising the most species rich and among the most ecologically varied on the continent. These include values recognised as significant on a global scale (Pulsford et al, 2010), including:

- Habitat for 60% of listed threatened species, the richest concentration of mammal and bird species in Australia, and the highest concentration of primitive flowering of rainforest plants in the world.
- An extensive network of parks and other public lands, including three World Heritage Areas and countless Aboriginal cultural sites.
- The continent’s longest mountainous landscape, including the maximum altitudinal range (0 to 2,228 meters at Mount Kosciuszko) across 21 degrees of latitude.
- Headwaters of 63 large rivers, supplying water to over 11 million Australians.

The GER is able to draw on a rich data which describes the ecological characteristics of the GER corridor in its entirety, threats to these values and opportunities for effective future investment. In 2010, the GER commissioned a series of short projects to depict the values of

the GER corridor on a continental scale. The data depict ecological processes and patterns at large regional scales, providing context for investment and management on a local scale.

- Bird migrations - Bird migration data highlight the significance of the GER for use, dispersal and seasonal migration of a large proportion of forest and woodland species (Smith, 2010).
- Drought refuge - analysis of time series primary productivity data highlight the role of the GER in providing refuge habitat under dry conditions (Mackey and Hugh, 2010).
- Connectivity - habitat connections at continental and cross-regional scales demonstrate the potential to maintain existing links along the length of the GER as part of a network of linked areas in eastern Australia which include coastal remnants and woodlands of the sheep-wheat belt (Drielsma *et al*, 2012).
- Condition - modelling of current condition demonstrate the importance of existing parks as islands of good habitat and the impacts of developed landscapes on park margins. Combined with modelling of condition into the future highlights the potential for these pressures to continue to erode condition and increasingly isolate protected areas, pinching off vital connections (Drielsma *et al*, 2010).

Projected impacts of warmer conditions and increased climate variability (pressing ecosystems southeast and upwards) and coastal population expansion (pressing inland and out from existing coastal areas) means it will be increasingly important to focus efforts on core areas provided by protected areas and link these while opportunities permit.

To address these values and management needs, the GER has targeted connectivity conservation efforts in major gaps in connectivity in five landscapes (see Figure 2). In each landscape, the GER has formed partnerships with the cross section of local groups and organisations working in the landscape to:

- agree common priorities for improving connectivity locally
- developing a common understanding of how each group's activities contribute to the task of improving connectivity locally
- coordinating projects and aligning efforts in the most important areas to achieve tangible outcomes
- provide a range of opportunities and incentives for community and landholder involvement

In practice, this results in 'corridors of effort' across properties and different land tenures formed by linked activities and mechanisms.

Linear reserves and the GER corridor

The role of linear reserves and remnants such as roadside, rail easements and travelling stock routes has been recognised as of critical importance to achieving the vision of a GER corridor within local landscapes.

1. Remnants of vegetation in the most heavily developed parts of the GER landscape - much of the GER effort is focused not on the hilltops, but on the footslopes and valleys which

bisect and disconnect. Roadsides and TSRs provide the remaining examples of the connective fabric of the GER, populations of threatened species, and other in-situ values already recognised.

2. Existing connections - The presence of remnants on linear reserves is such that they already provide (albeit tenuous) linkages across otherwise developed areas.
3. Public lands with potential to act as the anchors for landscape rehabilitation - security of tenure and community recognition of the public nature of these lands means they provide a natural focus for work that can be maintained into the future.
4. Focus for community effort - The accessibility of public lands means they provide a focus for community action, and an opportunity to come together to protect and manage a common resource. A recent Bioblitz rehabilitation projects in the Slopes to Summit partnership recently targeted replantings on TSRs adjacent to the Hume Highway.
5. An accessible educational resource - The role of roadsides as transport easements means they have a ready audience for interpretive signage and constant messaging about the values of the area. For example, the Golden Highway in the upper Hunter Valley is currently the focus for collaboration with the Wanaruah Land Council to recognise the area to the Wonaruah people as a cross place, which is reflected in the areas importance to nature moving through a natural pinch in the ranges.
6. Opportunities for sympathetic management to allow amenity to complement biodiversity – Management planning and a dedicated staff allows linear reserve management authorities to contribute to maintaining these values.
7. Potential for involvement in local partnership activities – The GER now has almost continuous partnership area coverage in NSW and other States. Over 120 organisations are now involved, including local councils, easement managers and local landholder groups. These networks and partnerships provide opportunities for linear reserve managers to engage with local community efforts and consider the potential for reserve management to complement existing efforts.

Conclusion

The Great Eastern Ranges Initiative is one of a number of continental connectivity initiatives which recognise that parks are not enough, and we need to collaborate to create linkages and wildlife friendly habitats across landscapes. Local action in priority areas is essential to target effort into the most important areas and ensure that participant and the wider community are aware of the importance of efforts to link habitats. Linear reserves and other small remnants are a vital first consideration in how we achieve connectivity conservation on a continental scale through management of local values.

Consideration of connectivity locally and how it can contribute to the wider landscape should be embedded in planning and management. Land managers seeking to maintain landscape connectivity to support these different types of movement have emphasised the use of ‘corridors’, i.e. intact habitat linkages that facilitate the movement of an individual from one

location to another. Corridors are recognised as an important contribution to maintaining connectivity within landscapes, between ecosystems and across regions.

The potential for easements and linear reserves to either complement or act as disconnects. Community education about wildlife crossing and potential for increased awareness of greater risks around full moons and periods when traffic movement patterns are changed (around daylight saving and early in holiday periods). This should complement adoption of best practice by easement managers to lessen the impacts of essential maintenance undertaken to protect assets and human life.

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A REGIONAL APPROACH TO MANAGING ROADSIDES

Steve Wilson, HCCREMS Regional Program Manager, Hunter Councils

The Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS)

Established in 1996, the HCCREMS program facilitates a coordinated response to key environmental management and planning issues best managed by councils at a regional scale. HCCREMS membership comprises the 14 councils of the Hunter, Central and Lower North Coast region of NSW (refer Figure 1). This region extends from above Taree in the north to the Hawkesbury River in the south, and from the Pacific Ocean along the east coast to inland of Cassilis in the west. In total, the region covers an area of 39,021 square kilometres and has a population of around 1 million people.

Figure 1. HCCREMS member councils



The key objectives and activities of the HCCREMS program include:

- Leading by innovation to promote ecologically sustainable development throughout the Hunter, Central and Lower North Coast region
- Enhancing and promoting cost effective and sustainable environmental management programs and practices, through regional cooperation in research, capacity building and information exchange between the member organisations
- Attracting funding and resources to the region to research, design and deliver innovation and best practice in environmental management policies, practices and programs

The program has now been operating successfully for over 14 years and continues to attract significant funding and partners to develop and implement regional scale projects. Key theme areas for the HCCREMS programs are:

- Biodiversity
- Climate Change
- Roadside Environments
- Water
- Weeds
- Sustainability
- Environmental Compliance
- Community Arts & Education

Regional Roadside Environment Program

Commencing in 2005, the HCCREMS Regional Roadside Environment Program aims to maintain and improve the important ecosystem services and environmental values that high quality and well managed roadsides contribute to the landscape. These include biodiversity conservation, improved catchment and ecosystem health and maintaining the aesthetic character of the landscape.

Importantly the program pursues a holistic approach to the management of roadsides. It focuses encompasses the wide range of environmental services provided by well managed roadsides, as well as the spectrum of environmental impacts that potentially result from inappropriate road design, construction and maintenance practices.

The program aims to influence all levels of roadside management from planning and environmental assessment, through to implementation of road maintenance and construction activities. It also includes an emphasis on the delivery of regionally strategic on ground activities to protect and rehabilitate high conservation species and ecosystems that are present within roadside environments.

Core elements of the program delivered to date include:

- Widespread consultation with councils to identify roadside management issues;
- Identifying and documenting the value of icon roadside vegetation remnants across the region;
- Developing a region wide Roadside Environmental Management Strategy;
- Developing a suite of management tools and products to build the capacity of councils to manage roadside environments;
- Implementation of a regional roadside marker scheme.
- Delivery of on ground conservation and rehabilitation works.

Why a regional approach?

There are some key underpinning factors supporting the management of roadside environments at a regional scale. These include:

1. Consistency of issues

Consultation work completed with councils across the HCCREMS region has identified a high degree of commonality in the nature of roadside management issues being experienced by these organisations. A regional approach provides the opportunity to develop tools, resources and programs that share and build

upon the lessons and experiences of a range of councils in responding to common issues, facilitate broader scale input to the development of such resources, and importantly, prevent individual councils 'reinventing the wheel'.

2. *Regionally strategic approach*

A regional approach provides the opportunity to promote consistent practices and programs across local government boundaries. In doing so, the cumulative effect of consistent approaches can contribute significantly to enhanced regional conservation outcomes, not just for roadside environments, but for broader scale biodiversity outcomes of which roadsides form an integral component.

3. *Benchmarking*

Establishing regional processes and products can greatly assist councils understand how the nature and level of roadside management practices that they implement relates to other comparable organisations. In the HCCREMS region this has proven particularly important in respect to the level and nature of environmental assessment procedures completed by councils to ensure compliance with key Commonwealth and State Government environmental legislation.

4. *Cost efficiencies*

The delivery of regional programs can deliver significant costs efficiencies to participating councils. A regional program reduces the need for individual councils to each research, develop and design resources to address issues that are essentially common to other councils. Implementation of training and coordination of on ground works through a centralised organisation also provides efficiencies in that each council does not have to employ their own staff or procure the same level of resources that would otherwise be required to design and deliver similar programs.

Project Partners

A number of key project partners and stakeholders have been involved to date in delivery of the regional roadside environment program. These have included:

- Hunter Councils through the HCCREMS program;
- HCCREMS member councils (Greater Taree, Great Lakes, Port Stephens, Newcastle, Lake Macquarie, Wyong, Gosford, Maitland, Cessnock, Gloucester, Upper Hunter, Singleton, Muswellbrook and Dungog); and
- Hunter-Central Rivers Catchment Management Authority
- NSW Roadside Environment Committee
- NSW Local Government & Shires Association
- NSW Roads and Maritime Services

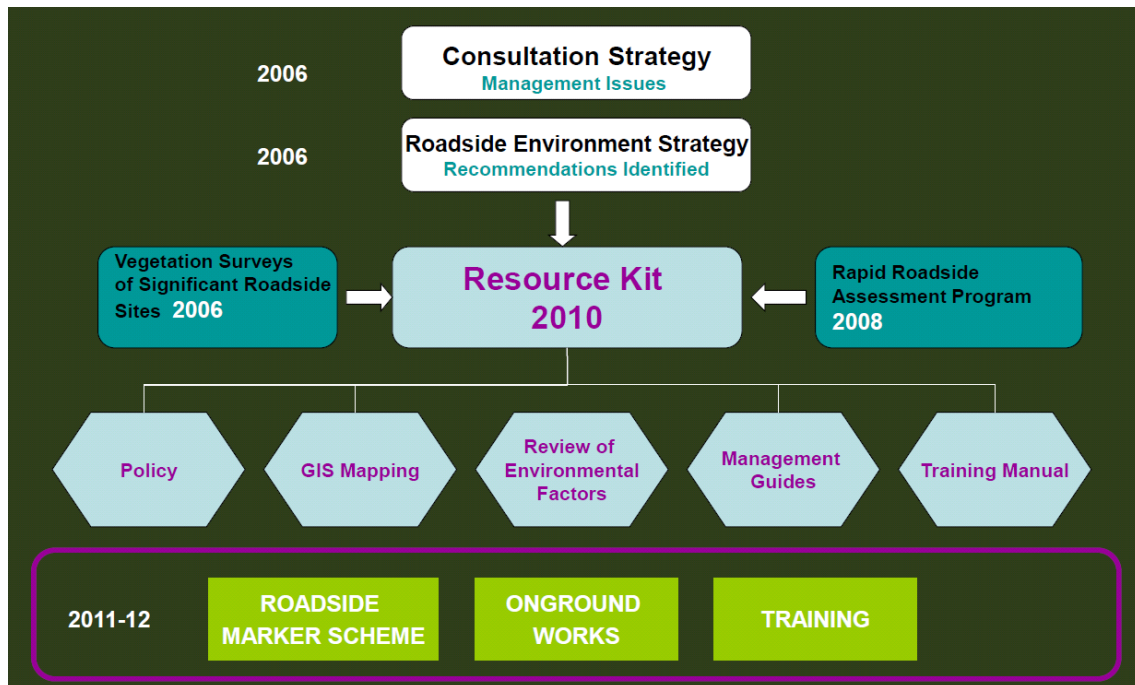
Key sources of funding to facilitate implementation of the program have included:

- Commonwealth Natural Heritage Trust
- NSW Roadside Environment Committee
- NSW Environmental Trust
 - Restoration and Rehabilitation Program
 - LGSA Roadside Vegetation Implementation Projects

Program Outputs

A number of outputs have been delivered under the regional program since 2006 (see Figure 1). These are described in more detail below.

Figure 2. Overview of Regional Roadside Environment program outputs



Consultation Report

Completed in 2006, this report identified that considerable opportunity exists for regional collaboration between councils to implement enhanced roadside environmental management initiatives. This is particularly true in the areas of training, materials purchasing, community education and awareness, and the development of regionally consistent policy, planning, and environmental assessment and management tools. The report identified that collaboration had the potential to generate significant cumulative resource and financial savings for councils across the region.

Regional Roadside Environment Strategy

The Regional Roadside Environment Strategy provides the strategic framework, direction and priorities for implementation of the regional program. It incorporates a suite of recommendations to meet and address council needs and management issues and builds upon existing roadside management initiatives, programs and systems identified during literature reviews and consultation processes. In particular the strategy aims to:

- Build a consistent and comprehensive understanding, suite of skills, and information resources within councils to facilitate improved environmental assessment, protection, management and rehabilitation of council managed roadside environments
- Recognise the considerable potential that exists for collaboration and resource sharing between councils to achieve multiple benefits including cost savings

and efficiencies, avoidance of duplication of effort, and consistency in policy and practises

Systematic Vegetation Survey Report

Developed as part of the NSW Roadside Environment Committee's state wide 'Saving Our Corridors' program, this report documents the findings of systematic biodiversity assessments completed for 28 high quality (icon) roadside vegetation sites across the Hunter, Central and Lower North Coast region.

Regional Roadside Resource Kit

The Roadside Environment Resource Kit provides a suite of practical resources to assist councils when undertaking road related environmental assessment and planning activities. In particular, it aims to assist councils to comply with key Commonwealth and State environmental legislation and to facilitate the early identification and assessment of environmental values and impacts when planning and designing road construction and maintenance programs. Components of the Resource Kit include:

Policy Template

The policy template aims to promote a consistent approach to the management of roadside environments both within and across councils. It identifies four key areas in which it is recommended to pursue consistency:

1. Environmental assessment procedures.
2. Integration of GIS resources into roadside planning and management activities.
3. Implementation of best practice management techniques pertaining to water, soil, vegetation and biodiversity management.
4. Staff training and development.

While the policy has been designed to promote consistent corporate commitment (within and across councils) to the management of roadside environments, it has also been designed in a manner that recognises the varying capacity of councils across the region to effectively implement the tools and resources that support its application.

GIS Attribute Layer

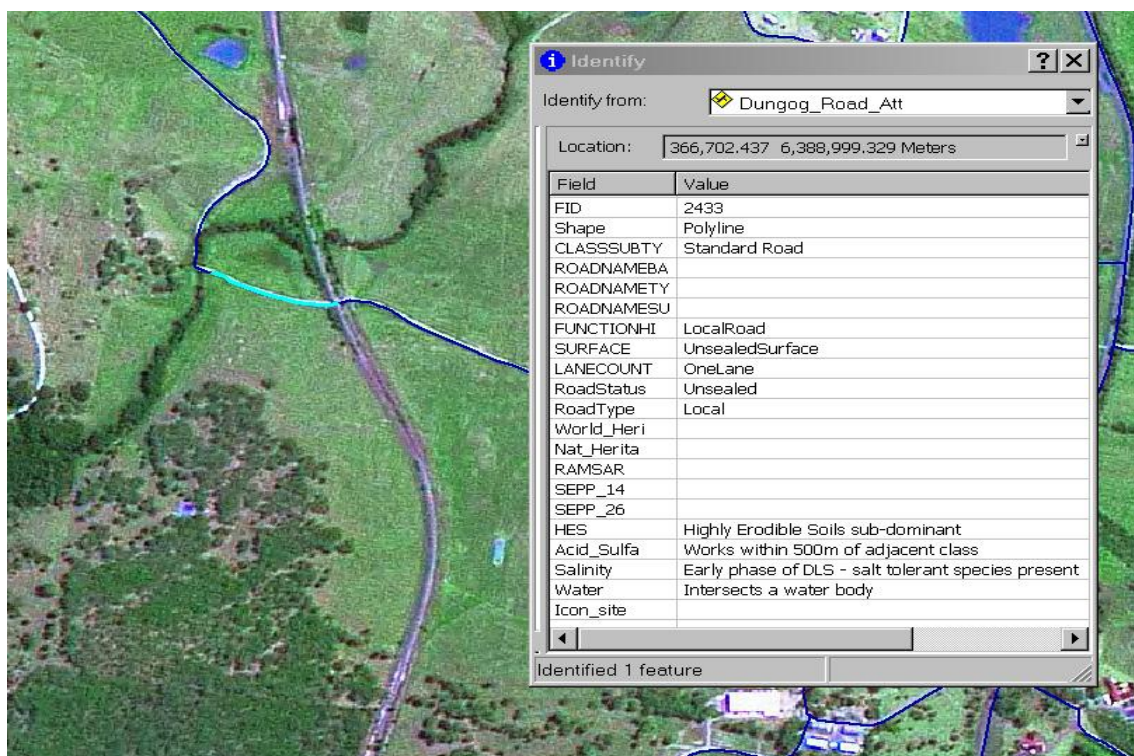
The roadside attribute layer is a GIS data layer that identifies the relationship / presence of a key range of environmental parameters for every road segment within the Hunter, Central and Lower North Coast region. The purpose of the layer is to provide a 'one stop shop' to flag potential environmental issues that may require consideration when planning road construction or maintenance works.

The layer contains information on a range of known, mapped environmental parameters including soils, water and vegetation, as well as lands to which environmental legislation applies. These include:

- World Heritage Areas
- National heritage Item or Areas
- RAMSAR wetlands
- SEPP14 wetlands
- SEPP26 Littoral Rainforests
- Highly Erodible Soils

- Acid Sulfate Soils
- Salinity
- Water (lakes, rivers, creeks and streams)
- Icon Roadside sites
- Roadside Marker sites

Figure 2. The GIS Attribute Layer aims to provide a `one stop shop` for identifying environmental issues or values



Review of Environmental Factors templates

A Review of Environmental Factors (REF) is a document used by authorities to make an assessment under Part 5 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*. A REF must be prepared by councils for any activity that has the potential to impact upon the environment. The REF process provides a means whereby the council considers the potential environmental impacts of a proposed activity, and develops measures to ensure the works avoid or minimise environmental impacts if the activity is carried out. The REF also provides a means for determining the need for further detailed assessment.

The Resource Kit includes two REF templates for slashing / mowing and road shoulder grading to assist councils consider and address relevant environmental legislation relevant to these common routine maintenance activities.

HCCREMS is also developing an electronic REF Template designed to substantially reduce the risk to councils of non-compliance with key State and Commonwealth environmental legislation. In this regard the template will:

- Step council officers systematically through a series of questions based on the relevant Commonwealth and State legislation, including on-line links and “help” functions to guide officers and build their capacity throughout the process
- Assist council officers in capturing a comprehensive suite of data to enable internal council processes to determine the appropriateness of the proposed activity.
- Produce a series of comprehensive, high quality reports for councils to use as part of the REF assessment process.
- Standardise the REF process within councils

Roadside Management Guides

The Resource Kit also includes a series of short, practical management guides focusing on the natural values of roadsides and potential impacts of road management practices on the landscape. They aim to assist road managers protect and enhance these values and protect and improve the broader environment as part of their day-to-day management activities. Guides included in the series are shown in Table 1.

TABLE 1. Roadside Management Guides

1. Water Crossings	8. Re-establishing Vegetation
2. Wetlands	9. Salinity
3. Protected Areas	10. Acid Sulphate Soils
4. Fauna	11. Erosion and Sediment: Road Construction
5. Threatened Flora	12. Erosion and Sediment: Road Maintenance
6. Vegetation Management: Road Construction	13. Grazing
7. Vegetation Management: Road Maintenance	14. Environmental Law

All of the Guides include a consistent format designed to assist council practitioners:

1. Identify roadside values
2. Consider potential impacts
3. Identify legislative requirements; and
4. Identify impact reduction principles

Roadside Training Resource Manual

This manual provides the basis for a roadside training course for council staff. The purpose of the manual is to provide course trainers with sufficient background information to prepare and deliver a roadside training course. The aim of the course is to provide field staff with an overview of the key environmental issues relevant to roadside environments. Broadly these issues include:

- Soil management.
- Water management.
- Vegetation management.
- Wildlife management.

Regional Roadside Marker Scheme

The Regional Roadside Marker Scheme involves implementing a roadside marker system to provide clear instructions for council staff when undertaking roadside management activities within identified ecologically sensitive locations. The scheme includes colour coded stickers being placed on existing or new white marker posts to alert council staff to the presence and nature of ecologically sensitive roadside environments. These stickers provide a clear coded link to supporting Field Guides that specify appropriate management practices to reduce environmental impacts for six key roadside activities:

1. Slashing / Mowing
2. Weed Control
3. Clearing and Construction Works
4. Grading
5. Stockpiling and Vehicle Parking
6. Cleaning Table Drains

Figure 3. The Roadside Marker Scheme aims to clearly and consistently identify ecologically significant roadside environments across the region



The marker scheme aims to significantly reduce the risk of inadvertently damaging threatened species and communities protected by Commonwealth and State legislation. Some 250 sites of ecological significance have been identified and documented across the region. These are spread across the 14 HCCREMS council areas. Ecologically sensitive sites are defined as:

- Intact remnant native vegetation which may be significant at local or regional levels

- Endangered Ecological Communities as identified in the *Threatened Species Conservation Act 1995* and the *Environment Protection and Biodiversity Conservation Act 2000*.
- Habitat for a range of significant flora and fauna species (eg the roadside environment may contain features including bush rock, fallen logs or trees with hollows that provide important habitat for a range of ground dwelling and arboreal animals).
- Roadsides adjoining or intersecting with wetlands, creeks and rivers which provide habitat for aquatic fauna and flora.
- Key habitats and corridors – road reserves that may provide the only corridor link for movement of fauna.

Roadside Environment Training

Since 2011 HCCREMS has been delivering training to member councils to build the awareness and capacity of staff to effectively implement the suite of products, programs and resources previously developed under the regional program. The training targets staff across the operational areas and management levels of councils to ensure a consistent, organisation wide approach to roadside environmental management at all stages of road planning, construction and maintenance.

Particular objectives of the training include:

- Raising awareness of the nature and significance of roadside environmental issues and values, and the benefits to councils and their communities arising from best practice management of these environments;
- Encouraging participants to think about their current roadside environmental assessment and management processes and practices in roadside environments and opportunities for improvement;
- Promoting the imperative for councils to comply with State and Commonwealth environmental legislation when planning and implementing works;
- Introducing and familiarising participants with the nature and application of best practice tools and resources included in the Roadside Environment Resource Kit, and the process for embedding these within the existing systems and processes of councils;
- Introducing participants to the Regional Roadside Marker Scheme and its application in their local council area.

Rehabilitation Works

HCCREMS is currently delivering on-ground projects valued at over \$1.1million (of which approximately \$700,000 is focused specifically on roadsides) that include rehabilitation and restoration of Endangered Ecological Communities, Threatened Species and high value habitat covering:

- 47 separate sites across the region
- 100km of roadside
- 40km of riparian systems

This work is meeting multiple objectives:

- the enhancement of high conservation value remnant vegetation and habitats
- the conservation of 6 Threatened Species and 6 Endangered Ecological Community types (Weeping Myall, Littoral Rainforest, Melaleuca Swamp

Forest, White Box-Yellow Box, Kurri Swamp Woodland, Lower Hunter Ironbark Spotted Gum)

- the strategic management of weed infestations in both aquatic and roadside environments
- the incorporation of sites into the roadside management program and regional marker scheme – including training and guidelines for councils regarding the sites on-going management and maintenance requirements
- the incorporation of the sites into HCCREMS long-term biodiversity and wildlife corridor mapping and monitoring program

The location and nature of works specifically incorporating roadside environments are included in Table 3.

TABLE 3. FOCUS OF ONGROUND ROADSIDE CONSERVATION WORKS		
Project Focus	Participating Councils	Focus of works
Coolatai grass management	Singleton and Dungog	Restore the natural resilience of native grass communities through the control of grass weeds (predominantly Coolatai) along approximately 100 kilometres of roads.
Yellow box – White Box woodland rehabilitation	Upper Hunter and Muswellbrook	On ground rehabilitation and restoration of six key roadside sites containing the nationally critically endangered White Box Yellow Box Grassy Woodland.
Persoonia & Grey Crowned Babbler habitat	Cessnock	Rehabilitation of key roadside sites containing habitat for the critically endangered <i>Persoonia pauciflora</i> and the vulnerable Grey Crowned Babbler.
Weeping Myall rehabilitation	Singleton, Muswellbrook and Upper Hunter	Remnants of this community (listed as endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>) are predominantly located in roadsides. The project will implement bush regeneration works and establish protection measures (eg fencing, barricades or planting of ecological buffers).
Water Crossings	Gloucester, Dungog, Greater Taree and Great Lakes	<ul style="list-style-type: none"> • Identification of priority water crossing sites that intersect with rainforest habitat and threatened flora. • Establishment of a new 'Water Crossings' category under the Regional Roadside Marker Scheme • Delivery of bush regeneration works to protect significant vegetation communities and improve water quality
EEC's in roadsides	Great Lakes & Port Stephens Councils	Restoration and rehabilitation of littoral rainforest communities located in road reserves & community land.

Future Directions

In addition to the work completed to date under the regional program, there are a number of areas identified for further development and implementation. These include:

1. *Accredited training*

Delivery of training to councils has identified strong interest from participants in obtaining VTAB accreditation of the training program. This would ensure that the training formally contributes to the professional capacity building of participants.

2. *Ongoing strategic prioritisation and investment in on ground works (eg wetland and water quality buffers)*

There exists substantial opportunity across the region to continue to invest in on ground restoration and rehabilitation works within roadside environments to improve environmental outcomes in the landscape. Notable examples include the protection or re-establishment of buffers along waterways and wetlands, ongoing protection and rehabilitation of threatened species, endangered ecological communities and habitat corridors, and the restoration of sites affected by soil erosion, salinity and acid sulphate soils.

3. *Marker scheme expansion*

Significant potential for expansion of the Regional Roadside Marker Scheme exists that would include a focus on:

- Identifying and marking additional sites of ecological significance across the region
- Expanding the focus of the scheme to include a wider range of roadside management issues (eg soil and water management)
- Further refinement of the scheme to reflect the specific needs of individual threatened species and communities

4. *Long term biodiversity monitoring*

Formal integration of roadside environments (eg roadside marker locations) and monitoring data within a broader regional biodiversity monitoring program to track ecological impacts and change over time.

5. *Critical links to broader biodiversity, corridor programs and investment opportunities*

Enhanced recognition and integration of roadside environments within broader programs that invest in the protection and management of biodiversity resources at a regional scale

More Information



W: www.hccrems.com.au

E: enviroadmin@huntercouncils.com.au

P: (02) 4978 4020

Working in Albury's Significant Environment Areas:
Presentation Paper for NSW Roadside Environment Committee Forum 2012

Introduction

In the last two and a half years, AlburyCity has been successful in raising the profile of environmental management and the importance of roadsides in connecting fragmented landscapes. AlburyCity has taken its environmental management focus beyond just roadsides however and have undertaken a process of identifying and mapping all of the areas in the Albury local government area that have environmental significance. This has become Albury's Significant Environment Areas (or SEAs).

For AlburyCity, the first step in recognising the importance of roadsides was the development of the Native Vegetation Management Plan for Roadsides, Waterways and Council Controlled Land. This process involved an assessment of the conservation value of Albury's roadsides. Roadsides were then mapped into high, medium, or low conservation value categories and a works program was developed to manage roadsides according to their conservation value.

Biodiversity Certification of the Albury Local Environmental Plan 2010

A recent effort in biodiversity conservation has been the implementation of Biodiversity Certification of the Albury Local Environmental Plan 2010. Through Biodiversity Certification, over 5000 hectares of medium-high quality vegetation is being protected and managed for environmental outcomes. Biodiversity Certification will lead to the overall maintenance or improvement of biodiversity values (including threatened species) across the whole Albury LGA. The foundation work established by the Albury LEP 2010 will assist in reversing the long term decline in biodiversity. This is reversing the trend for urban sprawl encroaching on natural areas typically associated with urban development. Biodiversity Certification has resulted in a threatened species assessment carried out for the entire Albury LGA, with significant biodiversity, threatened species habitat, and significant roadsides protected by LEP zoning.

Significant Environment Areas

Albury supports a number of distinctive natural assets, from the endangered ecological community Box Gum Grassy Woodland contained within Nail Can Hill Flora and Fauna Reserve, to the Forward Tree Plantings of Thurgoona. Albury's biodiversity assets also include a number of threatened species and threatened species habitat, remnant roadside vegetation corridors, significant trees, revegetation areas, unique wildlife, heritage conservation areas, riparian areas and the Murray River. These biodiversity assets have been mapped to comprise AlburyCity's "Significant Environment Areas" or "SEAs". Albury's SEAs include land that is managed by AlburyCity, land that is managed by other organisations (such as Crown Lands), as well as privately owned land. This reflects that biodiversity is not simply confined to management areas, but overlaps into areas of different ownership and jurisdictions. It is therefore vital that the protection of biodiversity is carried out on a landscape scale and not confined to AlburyCity managed land.

Working in SEAs

In order to fully recognise the importance of significant roadsides and SEAs in general, AlburyCity developed a standard operating procedure for carrying out works in SEAs. The SOP for Working in SEAs has been incorporated into Council's OH&S requirements. As part of filling out Safe Work Method Statements, Gangers and Supervisors are required to determine if works will be carried out in a SEA. If working in a SEA, a Checklist is to be filled out as directed, with the assistance of Council's Vegetation Management Officer and/or the Environmental Planner. All work is also to follow the associated Standard Environmental Management Measures. See attached presentation for a copy of the Checklist and Standard Environmental Management Measures. As part of the rollout of the new SOP, all outdoor staff underwent training to learn about the new procedure as well as why Albury's SEAs need to be protected and managed for their biodiversity values.

Lessons Learnt

In the implementation of the Standard Operating Procedure for Working in SEAs there were some important lessons learnt:

1. It must be supported from the top- in order to successfully implement a procedure like this there must be support from the executive management team. The best way to highlight its importance is to show staff that the directive has come from management.
2. End users must be involved in the development process- this should include numerous meetings with all stakeholders from various levels throughout Council.
3. Can't be onerous- if the SOP is to be successful, it must be useable. It has to be able to slot into work already being carried out by outdoor staff and not create unnecessary extra paperwork.
4. Practical knowledge is important- it is important to show staff that there is practical knowledge behind the procedure, that it was developed with on-ground staff in mind.
5. The use of case law is effective- staff respond well to using examples of cases that have ended up in the Land and Environment Court and how it relates to them.
6. Provide assistance to Gangers- this is perhaps the most important part. If a SOP is to be successful, environmental managers have to be prepared to provide expert assistance to the Gangers whenever it is required. Outdoor staff cannot be expected to make environmental based decisions alone and should be supported in this regard. Everyone must be committed to a successful implementation of any SOP regarding environmental outcomes.

Next steps for AlburyCity

In order to ensure that the Working in SEAs SOP remains effective, it is important to undertake a regular review process. AlburyCity has recently reviewed the coverage of the SEA map with input from internal staff as well as members of the public and community groups. The next step will be to review the SOP and supporting documents. This will be done through Gangers and outdoor staff to determine efficiencies or inefficiencies of the procedure and ensure that it remains user-friendly and does not become onerous.

AlburyCity will also be contributing to a working group facilitated by the Murray Catchment Management Authority to share procedures, ideas and lessons learnt with other councils in the area that may not have the capacity to incorporate environmental management into daily works to this extent.

It has proved important to implement procedures such as this for various reasons including meeting environmental statutory and legislative requirements. It has also been instrumental in securing funding grants for restoration and rehabilitation projects such as AlburyCity's current NSW Environmental Trust funded project Restoring EECs on Albury's roadsides.

For more information please feel free to contact AlburyCity's Environmental Planner:

Rachel Clancy

PO Box 323 Albury NSW 2640

rclancy@alburycity.nsw.gov.au

Ph: 02 6023 8108 or 0447 241 331

NSW Rural Fire Service Paper – Roadside Environment Committee Forum 2012

The NSW Rural Fire Service (RFS) provides an informative website on bush fire management in NSW. There is a vast array of information on this website and all members of the community are encouraged to visit the site and become familiar with bush fire safety.

The RFS website can be located at www.rfs.nsw.gov.au. Below, is a sample of key topics that can be found on the website.

Current Operations provides information on:

- Current fires and Incidents;
- Major fire updates;
- Planned hazard reduction burns;
- Also information on ‘what to do if fire approaches’.

Prepare. Act. Survive. for bush fire season provides information on:

- Bush Fire Survival Plans;
- Prepare (yourself, family and property);
- Act (including information on Fire Danger Ratings, and Bush Fire Impact);
- Survive (what to do when there is a fire in your area including where to get information);
- Grass Fires;
- Summer Safety (including tips for travellers).

Total Fire Bans and Permits provides information on:

- Total Fire Bans and Current Fire Danger Map;
- Total Fire Ban rules;
- Fire Permits and Bush Fire Danger Period;
- Where are Fire Permits required;
- NSW Fire Areas.

For the Community is dedicated to providing a wide range of advice for the community, including residents in bushland suburbs, farmers, landholders and residents with holiday homes. Topic headings include:

- Bush Fire Survival Plans;
- Fire Safety;
- Preventing Bush Fire Arson;
- Bush Fire Hazards;
- Building in a Bush Fire Prone Area;
- Neighbourhood Safer Places;
- Bush Fire Risk Management Planning;
- Assistance for Infirm, Disabled and Elderly Residents (AIDER);
- Hotspots Project;
- Bush Fire Information Line.

Publications provides access to a range of documents such as:

- Fire Safety Information (there is a large array of fact sheets here for home, chemicals, leisure and recreation, business, and students and teachers);
- Building in a Bush Fire Prone Area;
- Hazard Reduction (there are booklets here on how to apply for a free bush fire hazard reduction certificate – environmental approval, what you need to know before you light that fire and other important information);
- Law and Policy (includes the Bush Fire Environmental Assessment Code, and information on threatened species and Aboriginal heritage).

About us, provides a range of general information about the NSW Rural Fire Service including organisational structure and our role. Use 'Contact Us' to find your nearest Fire Control Centre. RFS staff will be able to provide advice on matters related to the RFS website and bush fire management generally.



NSW Linear Reserve Environmental Management Forum

Future directions and forum de-brief



Issues Identified

Issue	No. of Comments
Management of introduced species (weeds)	32
Connectivity and corridors	22
Need for coordinated approaches	22
Capacity of roadside environment managers and operation staff	20
Community and stakeholder education and involvement	17
Managing conflicting priorities (including road safety and utilities)	16
Threatened Species / EEC management	12
Identification of important sites and habitat	11
Fire management	10
Protection of environmental values	10

Further Information

Forum proceedings to be emailed to participants

NSW REC website

www.rta.nsw.gov.au/environment/roadsideenvironcommittee/index.html

NSW REC Newsletter



2012 NSW Linear Reserve Environmental Management Forum – Feedback

The forum appears to have been very well received by participants who attended and filled out the feedback form. Forty-seven feedback forms were submitted, with a summary of the quantitative and qualitative results shown below.

The Forum achieved its objective of promoting knowledge of the REC and its roles. Most respondents acknowledged that the forum increased their awareness of the REC, with the majority of all others stating that they already had a good knowledge of the REC and its roles.

Participants enjoyed many aspects of the forum with the opportunity to network, presentations (both keynotes and best practice case studies), workshops and Q&A panel all identified as positive features. Several participants identified updating their knowledge of linear reserve management, particularly the science, as an important feature of the forum.

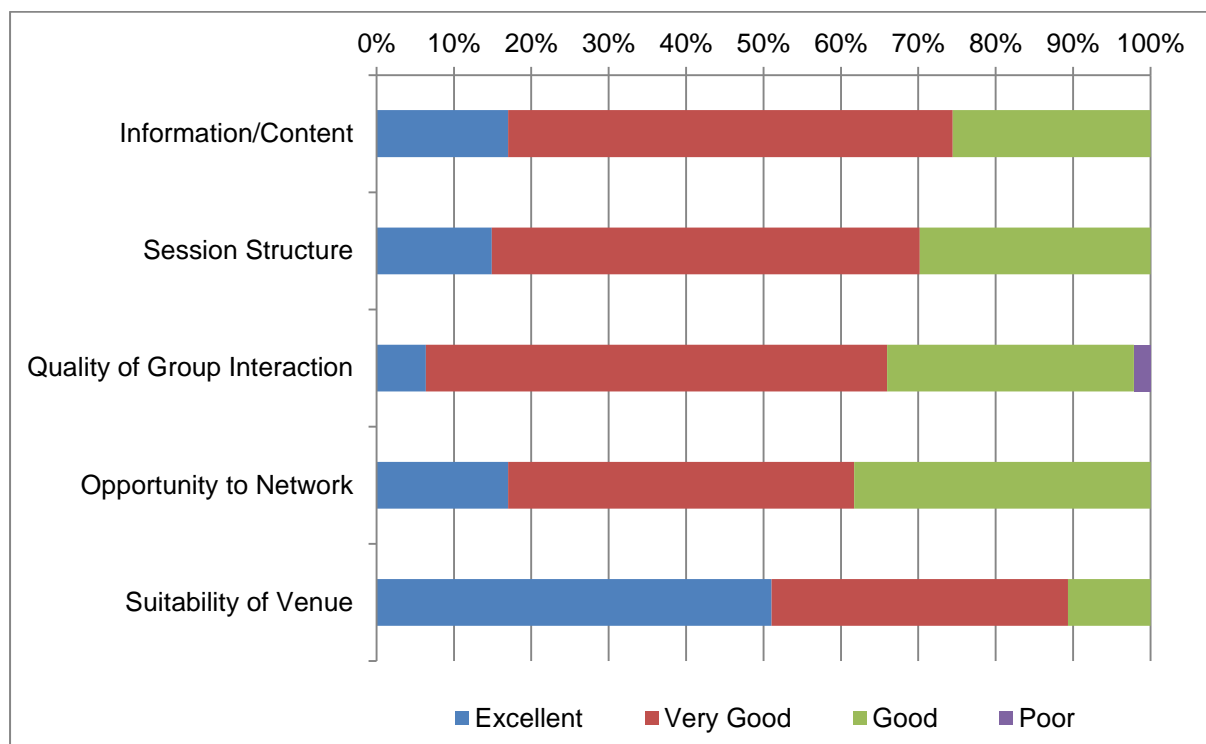


Figure 1: How did you rate the forum overall?

Specific aspects which participants identified could be improved included:

- workshop scenarios – some thought they were too prescriptive, others wanted more direction, some stated they didn't learn much from this session.
- name tags – text size was too small, inhibiting targeted networking
- start time – a later start time (e.g. 9:30) was suggested by some as it was difficult to make it in time for regional participants

Participants identified several areas where they would like further information. These included information on funding sources, availability of resources (e.g. mapping data, RMS guidelines, REF guidelines) and further information (case studies) on regional approaches and linear reserve environmental management in urban landscapes.

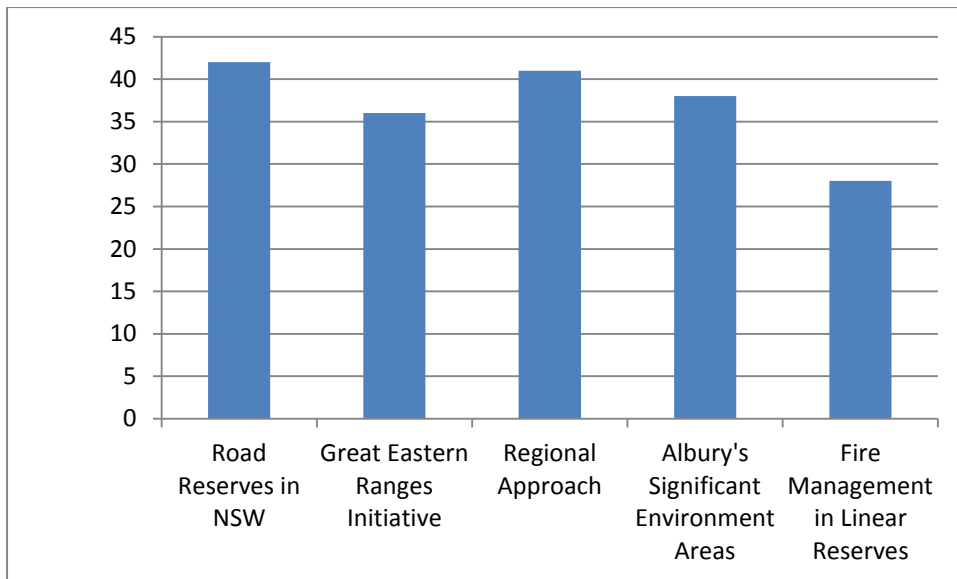


Figure 2: Number of respondents finding each presentation interesting/useful

A number of respondents suggested they would like to receive contact details of participants and presenters to increase their networks.

An overwhelming majority of those present in the final session indicated they would like to see another forum planned in the future. Some suggested the forum visits regional centres and suggestions were made regarding potential specific topics for more targeted forums in the future.



Figure 3: Word cloud of phrases used to describe forum (size of word reflects number of responses)