

Murrumbidgee (Riverina 2) Bioregion Case Study Summary

Description

The Murrumbidgee subregion covers an area of approximately 3,045,600 ha, and lies within the Western Riverina region in the south-west of NSW. The Murrumbidgee River dissects this subregion from Narrandera in the east to Balranald in the west, near the confluence of the Murray and Murrumbidgee Rivers. The town of Hay lies around the centre of the subregion. The area has a semi-arid climate characterised by hot summers and cool winters.

A wide range of vegetation communities occur in the subregion, some of which are unique to the Riverine Plain of NSW, with a support a diversity of species, including several endangered species. The Murrumbidgee subregion also contains extensive wetland areas including the Lowbidgee Floodplain wetland, the most extensive wetland in the Murrumbidgee catchment.

Land in the subregion is a mix of freehold and leasehold tenure. State Forest comprises less than 1% of land in the subregion and is focused along the Murrumbidgee River. Two north south trending Travelling Stock Routes (TSRs) between the Murrumbidgee and Niemur Rivers comprise about 1.2% of land in the subregion. The subregion is a highly productive agricultural area, particularly those irrigation areas adjacent to the Murrumbidgee River. There are several large irrigation developments for rice and horticultural crops. Sheep grazing, on native pastures is, by far, the dominant landuse in the subregion at 84% with approximately 6.8% of land under irrigated cultivation. Slightly less land is used for unirrigated or dryland cultivation, predominantly in the east of the province.

Condition/Status and Trend

Within the Murrumbidgee subregion 25% of land has been cleared of native vegetation. Clearing in the Riverina has occurred mostly on floodplains where the landscape is flatter, soils are fertile and access to water is good. Compared to the whole bioregion, the Murrumbidgee subregion still retains areas of continuous native vegetation cover, as rainfall is lower and access to water is more restricted. This is reflected in the Land Capability Mapping which shows the subregion as having limited areas of high land capability. This has restricted the use of land for permanent cultivation however land degradation and loss of understorey vegetation through overgrazing is widespread in the subregion.

The Murrumbidgee subregion has been given a Continental Stress Class of 5, the second highest stress class ranking. In general, condition is better to the west of the subregion, with native vegetation in the eastern portion more fragmented. However, recent vegetation clearing information indicates that clearing rates are increasing to the west, and a 'new frontier' of clearing is expanding across the Riverina as it is along the Western Division boundary.

Threatening Processes

The impact of land use has been an extensive modification of the natural distribution and condition of vegetation cover, both through direct clearing and cropping as well as by grazing. Access to water for irrigation has allowed intensive agricultural production on lands adjacent to the Murrumbidgee River. In turn, the modification of the river systems to support intensive agriculture has resulted in altered hydrological regimes, water logging, salinity, land degradation, vegetation decline and fragmentation.

One of the great historical impacts to the subregion's biodiversity was the massive proliferation of rabbits from the 1870's. This, combined with the droughts of 1883-85 and 1890-95 and overgrazing, severely reduced the extent and condition of many species, especially grass and herb species as well as those fauna species dependent on saltbush and grassland.

The selective nature of grazing animals (both sheep and rabbits) resulted in a change in the composition of native plant species. Trampling by domestic stock, weed invasion and conversion of native grasslands to improved pastures or crop all present major threats to many grassland species.

The fragmentation and degradation of woodland habitat in the subregion has threatened a number of species and ecosystems. Connectivity of woodland habitat is important for species that have a limited range and do not tolerate disturbance around their nest sites. Illegal egg collection and trapping for the bird trade has impacted greatly on species parrot species.

Management Responses

The landscape of the Murrumbidgee subregion, and the Riverina bioregion, has been highly modified by agriculture, which has in turn restricted the extent of native vegetation. The vegetation types that are reserved are not representative of the diversity of vegetation types that exist within the subregion, and are biased towards a few vegetation types.

Within the subregion there are currently three major planning process that have potential to assist reserve system design, namely:

- Riverina Bioregional Conservation Planning Project
- Expert Panel
- Regional Vegetation Committee

There are currently four species recovery plans underway in the Murrumbidgee subregion; three for bird species the Plains-wanderer, Superb Parrot, Regent Parrot and one orchid *Caladenia arenaria*. While draft recovery plans have not been exhibited for these species the types of off-park conservation required is well documented. Cost and recovery targets have yet to be set for these species, however these details will be available with the release of the draft recovery plans.

Given the impediments to establishing a CAR reserve system all options to increase nature conservation on private land should be investigated and pursued. The schemes that could be implemented in the subregion include;

- Voluntary Conservation Agreements (NPWS Act). Further opportunities for VCA's should be pursued. These agreements are permanently binding on the land title and offer

funding assistance and possible tax deductions as well as advice and support from NPWS staff.

- Wildlife Refuges (NPWS Act). Another voluntary mechanism. This is temporary however also has some general legal requirements governing the management of the land while the refuge remains in place. It again offers the opportunity for advice and support from NPWS staff.
- Property Agreements (NVC Act). These agreements may be permanently or temporarily binding. Technical and management advice is provided and funding assistance may be provided depending on the length of the agreement.
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A new incentive mechanism, currently being formulated, that may be particularly applicable to the Murrumbidgee subregion is the NSW Conservation Trust Revolving Fund program. The Fund will provide incentives for landholders to protect areas of high conservation value on private property through the operation of a revolving fund to compensate for the loss of productive land.

Limiting Factors

The poor reservation status of the both the Murrumbidgee Subregion and the Riverina Bioregion is a consequence of several factors, namely:

- The historical lack of systematic state and region wide conservation reserve planning;
- The lack of political and public appeal of semi-arid ecosystems for any use other than agriculture;
- The limited availability of Crown land for incorporation into the reserve system; and
- The limited opportunity to purchase land due to the high costs involved.

Another key impediment for achieving better biodiversity outcomes in the sub-region is the overall lack of strategic coordination between government agencies, and between agencies and the private land owner communities. In addition to the lack of overall coordination, these programs are not adequately resourced with funds targeted to provide a systematic biodiversity information base to make biodiversity conservation a key factor in subsequent planning, and they do not include a clear bioregional assessment requirement. There are currently a plethora of target setting processes being undertaken by various agencies and groups for NSW landscapes. These diverse, and at times competitive, targets exercises do not necessarily relate easily to the overall achievement of landscape conservation outcomes. Without a clear, agreed articulation of what the broad landscape conservation goals are, it is a matter of faith that the total effect of these separate exercises is greater, rather than lesser, than the sum of their parts.

Future Scenarios

Some significant gains in biodiversity conservation are expected to be made arising from the Riverina Bioregional Conservation Planning Project and the Expert Panel input into this process. However, overall, the current levels of degradation and loss of biodiversity will continue without considerable improvement in delivery of biodiversity conservation programs. It should be noted that the Plantations Code of Practice and the Interim Regional Vegetation Schedule for the Riverina Highlands RVMP area will allow for a further clearing of 40% of Yellow Box Woodland and 40% of White Box

Woodland without consent as part of the Government's drive to encourage farmers to establish plantations at minimum cost.

A coordinated program should be established, within the context of conservation within the whole sheep-wheat belt. Such a program would consist of:

1) a program to fully inform decision making processes of status and condition of biodiversity at all levels from the region, to NRM committees, Landcare and other management groups and at the property level.

2) an expansion of existing programs that increase the area being formally and informally managed for conservation. This requires funding for the integrated landscape conservation network and conservation management network models. In addition, biodiversity assessment and planning should be accelerated, as articulated in the existing State Biodiversity Strategy, but can be applied at a range of scales from the region to the farm plan.

3) development of support programs that integrate conservation into land management and provide management information across the landscape. To make the support programs more effective we need to;

- Get to know the stakeholder groups better,
- Improve our frameworks for providing assistance to land managers and community groups. Assistance needs to be a commitment and partnership over the long-term rather than through short-term programs. Resources are required for extension staff, financial assistance for activities such as weed control, and educational material.
- Understand well the patterns and condition of biodiversity at various scales,
- Improve our knowledge of management, particularly restoration ecology,
- Undertake conservation analysis at the range of scales.

The relative degree of conservation efforts currently being applied and what might be required in the future to achieve biodiversity outcomes are depicted in Figure 1, below. The diagrams are indicative only.

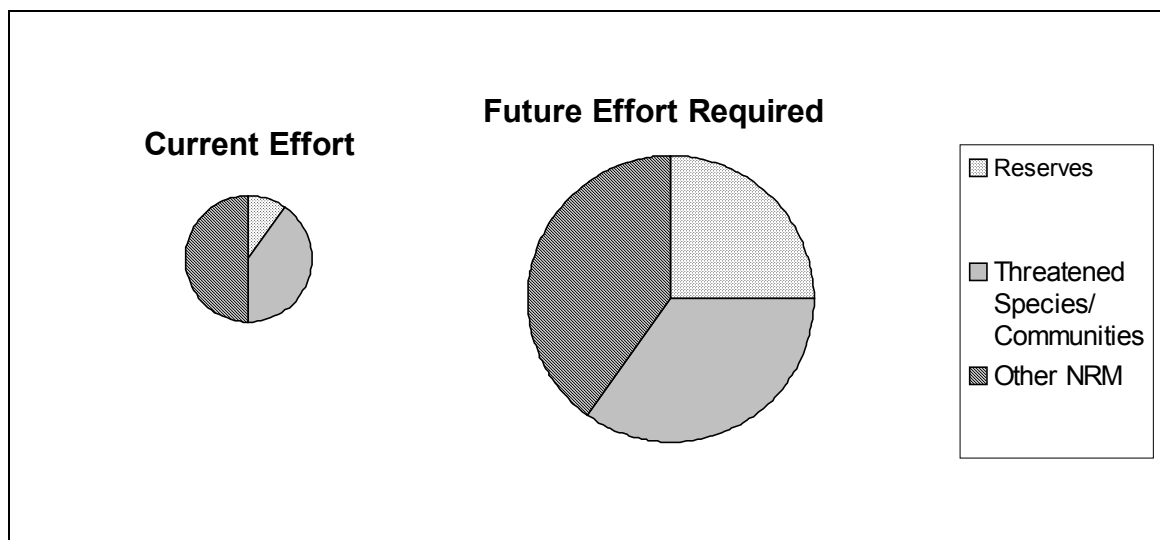


Figure 1. Relative efforts required for biodiversity conservation