Integration of Biodiversity Conservation in Regional Natural Resource Management Planning

Rural Case Study

North Central Catchment Management Authority Biodiversity Program

***State*:** Victoria
***Region*:** North Central

Affiliated Regional NRM group: North Central Catchment Management Authority (NCCMA).

Background

The North Central region is one of ten Catchment Management Authority (CMA) regions in Victoria. It comprises an area of almost three million ha, approximately 13% of the State of Victoria. The region extends from the Great Dividing Range in the south to the Murray River in the north, a distance of up to 280 km. Generally, the region's climate is Mediterranean, with cool and relatively moist winters and warm dry summers.

Past and present land use practices, particularly those associated with agricultural development, and in some areas, gold mining, have seriously diminished the natural environment of the North Central region. Eight bioregions are represented within the North Central region. Native vegetation in particular is poorly represented in all but the Central Victorian Uplands, Goldfields and Murray Fans bioregions. Although 12.7% of the region retains native vegetation coverage, many ecological communities retain less than 1% of their original distribution. Woodlands and grassy woodlands, which occupied the areas most readily developed for agriculture, are again poorly represented. Nonetheless, the region retains some of the most extensive box-ironbark and river red gum forests in the State.

The region now has 100 species of native animals and around 300 species of native plants threatened by extinction as a result of decreases in habitat extent and quality due to agricultural and urban development, weed invasion and impacts from pest animals, mining and changing water regimes.

The North Central Biodiversity program has developed rapidly since 1998 when the first Regional Catchment Strategy highlighted the importance of biodiversity conservation as a key element of achieving catchment health outcomes. Pivotal to the success of the program has been appointment of a Biodiversity Manager within the NCCMA to support the development of a collaborative approach across all NRM partners in the region.

The aim of the program

The primary goal of the NCCMA is to ensure the protection and restoration of land and water resources, the sustainable development of natural resources-based industries and the conservation of natural and cultural heritage.

The aims of the Biodiversity Program, which are subsets of this primary goal are:

- To protect, enhance and re-establish native vegetation.
- To manage the Federal Bushcare program at regional level.
- To improve the community's ability to manage native vegetation and flora and fauna.

Direction for the Program:

Victorian Biodiversity Strategy

The Victorian Biodiversity Strategy released in 1997 provided a bioregional framework for responding to the challenge of managing and restoring biodiversity. Importantly the strategy reinforced the need for a landscape approach, involving planning and coordination of effort across all land tenures. In particular it identified agricultural landscapes as a focus for biodiversity conservation, and that a key management approach was “to integrate catchment management into the planning framework to achieve sustainable development of natural resource-based industries and the conservation of biodiversity”.

Victorian Native Vegetation Framework

The associated Regional Native Vegetation Plans affirm this direction and identify that the conservation of native vegetation and habitat in a landscape is dependent on the maintenance of catchment/ecological processes which provide productivity, salinity, water quality and other land management benefits. The North Central Native Vegetation Plan directs this maintenance in the North Central Region.

Bioregional Plans

Bioregional Plans have been developed for each of the eight bioregions across North Central. These plans translate the statewide biodiversity strategy to the regional scale, and provides the foundation for producing landscape-scale biodiversity action plans to direct on-ground works by private landholders, community groups, corporations and all levels of Government, with the ultimate aim of achieving broad scale conservation of native biodiversity across the region. However, plans at a bioregional scale must translate into management at the landscape scale if they are to be adopted and acted upon by local communities of landholders and land managers. The North Central Biodiversity Program team have devised a number of mechanisms for carrying out this translation. These are outlined in the Mechanisms section below.

Achievements of the program to date

Highlights of the program's achievements to date are:

- Establishment of Regional Vegetation/Biodiversity Forum.
- Local Government Biodiversity Incentive Programs developed and implemented across 6 Local Government Authorities. Local Government Authorities in the region will also be using the Biodiversity Risk Mitigation Protocols outlined below by the end of 2003.
- Implementation of major on-ground works projects that protect, enhance and restore biodiversity across priority bioregions as identified through the process of Ecological Vegetation Class mapping and prioritisation.
- Mapping and benchmarking of all implementation projects using the Biodiversity Monitoring Framework outlined below.
- Successful implementation of new approaches including Bush Tender and Environmental Management Systems both of which are outlined below.

Mechanisms:

The following mechanisms are outputs of North Central's Biodiversity Program that translate the direction outlined by the State Biodiversity Strategy into landscape scale knowledge that can be acted upon at the local level.

Ecological Vegetation Class mapping

Ecological Vegetation Classes (EVCs) are to be used in Regional Catchment Strategies and their associated Regional Native Vegetation Plans to describe native ecosystems. They are critical in the consistent and targeted application of regulatory and investment processes. EVCs are the basic mapping units used for vegetation and biodiversity planning and conservation management at the regional scale in Victoria.

In order to determine the extent of depletion of vegetation types within the catchment and to provide a basis for developing guidelines and landscape-scale scenarios for re-establishment of native vegetation, the distribution of each vegetation type prior to European settlement (pre-1750) must be estimated. This estimation is achieved using information from existing remnant vegetation, climate and related mapped information such as altitude, landform and soils/geology. "Pre-1750" EVCs are modelled and mapped on cleared land using the above information sources.

This project was undertaken collaboratively with the Mallee and Wimmera CMA's with the NCCMA responsible for overall project management. Draft pre-1750 and extant mapping has been produced has been incorporated into the Regional Vegetation Plan. This has enabled determination of bioregional conservation status for all EVC's across the CMA area. This ranking system for of bioregional conservation status enables land managers and regional planners to make decisions for priority action based on empirical evidence relevant at the local scale.

Biodiversity Risk Mitigation Protocols

NRM programs and projects, such as those defined in Victoria's Regional Catchment Strategies, include a range of on-ground works that will alter the natural environment at local and regional scales. Many programs focus on delivering specific outcomes, such as a reversing the trend of increasing land

and water salinisation. But sometimes there are risks in proceeding with these programs of work. There may be hazards to local and regional environmental assets, such as the aquatic and terrestrial biodiversity of the land, waterways and wetlands. Historically, programs of work have tended to be approved with little or no assessment of risks to native biodiversity.

Now, the view is that the pursuit of salinity and water quality targets, for example, must not compromise the nature and values of regional biodiversity. Indeed, where possible, programs should contribute to enhancing native biodiversity and environmental values. For these reasons, *Biodiversity Risk Mitigation Protocols* have been prepared. The protocols aim to assist those developing and assessing NRM programs to identify the nature of potential impacts on native biodiversity and to develop appropriate mitigative measures. Furthermore, a number of processes and tools already exist at local, regional, state and federal levels to help manage biodiversity, and the protocols have been designed to complement and employ those tools.

The 'biodiversity risk mitigation protocols' are a form of constructive intervention, designed to assist program planners and evaluators to identify, understand and avoid threats to native biodiversity, and wherever possible to enhance native biodiversity. The protocols are intended to be useful to the staff of catchment management authorities, local councils, State Government agencies, and potentially other community-based groups.

Biodiversity Monitoring Framework

The Mallee, Goulburn Broken, North Central and North East CMA's are currently collaborating in the development of a monitoring framework for biodiversity. Historically monitoring programs have been inadequate in providing information on specific catchment trends. This has presented difficulties when trying to assemble and analyse the data needed to produce the Catchment Condition Report. This project will provide an enhanced level of information on catchment condition and associated trends by providing a framework to enable coordination and enhancement of existing monitoring programs, so that the achievements of landscape outcomes identified in the Regional Catchment Strategy can be demonstrated. In particular the framework will:

- document & analyse existing monitoring relating to biodiversity in the four Catchments.

- develop a standardised format for a biodiversity monitoring framework aligned with other asset class monitoring frameworks in the RCS for the four CMA's mentioned, that could later be applied elsewhere
- develop practical ways to gather, record and use the information collected from the monitoring that, where possible, fit in with existing processes.

Biodiversity Modules for EMS

The EMS process involves farmers progressing through the following phases: initial environmental review, developing environmental policy, identifying environmental aspects and impacts of the business, setting goals and developing action plans for improvement. Each farm produced a biodiversity report for their farm and an EMS to enable them to continuously improve their environment. This project achieved significantly increased levels of knowledge of natural resource management issues amongst the participating farmers by translating regional scale goals into objectives for use in on-farm environmental management.

Bush Tender

Bush Tender is a new process being used by the NCCMA to assist landholders wishing to improve the quality and extent of native vegetation on their land. The Bush Tender process begins with a site visit by a Bush Tender field officer. The field officer assesses the significance and quality of the native vegetation and discusses management options with the landholder wishing to enter into a management agreement with the regional body. Whilst on the site the field officer scores the habitat management services being offered by the landholder based on the discussed management actions. Later the field officer prepares a draft management plan based on the proposed landholder management actions and forwards this to the landholder for consideration

The landholder is also provided with a site conservation score (how important is their site) and their habitat management services score (how much service is the landholder providing) to assist them with preparing a bid. It is then up to the landholder to determine the payment they require to undertake the proposed management actions which she/he then submits a sealed bid.

The bids are then assessed on the basis of:

- current site conservation value:
- amount of service offered;

- cost.

Successful bidders sign three-year management agreements based on previously agreed management plan.

Critical Success Factors

The achievements above have been enabled through the successful inclusion of biodiversity conservation considerations throughout NRM planning activities in the North Central Catchment. The following six factors have enabled this to occur:

1. *The catchment Board that established biodiversity conservation as a high priority was made up entirely of community members.*

2. *The catchment Board had a high level of knowledge and capability to deal with natural resource management issues such as biodiversity conservation*

3. *The catchment Board was given access to additional levels of funding that directed and enabled the achievement of their goals as well of those of the broader community.*

4. *The region had built up a good knowledge base about natural resource assets and trends in their condition.*

5. *A number of key individuals at a range of levels worked in partnership to achieve the consideration of biodiversity catchment planning.*

6. *Staff for the NCCMA are sourced from a labour base that has a high capability.*

These factors are expanded upon below.

1. The catchment Board that established biodiversity conservation as a high priority was made up entirely of community members.

Having biodiversity conservation effectively integrated into regional planning relies on an 'evolutionary stage' in which regional NRM groups actively involve a range of stakeholders over an extended period of time in order to build trust and decision making abilities (Lowe et al. 2003).

Community involvement in natural resource management planning was fundamental to the implementation of management objectives. The experience in

the NCCMA reinforces the importance of support for conservation activities being provided from a wide cross-section of the community.

2. ***The catchment Board had a high level of knowledge and capability to deal with natural resource management issues such as biodiversity conservation.***

Regional communities need considerable time to understand the purpose of regional scale vegetation planning and management, to identify priorities and then develop management plans that have broad agreement (Williams 2000).

The board was responsible for making this assessment. This ability to analyse the landscape and make assessments was fostered within the catchment board through a long history of planning and action. For example, in 1988 the NCCMA identified the specific problem of salinity and set about addressing it by creating the Loddon Dryland Salinity Plan and carrying out the actions contained within. There are a number of other examples of how capacity has been built up within the catchment over a number of years. These are in the form of other vegetation and water management plans. The development and execution of such programs gave people involved in the catchment a good understanding of processes such as ecosystem function and community dynamics.

3. ***The catchment Board was given access to additional levels of funding that directed and enabled the achievement of their goals as well of those of the broader community.***

The costs of conserving remnant native vegetation may outweigh the on-farm cash benefits and it as it is in the interests of society as a whole to fund conservation cost sharing between a range of stakeholders is critical to biodiversity conservation (Lowe et al. 2003).

These funding sources facilitated the development of planning and action skills. Examples of these funding sources include the National Action Plan on Salinity and Natural Heritage Trust programs such as Bushcare.

4. ***The region had built up a good knowledge base about natural resource assets and trends in their condition.***

High quality data can show the connections between biodiversity, habitat protection, human health and the economy (Cohn and Lerner 2003).

Generally, one of the key requirements of additional funding sources was to define the assets to be protected, the nature and extent of threatening processes acting on those assets. The primary purpose of this was to link the activities to be funded to the achievement of clear resource condition outcomes.

But a secondary outcome of these requirements was the collection of large amounts of information on resource condition trends that enabled the catchment Board to make the assessment that biodiversity assets were highly threatened and depleted. This information is collected as GIS databases that are stored in spatial information tools. These tools are used for the practical conservation of biodiversity and the planning and achievement of other management objectives.

This knowledge base increased the NCCMAs ability to gain access to further funding allocations through programs such as the Natural Heritage Trust and the National Action Plan for Salinity. This allows the knowledge base to be continually updated and expanded that in turn enhances the power of the spatial information tools as management tools. This self-perpetuating process was described as essential.

5. A number of key individuals at a range of levels worked in partnership to achieve the consideration of biodiversity catchment planning.

The presence of leaders and champions who drove change was found to be a key to successful regional natural resource management (Lowe et al. 2003)

Cross-institutional partnerships were aided by well-defined roles and responsibilities. Partnerships were formed across groups such as landholders, government agencies, the NCCMA and non-government organisations such as the Trust for Nature and Greening Australia. These partnerships spread

6. Staff for the NCCMA are sourced from a labour base that has a high capability.

The key to successful regional approaches to natural resource management is to bring together the biophysical knowledge system with the human knowledge system and develop approaches to change the way people interact with the landscape (Lowe et al. 2003).

Victoria is a small State so there are a relatively small number of people involved in NRM within a given region. But Victoria has a high population density.

Therefore sourcing staff for a small number of positions from a large population that have good access to educational facilities will lead to a high level of capacity in the people filling those positions.

Conclusions

These Critical Success Factors did not exist independent of each other. It is the interplay between these critical success factors that produce a positive biodiversity outcome.

1.Community concern, initiative and involvement in biodiversity conservation issues has a significant influence on the success/failure of the incorporation of biodiversity conservation into planning.

2.A high level of understanding/knowledge of biodiversity conservation is best utilised when supported by funding to develop action and planning skills. As the NCCMA knowledge base increased, so too did there access to funding which in turn enhances information and management tools and sees the knowledge base being continually updated.

3.High capacity NCCMA staff, cross institutional partnerships and the spread of partnerships serve as drivers for the incorporation of biodiversity conservation into planning.

4.Ensuring that biodiversity conservation is not undermined by other conservation outcomes requires protocols in future planning activities.

Further information

North Central Regional Catchment Strategy, 2003
www.nccma.vic.gov.au

Geoff Park
Biodiversity Manager
North Central Catchment Management Authority
PO Box 18
HUNTLY 3551

628-634 Midland Highway
phone (03) 5448 7124
fax (03) 5448 7148
email: geoff_park@nccma.vic.gov.au

References:

Cohn J,P. & Lerner, J.A. (2003) *Integrating Land Use Planning and Biodiversity: Workshop Discussion*. Defenders of Wildlife, Washington D.C. in Lowe,K. Fitzsimons, J. Gleeson, A.R. and Straker, A. (2003) *Biodiversity Conservation and Natural Resource Management Planning: Mechansisms for Improved Integration at the Regional Level*. Unpub.

Lowe,K. Fitzsimons, J. Gleeson, A.R. and Straker, A. (2003) *Biodiversity Conservation and Natural Resource Management Planning: Mechansisms for Improved Integration at the Regional Level*. Unpub

Williams, J. (2000) *Managing the Bush- research findings from the LWA National Remnant Vegetation Research and Development program.* Research report 4/00. Land and Water Australia, Canberra. In Lowe,K. Fitzsimons, J. Gleeson, A.R. and Straker, A. (2003) *Biodiversity Conservation and Natural Resource Management Planning: Mechansisms for Improved Integration at the Regional Level*. Unpub

Case Study prepared by Synapse Research & Consulting *&* Associates, August 2003 as part of Natural Heritage Trust Funded Project: "Pathways for Biodiversity Conservation"

Synapse Consulting
PO Box 3746
South Brisbane Qld 4101
Telephone: 07 3844 2370
Email: syncons@ozemail.com.au
www.synapseconsulting.com.au