

REGIONAL NRM PLANNING IN AUSTRALIA



WHAT IS IT? WHERE IS IT HEADING?

National NRM Regions' Working Group

© National NRM Regions Working Group

This report was developed by a sub-committee of the National NRM Regions Working Group. Its members were: James McKee (chair), Francesca Andreoni, Mike Berwick, Jane Chrystal, Andrew Drysdale, Angus Hume, Annie Lane, Damien Postman, Carolyn Raine and Sarah Ryan with support provided by Danny O'Neill.

We acknowledge valuable additional input and comment from: Paul Ryan, Nick Abel, Daryl Low Chow and Norbert Vogel.

Financial assistance from the Australian, State and Territory Governments helps support the activities of regional NRM organisations and the National NRM Regions Working Group, and is gratefully acknowledged.

Citation:

Ryan S, O'Neill D, Chrystal J and McKee J (2013) *Regional NRM Planning in Australia. What is it? Where is it heading?* National NRM Regions Working Group, Canberra.

Contact:

Danny O'Neill, Executive Officer, National NRM Regions' Working Group

danoneill@bigpond.com

REGIONAL NRM PLANNING IN AUSTRALIA

WHAT IS IT? WHERE IS IT HEADING?

Contents

EXECUTIVE SUMMARY	2
INTRODUCTION	5
Purpose of the report	5
Foundations of ‘Natural Resource Management’	5
WHAT IS A REGIONAL NRM PLAN?	7
NRM regions and NRM organisations.....	7
Legal status of regional NRM organisations and their plans	7
Purpose and scope of plans.....	9
Purpose	9
Scope	10
Conceptual frameworks and plan structures	10
Conceptual frameworks.....	10
Plan structures	12
Alignment of goals across sectors and scales.....	12
Targets	13
Planning processes	15
Community and stakeholder involvement.....	15
Summary of core characteristics of a regional NRM plan.....	18
BEST PRACTICE PRINCIPLES	19
By regional NRM organisations.....	19
By state and national governments.....	19
WHAT’S WORKING WELL	20
Wider recognition of the value of NRM plans and their use at the regional scale	20
Increase in government leadership, of an appropriate kind	21
Opportunities for innovation.....	21
An active national network of the regional NRM organisations.....	22
... AND WHAT REMAINS A CHALLENGE?	22
Developing frameworks for achieving integration of NRM components in plans (with ‘informed simplicity’)	22
Incorporating carbon mitigation actions and adaptation to climate change into plans.....	22

Growing the capacity to deliver a high standard of planning	23
Interactions with other natural resource and land planning activities	23
At state and national scale	23
At regional scale	23
At local scale	24
Community engagement	24
Completing the adaptive management loop	25
FUTURE DIRECTIONS.....	26
Signals of change.....	26
Established trends.....	26
Emerging trends.....	26
On the horizon	26
Planning forward	27
REFERENCES.....	28
APPENDICES.....	30
Appendix 1. Weblinks to current regional NRM Plans	30
Appendix 2. Principles guiding the development of regional NRM plans under the Regional NRM Planning for Climate Change Fund.....	33
Appendix 3. Principles for a healthy NRM governance system in Australia	34
Appendix 4. Links to descriptions of state based regions for planning purposes.....	36

EXECUTIVE SUMMARY

The report is an initiative of the National Natural Resource Management (NRM) Regions' Working Group, which is the national representative group of all regional NRM organisations around Australia. Regional NRM planning is a core responsibility of these organisations and as an initiative that began less than fifteen years ago, its practice is still evolving. In addition, there is no national agreement between governments about what regional NRM plans have to achieve, and there is considerable diversity across the country in the nature of the plans.

This report describes the basic characteristics of regional NRM plans and how they relate to other planning activities. It explores their strengths and the challenges that lie in improving them, proposes a set of best practice principles, and suggests some priority actions for their future development.

Three core characteristics, or underpinning objectives, are widely shared by NRM plans across the nation, whether specified by State or Territory governments, or defined by community-based NRM organisations:

- With the underpinning aim of **sustaining the natural resource base for future generations**, the plans take a long view into the future. They recognise that landscape change can be slow, but that clear guidance is needed on the priority actions that need to be taken now. The plans therefore also spell out intermediate objectives and clear pathways from the present to the future.
- The plans are **highly integrative**. They involve all land uses and their socio-economic values across their regional landscapes, and they take into account the ecological interactions that influence natural resource outcome. In this way the plans are distinguished from, but complementary to, those that deal with single industries, single issues or single natural resources.

- The plans are **built with broad stakeholder and community involvement** so that they reflect local knowledge and aspirations, gain local credibility, commit local organisations to a role in implementation and empower local communities to be involved. The broad directions for each plan come from relevant overarching plans and strategies at higher scales so that the result is an alignment of interests and opportunities across multiple scales.

Our experience in satisfying these objectives in a complex planning process suggests the following set of 'best practice principles'.

In the regional NRM organisations:

- **Good leaders and committed staff** with the right complement of skills. These are helped generally by rigorous Board appointment processes and support and incentives for excellence, and when it comes to planning, appropriate resources to devote to the planning task
- **Good community and stakeholder relations** that are maintained regularly and not just instituted at 'planning time' every 3-5 year intervals. This is helped by having a planned, segmented approach to community engagement, and construing it as a wider activity than marketing and communication
- **A structured approach to obtaining, maintaining and using knowledge.** Regional support for the plan, the confidence of investors, and the capacity to adapt to new knowledge and challenges, depends on the evidence base for the plans being transparent and logical.

In governments:

- A practice of **subsidiarity**, or devolving the aspects of planning that depend on regional relationships and regional knowledge to the regional level. At the same time, aspects that are best done at a higher scale, like expression of state and national level objectives for regional NRM planning, must also be done.
- A **partnership** approach with regional NRM organisations that involves good relationships, open consultation and mutual respect for the different contributions each type of organisation makes to achieving complex outcomes.
- **Changes in NRM planning requirements that evolve slowly over time** and that are based on learning and periodic critical review.
- Using their mandate to have regional NRM **plans used for multiple purposes.**

Reflecting on the wider NRM planning system, we define a set of attributes that have established a trajectory in the right direction and now need encouragement, monitoring and maintenance rather than targeted development. These are:

- There is a wider recognition of the value of NRM plans and the niche they fill **at the regional scale.**
- There is an increase in **government leadership.** On one hand regional NRM planning has been a creature of government, and the regional NRM organisations implement significant government policies and programs but expectations haven't always been explicit, consistent or stable.
- The diversity of responses to unclear expectations has, on the other hand, allowed opportunities for exploring a more **innovative range of planning approaches.**
- The regional NRM organisations have become increasingly capable of organizing themselves at state and national levels. These networks facilitate national discussions, national knowledge sharing and much more efficient interaction with governments and other national partners.

‘What remains a challenge’ are some areas that we believe need serious attention if regional NRM planning is to continue to grow in value for the well being of Australia:

- Developing frameworks for **better achieving integration** of NRM components in plans – shifting the focus from planning on the basis of biodiversity, land and water assets to an ecosystem basis where dynamics and functions are better incorporated.
- Incorporating carbon mitigation actions and **adaptation to climate change** into plans.
- Growing the capacity (human and social skills, and knowledge management) to deliver a **high standard of planning**.
- Reducing duplication of effort across regional NRM planning and **other natural resource and land planning activities**. There are some 54 regional NRM plans, 55 Regional Development Plans, 59 State-based Regional Development Strategies and 564 local council plans with varying degrees of overlap, as well as other government plans and agreements, like offsets policies, that impact on NRM outcomes.
- Building community engagement skills, including Indigenous engagement, and beginning the move from community engagement to **community decisions about tradeoffs**.
- Better **closing of the adaptive management loop** that is making better use of existing knowledge, and designing monitoring programs to better support planning decisions.

The four priority actions proposed to address these challenges are:

- Encourage the governments that have not made explicit statements about the roles and objectives of regional NRM organisations and regional NRM plans to do so; and encourage performance excellence in all regional NRM organisations through a mix of clear expectations from governments and communities, independent assessment, incentives and support. In terms of independent assessment, we believe that an independent national NRM Council could play a valuable role.
- Develop a national plan for building the planning capacity of regional NRM organisations. This would pick up a number of areas flagged in the report as needing improvement, including leadership, planning community and Indigenous engagement, access to technical knowledge and research relationships, better peer-to-peer sharing of planning lessons learnt and planning for novel ecosystems induced by climate and further land use change.
- Develop relationships at the state and national level with peak local government bodies, Regional Development Australia bodies and with the Planning Institute of Australia, and work towards jointly sponsoring a national forum on regional planning encompassing all regional planning perspectives.
- Assess the outcomes of the regional environmental accounting trial for its linkages to the improvement of regional NRM planning, and continue to lobby governments for better coordination of resource condition monitoring.

INTRODUCTION

Purpose of the report

Regional Natural Resource Management (NRM) planning is a core responsibility of regional NRM organisations and as an initiative that began less than fifteen years ago, its practice is still evolving. But what is NRM planning? How is it done? Why is it important? How does it relate to other land and NRM planning processes? What are its strengths and what are the challenges? And how should regional NRM planning develop over the next decade so that it can be of more value, either alone or in conjunction with other planning mechanisms.

The purpose of this paper is to explore these questions and to propose:

- a) the core objectives and characteristics that define regional NRM plans (Section :WHAT IS A REGIONAL NRM PLAN?)
- b) a set of best practice principles that underpin good performance of NRM planning (Section: BEST PRACTICE PRINCIPLES) and
- c) future directions for regional NRM planning in Australia. (Section: FUTURE DIRECTIONS)

Our aim is not to suggest standardising the process of regional NRM planning or the structure of the resultant plans (which in any case are matters for state governments), but to articulate their defining characteristics and the practices that have made them work well, while still being responsive to state and regional diversity.

The report is an initiative of the National NRM Regions' Working Group, which is the national representative group of all regional NRM organisations around Australia. Interest in the topic arose from recent enquiries from the Commonwealth Government about potential uses of the plans, and this stimulated a quick stocktake of the current status of regional NRM plans around Australia during 2012. This report elaborates on the stocktake and assembles a wider set of evidence to underpin development of common principles and our ideas about the future direction for regional NRM planning. It follows the example set by the Chairs Working Group in 2010 in its report on NRM governance in Australia (Ryan, Broderick *et al.* 2010).

Foundations of 'Natural Resource Management'

'Natural resource management' in Australia today broadly refers to decision making about the use and protection of the natural resources that supply us with a wide range of goods and services, like food and fibre, clean air and water, recreation, biodiversity and heritage. 'Natural resource management' recognises that these goods and services are the result of dynamic interactions between land, air, water and living organisms, including people, and so NRM approaches are essentially integrative. This is a core characteristic. Landscapes are considered in their entirety; all land uses, from agricultural to wilderness, from land to sea and from Indigenous to urban are included. A Biodiversity Conservation Plan, or a Wetland Management Plan, or a Soil Conservation Plan is not an NRM Plan on its own, although it might be an important subset of an NRM Plan, or its objectives at a higher level might inform the objectives within an NRM Plan.

The inclusion of people, with their needs and values and their influences (desirable or otherwise) on ecosystem function is the other core characteristic of 'natural resource management'. This has two aspects. Firstly, it's people's needs and values that determine the objectives of natural resource management. Whether a landscape is valued for food or fibre production, water harvesting, biodiversity conservation, recreation, its own intrinsic value or mixes of these and other uses, has to be decided by social processes and in the context of their socio-economic goals. And secondly, people have a crucial role to play in the protection or repair of natural

resources, particularly in Australia where 62% of the land area is managed for primary production by private land owners/lessees; rural populations are generally sparse; and public investment in landscape condition is small for the large area involved.

These two core characteristics come from the principles of Integrated Catchment Management (ICM), developed in the 1980s. Since then, studies of complex system dynamics have brought a deeper understanding of integrated ecosystem dynamics, especially an understanding that systems can usually cope with certain levels of disturbance and recover, but that there are sometimes tipping points beyond which the system changes to be something quite different, and is not easily transformable back to its earlier state. This concept of resilience is currently being trialled as an enhancement of ICM in NRM planning practice.



FIGURE 1. NRM REGIONS ACROSS AUSTRALIA. [HTTP://WWW.ENVIRONMENT.GOV.AU/BIODIVERSITY/THREATENED/NRM-REGIONS-MAP.HTML](http://www.environment.gov.au/biodiversity/threatened/nrm-regions-map.html) (NOTE NSW REGION BOUNDARIES ARE CURRENTLY BEEN REDRAWN)

WHAT IS A REGIONAL NRM PLAN?

NRM regions and NRM organisations

Regional NRM plans are integrated plans for the protection and sustainable use of natural resources in the 54 designated NRM regions across Australia. The regional boundaries of the national set (Figure 1) were originally developed collaboratively by state and Commonwealth governments during 2002-2004. A few adjustments have been made since then, and NSW is currently in the process of some significant boundary changes.

The regional NRM organisations are the bodies responsible for: working with stakeholders to develop regional NRM plans and investment strategies; sourcing investment for landscape protection and repair; and developing partnerships with communities and organisations to implement the strategies. In some cases, the organisations also administer other duties allocated to them by state governments.

Links to the current plans for each region are in Appendix 1.

Legal status of regional NRM organisations and their plans

The governance and requirements of regional NRM organisations and their regional plans vary. In the constitution, states hold the powers to make decisions about natural resources, except where international obligations are involved, as in the designation of Ramsar sites, but States still retain responsibility for the management of these sites. Otherwise, Commonwealth Government involvement has to be by mutual agreement; in some cases this has been legislated (eg the EPBC Act that protects nationally endangered species and ecosystems) and in other cases it is agreed by negotiation.

Therefore, while the base design of a nationally agreed and coherent set of NRM regions underpins the current situation, there is considerable state by state and territory variation in how the regional organisations are constituted, the breadth of their activities and the nature of the direction given to the shape of regional plans. Broadly they fall into two types. In Victoria, NSW, SA, Tasmania and the ACT, the nature of the organisations and their plans is determined by statute and/or state government guidelines. In Queensland, NT and Western Australia the organisations are owned by communities and the shape of plans is determined by various degrees of negotiation with governments (see Table 1 for more detail).

The Commonwealth Government has also varied its requirements about regional plans over time. Regional NRM organisations were originally required to have an NRM plan in place to serve as the basis for receiving funding. The plan had to be approved jointly by the Commonwealth and relevant state/territory government. The need for Commonwealth involvement in the plans was withdrawn during the first Caring for our Country program, but a need for it to have some role in shaping the plans is currently re-emerging.

Despite the variation in regional NRM arrangements around Australia, a statutory or non-statutory basis is not a key factor in the level of performance of NRM organisations. A recent review of their performance across Australia indicates considerable variation both within and between jurisdictions that is not mostly attributable to their statutory status (Vogel 2013). A related conclusion was reached by Griffith (2009), in the context of reviewing the statutory system in NSW: *There is no evidence that community based regional organisations in other states or elsewhere are delivering better NRM outcomes than statutory based organisations.*

TABLE 1. REGIONAL NRM ORGANISATION ARRANGEMENTS AND PLAN REQUIREMENTS BY STATE AND TERRITORY

State/Territory	Regional NRM arrangements	Plan names and requirements
Queensland	14 organisations community owned	'NRM Plans' Requirements shaped by Queensland Government's Regional Natural Resource Management Framework which includes general state-wide NRM objectives (Queensland Department of Environment and Resource Management 2011) and more detailed planning guidelines developed by the collegial group of regional NRM organisations (Queensland Regional NRM Groups Collective 2012).
New South Wales	13 organisations (becoming 11 in 2014) statutory	'Catchment Action Plans' Plan requirements are issued by the NSW Natural Resources Commission (Natural Resources Commission 2011), which also reviews and recommends approval of the plans. New CAPS are in the process of being approved. There is a set of state NRM standards and targets.
ACT	1 organisation non-statutory but government appointed	'NRM Plan' No specified requirements; last plan modelled on the NSW framework at the time. The plan is the only territory-wide NRM plan.
Victoria	10 organisations statutory	'Regional Catchment Strategies' The Victorian Catchment Management Council provides state-wide NRM advice to the Minister, including NRM Strategy Guidelines (Victorian Catchment Management Council 2011). There is no state NRM plan.
Tasmania	3 organisations statutory	'NRM Strategies' A state-wide NRM Council provides advice on state priorities and accredits the regional strategies. There is a state Natural Resource Management Framework (Tasmania Department of Primary Industries, Water and Environment 2002).
South Australia	8 organisations statutory	'NRM Plans' An NRM Council advises government on state NRM targets and there is an NRM Plan for the state (SA Natural Resources Management Council 2012).
Western Australia	6 organisations community owned	'NRM Strategies' No specific requirements.
Northern Territory	1 body community owned	NRM Plan No specific requirements. The plan is the only territory-wide NRM plan.

Few of the regional NRM plans themselves have a regulatory role, that is, there are limited or no mandatory or enforceable actions in the plans, but local councils and other government plans in the region are increasingly being required to reference the regional NRM plan. For example in Queensland "*Regional NRM plans are being given greater prominence through integration with regional and local planning schemes developed under the Sustainable Planning Act 2009 (SPA)*". (Queensland Department of Environment and Resource Management 2011). In NSW, the regional NRM plans require in principle support at CEO level from all relevant State Government departments. In Victoria the Regional Catchment Strategies, after being signed off by Ministers and gazetted, are required to be referenced in the development of Municipal Strategic Statements by local governments (Victoria Department of Planning and Community Development 2013).

At the Commonwealth level, regional NRM plans are required to be referenced in applications for recognition of carbon projects. This requires proponents of carbon projects to assess whether the project is consistent with regional NRM plans "*if the project area, or any of the project areas, for the project is covered by a regional natural resource management plan—be accompanied by a statement about whether the project is consistent with the plan*" (23(1)(g)) of the Carbon Credits

(Carbon Farming Initiative) Act 2011). The underlying purpose is to avoid perverse outcomes and generate co-benefits (for example, projects are encouraged that deliver biodiversity benefits alongside carbon benefits so that biodiversity is enhanced rather than lost or degraded by the carbon objective). To ensure that the plans are capable of providing guidance to the carbon offset market in ways that will protect or enhance landscape resilience in a changing climate, the Commonwealth Government has also recently allocated funding to regional NRM organisations to update their plans accordingly.

Purpose and scope of plans

Purpose

There is no formally agreed single purpose for regional NRM plans across Australia. Where governments have succinctly stated their purpose (Table 2), there is a common theme that the plans identify integrated NRM goals, and the prioritised pathways for achieving them, for the region as a whole. The same theme is repeated in less succinct form in most other state government statements about NRM plans.

The genesis of regional NRM planning was the application of Integrated Catchment Management (ICM) approaches (see earlier section Foundations of ‘Natural Resource Management’), that is, thinking about managing water in catchments at a scale greater than the local creek. In 1997, Victoria was the first state to institutionalise such plans. The national system grew partly out of this experience and partly out of the realisation that the early investments in landcare and in the Natural Heritage Trust were each small and scattered across the landscape and it could not be confidently demonstrated that they’d been strategically planned to collectively lead to significant environmental outcomes.

TABLE 2. EXAMPLES OF EXPRESSED PURPOSES FOR REGIONAL NRM PLANS (NOTE: PURPOSE IS NOT CONCISELY EXPRESSED IN ALL JURISDICTIONS)

Commonwealth	New South Wales	Victoria
<p><i>Regional NRM organisations are uniquely positioned to develop and implement regional NRM plans which align national, state, regional and local NRM objectives and prioritise investments</i></p> <p>Planning section of Commonwealth draft standards for governance of regional NRM organisations.</p>	<p><i>Catchment Action Plans (CAPs) are strategic regional plans for improving the health, productivity and resilience of our landscapes. They identify what the community and government value about these landscapes, and explain what needs to be done to ensure long-term, sustainable management of a region’s natural resources.</i></p> <p>Natural Resources Commission 2011</p>	<p><i>The RCS [Regional Catchment Strategy] is the primary integrated planning framework for land, water and biodiversity management in each of the ten catchment management regions of Victoria. The RCS is also the overarching strategic framework for action, under which are found a range of sub-strategies and action plans for each region.</i></p> <p>Victorian Catchment Management Council 2011</p>

The benefits that regional NRM planning delivers can include:

- Community contribution to, understanding of, and support for the outcomes being pursued.
- Stakeholders able to see how their collective contribution fits within a bigger picture.
- Confidence for investors that their investments will ‘pay dividends’ by being based on both scientific and local knowledge as well as supported by regional stakeholders.
- Greater NRM dividends for regional investors through combining efforts when pursuing similar outcomes.

- Greater NRM dividends for government investors through alignment of regional, state and Commonwealth goals.
- A reduced risk of perverse outcomes, that is where stakeholders pursuing one outcome can have an inadvertent impact of the outcomes being sought by other stakeholders.

Scope

All plans pursue environmental outcomes relating to the sustainable use of natural resources. Social outcomes that are required to make progress towards environmental outcomes (e.g. building community capacity) also fall within the scope of plans but pursuing socio-economic goals in their own right is not generally within scope although plans often include aspirations for them, such as 'vibrant and prosperous rural communities'. All plans are set within their regional socio-economic context. Climate change, its mitigation and impacts and how decisions have to take these into account are new matters which all regions are beginning to consider.

Conceptual frameworks and plan structures

Conceptual frameworks

Most of the regional NRM plans to date have used an 'assets based' structure in which biodiversity, land, water and people are used as the classifying principle. These assets are easily understood by communities and do represent things that have attributes that are valued in their own right. However, this structure risks under-representing the dynamics and interdependencies in ecosystems that produce much of what people value, for example **water** that is clean because rivers are protected from excessive erosion from **land** and contain filters provided by a healthy riverine **biodiversity**. And clean water is needed for **healthy aquatic ecosystems** and provides **resources for agriculture and domestic** use. Such interdependencies and the multiple roles of assets can lead to a lack of clarity and confusion about the means and ends in planning. Tools for analysing ecosystem dynamics in ways that lend themselves to planning applications have been scarce and the majority of existing plans are still structured and communicated on an assets basis.

Recent developments in applying principles of resilience analysis to planning (Walker and Salt 2012) are now providing a potentially new framework that is better based on ecosystem dynamics. Resilience-based natural resource management is about responding to and shaping change in social-ecological systems in order to preserve long-run ecological functioning and societal welfare. It emphasizes management that aims to build and strengthen the ability of a system to adapt to shocks, or to manage its transformation if necessary. The approach was trialled in two regions in NSW in 2010/11 and then adopted by the NSW Natural Resources Commission in 2012 for use by all other regions in reviewing their plans in 2013 (Natural Resources Commission 2012). The sample set of targets in Table 3, from the Namoi region in NSW, illustrates a combined use of an assets and a resilience framework (the resilience analysis provides the thresholds).

All plans are also embedded in the framework of an adaptive management loop ie review, plan, implement and monitor, evaluate, review etc. Monitoring and evaluation has also been a strong requirement of the Commonwealth's investment in regional NRM plans, but its focus is on

TABLE 3. REGIONAL NRM PLAN TARGETS FOR A SAMPLE REGION, THE NAMOI IN NSW.
[HTTP://WWW.NAMOI.CMA.NSW.GOV.AU/9652_NAMOI_CMA_CAP__WEB_1.PDF](http://www.namoi.cma.nsw.gov.au/9652_NAMOI_CMA_CAP__WEB_1.PDF)

Asset	Thresholds	Targets
Biodiversity	<ul style="list-style-type: none"> Woody vegetation cover at 30% in cleared sub-catchments. Woody vegetation cover at 70% in intact sub-catchments. 61% of Regional Vegetation Communities maintain 30% extent. Population size of individual threatened species. Habitat area for individual threatened species or population. Area of endangered or vulnerable community. Presence of individual invasive species. Population extent of individual invasive species. 	<ul style="list-style-type: none"> By 2020 there is an increase in native vegetation extent and vegetation does not decrease to less than 70% in less cleared sub-catchments and 30% in over cleared sub-catchments and no further Regional Vegetation Community decreases to less than 30% extent as identified by 2010 baseline. By 2020 maintain sustainable populations of a range of native fauna species by ensuring that no further Regional Vegetation Community decreases to less than 30% extent as identified by 2010 baseline. By 2020 contribute to the recovery of priority viable threatened species, populations and communities. By 2020 no new invasive species are established in the Catchment and the spread of key emerging invasive plants and animals is limited.
Land	<ul style="list-style-type: none"> Ground cover is at least 70%. 	<ul style="list-style-type: none"> By 2020 there is an improvement in soil health as measured by an increase in ground cover at the paddock, sub-catchment and catchment scales.
Water	<ul style="list-style-type: none"> Surface water flow quantity is at 66% of natural (pre-development) condition with a sensitivity to natural frequency and duration. Geomorphic condition is good (against benchmark condition). Recruitment of riparian vegetation is higher than attrition of individual trees, shrubs or ground cover species. Agricultural and urban supply aquifers do not cross into lower levels of beneficial use regarding quality. Alluvial aquifers are not drawn down below long term historical maximum draw down levels. Groundwater is within 30m of surface where there are identified groundwater dependent ecosystems. Wetland is not drained, dammed or otherwise physically modified. 	<ul style="list-style-type: none"> By 2020 there is an improvement in the condition of those riverine ecosystems that have not crossed defined geomorphic thresholds as at the 2010 baseline By 2020 there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses By 2020 there is an improvement in the condition of regionally important wetlands and the extent of those wetlands is maintained.
People	<ul style="list-style-type: none"> There is no clearly defined threshold relating to people. Rather a focus on the generalities of building resilient social capital by increasing adaptive capacity and sustaining or improving wellbeing are considered important priorities. 	<ul style="list-style-type: none"> Natural resource management decisions contribute to social wellbeing. There is an increase in the adaptive capacity of the Catchment Community.

immediate accountability for the outputs it has funded as small steps towards long term outcomes, rather than learning about how to achieve changes in actual resource condition. Most state guidelines also include reference to plans being but one step in adaptive management. A recent development in this area has been to review, evaluate and update portions of plans on an on-going or needs basis, rather than wait for a periodic review date. Port Phillip and

Westernport CMA¹ in Victoria have instituted this process, with well defined processes for the approval of changes. Generally it is not possible to close the adaptive management loop well because reporting on the condition of natural resources across Australia is piecemeal.

Plan structures

Plans are variable in structure and how they are packaged. In some cases they exist as a group of documents that separate out the vision and high level strategy from the more immediate and detailed management actions and the investment strategies required to achieve targets. For example, the new South Australian plans are part of a package of four documents: a state of the region report, a ten year strategic plan, an annual investment plan and a statement of the regulatory functions of the regional Boards. The current Goulburn Broken draft Regional Catchment Strategy consists of the strategy itself, a summary for the community and a supplement that provides detailed descriptions of the assets of the region, their condition and the threats to them. And in Queensland, the state NRM planning guidelines recognise that needs vary around the regions and recommend regions develop a 'package' of plans. Nevertheless the central role of one strategic articulation of the vision and agreed regional goals and objectives is recognised.

In terms of structure, plan contents are specified to varying degrees by different states. The approach taken recently by the Commonwealth Government has been to begin to articulate the standards that they expect plans to reach in order for regional NRM organisations to be eligible for baseline funding in the future (Table 4), and for funding from the Regional NRM Planning for Climate Change program (Appendix 2). This is consistent with a focus on assessing the higher level objective of what the plan has to perform or achieve, rather than a focus on what the plan should look like or its consistency from one to another.

TABLE 4. DRAFT STANDARD FOR THE PLANNING COMPONENT OF GOVERNANCE STANDARDS FOR REGIONAL NRM ORGANISATIONS BY THE COMMONWEALTH GOVERNMENT

Development of regional NRM plans that:

- *are based on appropriate and best available scientific, economic and social information.*
- *are developed in collaboration with the community and stakeholders.*
- *align Australian Government, State, regional and local priorities including Closing the Gap in Indigenous disadvantage.*
- *are logical, comprehensive and transparent.*
- *clearly articulate Indigenous land and sea management aspirations and participation.*
- *prioritise NRM objectives and investment.*

Alignment of goals across sectors and scales

All plans draw on other published plans relevant to the region, and especially those that have statutory status at local, state or national level. Many such plans deal with just one component of natural resources (e.g. biodiversity) and it is a key role of the regional NRM plans to bring them together in ways that are biophysically feasible in the landscapes of the region (Box 1).

A growing number of states have NRM plans, or at least an explicit statement about NRM objectives at the state level (Table 1). Developing such a plan was a major recommendation in the recent Victorian Catchment

Box 1

Alignment is a particularly challenging aspect of NRM planning and requires a highly collaborative approach to planning, but even then there will be conflicts and inconsistencies between values at different scales, and between other plans and policies. This reinforces the need for regional NRM groups to be the 'facilitators' rather than owners of plans. (Wentworth Group).

¹ <http://www.ppwracs.vic.gov.au/>

Condition and Management Report: “What is required is an overarching strategy that brings together disparate theme-based land and water policies and strategies, into a coherent whole and which clearly articulates the targets and priorities for the State.” (Victorian Catchment Management Council 2012). The absence of NRM plans at some state and at Commonwealth level was also regarded as a shortcoming in an assessment of the status of Australia’s NRM governance system (Ryan, Broderick *et al.* 2010) because it plainly makes the job of aligning regional with higher level NRM goals more difficult, or simply unachievable.

The degree of alignment between targets in regional NRM plans and the Commonwealth Government’s Caring for our Country program was assessed as high in an analysis of all the plans in late 2012 (GHD 2012). (The Caring for our Country program is a funding program and not equivalent to what could be developed as a Commonwealth or COAG-agreed national NRM Plan or Strategy.)

At regional scale where other mechanisms have also produced NRM type goals at that scale, there is some ‘borrowing’ or cross-referral. This is often facilitated at a practical level by individuals with feet in both camps (e.g. some RDA Committee members are current or former regional body board members or CEOs). In South East Queensland, for example, the latest NRM plan took the desired outcomes spelt out in the statutory South East Queensland Regional Plan and developed measurable NRM targets and actions that would lead towards their achievement (Queensland Department of Environment and Resource Management, 2009). There is also some cross-referencing of regional NRM plans in other regional plans. An example is the Orana (NSW) RDA Plan which cross-references the Western and the Central West Catchment Action Plans.

Targets

Targets are the components of plans that begin to provide the focus for achieving the vision and long term goals (an example has already been given in Table 3.) Targets that are well quantified and supported with evidence give stakeholders and investors confidence that the plan means business.

A program logic approach is used in some regions to link outcomes and actions. This spells out the pathway in time from actions in the near future to the long term desired outcomes, with quantified (where possible) targets that need to be reached along the way if the outcome is to be achieved. An explanation of the approach and a worked example is illustrated in Figure 2. Targets and timelines for achieving them have become increasingly quantitative in NRM plans as the evidence-base, and planning skills, have grown.

FIGURE 2. A PROGRAM LOGIC THAT SPECIFIES QUANTITATIVE TARGETS LINKING ACTIONS TO OUTCOMES OVER TIME. FROM THE SOUTH AUSTRALIA MURRAY-DARLING BASIN REGIONAL PLAN. [HTTP://WWW.NATURALRESOURCES.SA.GOV.AU/FILES/30B3FB1F-808E-4636-BBB8-A1B300F7635D/VOLUME-1-STRATEGIC-PLAN-PLAN.PDF](http://www.naturalresources.sa.gov.au/files/30b3fb1f-808e-4636-bbb8-a1b300f7635d/volume-1-strategic-plan-plan.pdf)

Planning timeframes and terminology		Example from Biodiversity asset
Future ↑	<p>50 years Vision: A high-level vision statement reflecting the Board and community's aspirations for NRM in the Region</p> <p>Goals: expressions of broad landscape scale goals (see page 9)</p> <p>Asset visions: an aspirational statement of the broad aim for each of the natural resource asset classes (People, Water, Biodiversity, Land and Atmosphere).</p>	<p>Vision: A healthy, living landscape meeting the social, environmental, economic and cultural needs of the community, and ensuring the rights and wellbeing of future generations</p> <p>Asset vision: A healthy and ecologically productive environment that sustains biodiversity and is valued by the community</p>
↑	<p>15–20 years Long-term outcomes: short statement of desired outcomes sought after a 15–20 year timeframe.</p>	<p>Resource condition targets (RCTs): specific, time-bound and measurable targets that provide a reference point to assess whether asset condition is improving or otherwise. The targets are developed with the best available knowledge and information. RCTs describe the desired state of an asset at a future specified time. In the regional NRM plan, the assets are People, Water, Biodiversity, Land and Atmosphere.</p> <p>RCT B3: No species or ecosystem moves to a higher risk category and 50% of species move to a lower risk category by 2030</p>
↑	<p>3–5 years Intermediate outcome: short description of intended change that will result from the 5-year investment timeframe.</p>	<p>Management action targets (MATs): short-term targets measuring progress towards improving asset conditions and RCTs (3–5 year timeframe). MATs are stepping stones by which changes in RCTs will be achieved. Examples include changes in awareness, involvement or practice; aggregation of on-ground/management change at a catchment-scale; or reduction in threats to assets.</p> <p>MAT B3.1: Reduce the impact of critical threats to priority threatened species by 2014</p> <p>MAT B3.2: Reduce the impact of critical threats on EPBC-listed threatened ecosystems by 2014</p>
Now ↑	<p>1–3 years Action: the list of things that need to be delivered to achieve each of the MATs. Actions include activities such as site assessments, on-ground works, capacity building, awareness raising and measures to ensure compliance.</p>	<p>Key performance indicators (KPIs): include outputs and other measures of timely and efficient completion or projects. KPIs are not included in the Plan and will be detailed in subsequent implementation plans.</p> <p>Action: Prepare and implement integrated recovery plans for priority species</p> <ul style="list-style-type: none"> • KPI: Number of plans prepared • KPI: Measures implemented <p>The KPIs above are examples only and there will be many actions and KPIs associated with each MAT. KPIs will be detailed in subsequent implementation plans.</p>

Planning processes

The detail of planning processes is largely left to individual NRM organisations. After considering any guidance from governments, there is wide tailoring to the social and biophysical nature of the region, data availability and the resources (appropriately skilled staff and funds) that are available to do it. A variety of off-the-shelf planning frameworks might be used, wholly or in part. The program logic approach has just been referred to (and see Roughley 2009) and indeed must be used to develop a monitoring and evaluation plan for the projects that any organisation receives that are funded through Caring for our Country. Many NRM organisations have also used INFFER² (Investment Framework for Environmental Resources, Pannell *et al* 2013), or components of it, and for the conservation components of plans, a framework developed by the Nature Conservancy, called Conservation Action Planning, is being used.

Planning processes are increasingly using spatial mapping to describe their regions and support interaction with the community. Complex spatial predictive mapping is more likely to be carried out by state agencies or research organisations and access to this support for regional NRM organisations varies across Australia. While research organisations have produced a plethora of such modelling tools, they are not used as much as perhaps they could be: baseline data is not always available, they still require the use of expert judgement and their focus is usually narrower than that required for integrated regional modelling.

A variety of decision support tools are also used, from simple self-designed tools based on the principles of MCA (multi-criteria analysis), to risk assessment frameworks and to computer based decision support MCA tools like MCAS-S³, developed by the Australian Bureau of Agricultural and Resource Economics and Sciences.

Technical Advisory Committees are widely used to help ensure a sound evidence base to the analysis of issues and the development of options during the planning processes.

Community and stakeholder involvement

A key characteristic of regional NRM plans is that they convey a vision, set targets and priorities and recommend actions for the entire area of their region, even though the organisation that develops the plan, the regional NRM organisation, is only one of many who need to be involved in achieving the plan objectives. As the quote in Box 1 concludes, regional NRM organisations need to be facilitators rather than owners of plans.

A second important reason for involving communities and stakeholders in the planning process is to strengthen the knowledge base that underpins the plan. Technical knowledge developed in research agencies is critically important but at finer scales, people who live in a place are often a better source of knowledge about landscape change in that place. Local people and stakeholders are also the best source of knowledge about 'how to get things done around here'.

An example of engagement processes used for both these purposes (regional ownership, regional knowledge) in developing a plan is given in Box 2. A similar process would be seen in many other regions. And an example of the expression of commitment that can be obtained by using good engagement processes in developing a plan is illustrated in Figure 3.

² <http://www.inffer.com.au/>

³ <http://www.daff.gov.au/abares/data/mcas>

BOX 2. Case Study in Community Engagement in NRM Planning: NSW Central West Catchment Management Authority.

The Central West CMA seeks the community's help generally to enhance and protect natural resources. During the last planning period we involved the community in the following ways.

Based on components of the Investment Framework for Environmental Resources (INFFER) process combined with a resilience approach, we designed joint activities that aimed to: -

- * help communities and ourselves identify the important natural places, values and features in our Catchment;
- * describe and map these places;
- * gain a better understanding of the balance of these places in natural and social systems;
- * better determine the threats and risk of degradation to those systems;
- * determine the line where these systems are in danger of degrading to a point of no return; and
- * guide appropriate work to protect and move these systems away from dangerous thresholds.

Initially, twelve community workshops were run across the Central West to find out more about what the community values. Community members, using their local knowledge, literally drew on large aerial photos of their local areas, marking the places, areas, features of their area that they valued. Over 500 important natural places/assets were identified. This grass-roots data was combined with the best available science and expert opinion to guide our next series of community engagement meetings. This involved a series of facilitated resilience thinking workshops with community, technical experts and government agencies coming together to identify key systems and thresholds of potential concern.

The overall planning document gradually took shape through a transparent and efficient facilitated process that took many months, until the point of completion of the final document. This included sign-off by all the NRM-related NSW Government agencies. Thus the final planning document is the "Central West Catchment Action Plan", owned and used by a variety of organisations rather than being just the "Central West CMA Plan".

A key factor for success was the involvement of the Central West CMA's Board advisory groups - the Local Government Reference Group (with representatives from 16 local governments covering the area), the Aboriginal Reference Group (representing the 15 communities across the Central West) and NRM Working Group (which includes representatives from Landcare and naturalist groups across the region).

The final plan is available at www.cw.cma.nsw.gov.au.

FIGURE 3. EXPRESSION OF REGIONAL CONSULTATION AND SUPPORT FOR AN NRM PLAN, IN THIS CASE THE CURRENT PLAN FOR THE GOULBURN BROKEN REGION IN VICTORIA (GOULBURN BROKEN CATCHMENT MANAGEMENT AUTHORITY



commend the consultative process that was undertaken by the Goulburn Broken Catchment Management Authority to develop the Goulburn Broken Regional Catchment Strategy 2013-2019 and look forward to working in partnership with other stakeholders to deliver the Strategy outcomes.

Terry Hubbard
Chair
Upper Goulburn
Landcare Network

John Laing
Chair
Goulburn Murray
Landcare Network

Michael Kaponica
Chair
Hughes Creek Catchment
Collaborative

John Gilson
Chair
Up2Us Landcare Alliance

David Ince
Chair
Gecko CLaN

Paul Fleming
Chair
Southwest Goulburn
Landcare Network

Michael Spencer
President
Strathbogie Ranges CMN

Janice Mentiplay-Smith
Coordinator
Broken Boosey CMN &
Whroo Goldfields CMN

Lanie Pearce
Coordinator
Lower Goulburn CMN

Robbie Hodges
Chair
Longwood Plains CMN

John Pettigrew
President
Goulburn Valley
Environmental Group

Michael Vanderzee
Chief Executive
Winton Wetlands
Committee of Management
Inc.

Gavin Hanlon
Managing Director
Goulburn-Murray Water

Peter Quinn
Managing Director
Goulburn Valley Water

Ross McGowan
Regional Director
Department of Environment
and Primary Industries

Peter Farrell
Regional Manager
Department of Environment
and Primary Industries

Malcolm Holm
Chair
Murray Dairy

Kate Miller
Regional Manager
Central Region
Parks Victoria

Angela Verde
Regional Manager
Hume Department of
Transport, Planning and
Local Infrastructure

Clare Kiely
Regional Manager
Environment Protection
Authority

Gavin Cator
CEO
City of Greater Shepparton

Keith Baillie
CEO
Campaspe Shire Council

David Roff
CEO
Mansfield Shire Council

Victoria Marles
CEO
Trust for Nature

Steve Crawcour
CEO
Strathbogie Shire Council

Margaret Abbey
CEO
Murrindindi Shire Council

Tony McIlroy
CEO
Benalla Rural City Council

Neville Atkinson
Chair
Yorta Yorta Nation
Aboriginal Corporation

Gary Arnold
CEO
Moira Shire Council

Rebecca McKenzie
CEO
Mitchell Shire Council

2012).

Summary of core characteristics of a regional NRM plan

As the image on the cover illustrates, the labels used for regional NRM plans vary. But looking inside the covers will reveal a set of characteristics (their 'charter') that together distinguish these plans from any others. These are:

- With the underpinning aim of sustaining the natural resource base for future generations, the plans take a long view into the future. They recognise that landscape change can be slow, but that clear guidance is needed on the priority actions that need to be taken now. The plans therefore also spell out intermediate objectives and clear pathways from the present to the future.
- The plans are highly integrative. They involve all land uses and their socio-economic values across their regional landscapes, and they take into account the ecological interactions that influence natural resource outcome. In this way the plans are distinguished from, but complementary to, those that deal with single industries, single issues or single natural resources.
- The plans are built with broad stakeholder and community involvement so that they reflect local knowledge and aspirations, gain local credibility, commit local organisations to a role in implementation and empower local communities to be involved. The broad directions for each plan come from relevant overarching plans and strategies at higher scales so that the result is an alignment of interests and opportunities across multiple scales.

BEST PRACTICE PRINCIPLES

The three core characteristics of regional NRM plans – long-term, integrative and locally “owned” – make regional NRM planning a challenging task. Moreover, the regional NRM organisations charged with the planning were formed from scratch within the last fifteen years and had little prior experience to build on. Governments too were new at requesting and supporting such a task and there has been considerable ‘learning by doing’ separately and together in the years between then and now.

Based on our experience in the practice of regional NRM planning over this time, these are the main attributes that we have found help make regional planning a success.

By regional NRM organisations

- Good leaders and committed staff with the right complement of skills. These are helped generally by rigorous Board appointment processes and support and incentives for excellence, and when it comes to planning, appropriate resources to devote to the planning task ... [Regional NRM] *organisations that have demonstrated strong leadership tend to be the ones that perform well in other categories across the Excellence Framework* (Vogel 2013).
- Good community and stakeholder relations that are maintained regularly and not just instituted at ‘planning time’ every 3-5 year intervals. This is helped by having a planned, segmented approach to community engagement, and construing it as a wider activity than marketing and communication (Vogel 2013).
- A structured approach to obtaining, maintaining and using knowledge. Regional support for the plan, the confidence of investors, and the capacity to adapt to new knowledge and challenges, depends on the evidence base for the plans being transparent and logical.

By state and national governments

- A practice of subsidiarity, or devolving the aspects of planning that depend on regional relationships and regional knowledge to the regional level. At the same time, aspects that are best done at a higher scale, like expression of state and national level objectives for regional NRM planning, or providing specialised technical support must also be done.
- A partnership approach with regional NRM organisations that involves good relationships, open consultation and mutual respect for the different contributions each type of organisation makes to achieving complex outcomes.
- Changes in NRM planning requirements that evolve gradually over time and that are based on learning and periodic critical review i.e. that are a balance between stability and continuous improvement.
- Using their mandate to have regional NRM plans used for multiple purposes.

WHAT'S WORKING WELL ...

This section and the next set the scene for thinking about where effort needs to be placed in the future to guide the further evolution and best practice in regional NRM planning. 'What's working well ...' is the set of attributes that have established a trajectory in the right direction and now need encouragement, monitoring and maintenance rather than targeted development. '... And what remains a challenge' are the areas that we believe need serious attention if regional NRM planning is to continue to grow in value for the well being of Australia.

Wider recognition of the value of NRM plans and their use at the regional scale

Evidence for regional NRM planning having met a gap at regional scale comes from several recent sources.

- Extensive consultation during the recent review of the Caring for Our Country 2008-2013 program indicated that stakeholders generally agreed that *the regional scale is the most appropriate locus for strategic natural resource management planning* (Caring for Our Country Review Team 2012).
- The most recent National State of the Environment Report identified regional-scale environmental management as a significant trend: *Four trends in environmental management stand out over the past decade. ... The second is that the Australian, and state and territory governments have given much greater emphasis to regional-scale environmental management, complementing the roles of different levels of government and of community-based organisations such as Landcare* (State of the Environment Committee 2011).
- Regional NRM plans are referred to in the legislation supporting the Commonwealth Government's Carbon Farming Initiative (see Legal status of regional NRM organisations and their plans).
- At state level, reference to regional NRM plans is increasingly being required in other statutory plans e.g. Victorian Regional Catchment Strategies must be used in the development of Municipal Strategic Statements by local governments.
- At regional level, regional NRM plans are voluntarily used in by some Regional Development Committees as the environment component or environmental context to fulfilling their charter of developing regional triple bottom line plans.
- A forum of NRM researchers and policy makers concluded that *... there is strong consensus that addressing NRM at the regional scale is justified and effective. That is, between the local and state scale, there is the opportunity for optimal data gathering, integration of issues, community engagement, and linking between policy initiatives and on-ground outcomes* (Clayton, Dovers et al. 2011). However, constraints to NRM planning being done well were also noted (see section ... and What Remains a Challenge?).

A trend towards greater use of the regional scale for planning in other sectors is also apparent in Australia (see the following section about state regional planning in Australia) and more widely around the world (Collits 2007). Reasons given by this author include the limited capacity of local governments to deal with large scale problems that nevertheless need tailored solutions at a scale below that of the state; the subsidiarity principle of gaining efficiency by addressing problems at the lowest capable scale; and that mobility and the knowledge economy has led people to live their lives at a scale beyond the local. For NRM the argument for regionally

tailored solutions is perhaps even stronger, given the size of Australia, the complexity of its ecologies and the variability of its climate. In terms of decision-making across scales in Australia, the role of the regional scale in being able to mediate between many individuals/small organizations and government scale was identified in Ryan, Broderick *et al.* (2010).

Regional approaches also have the potential to provide collaborative solutions that rise above 'localism' or 'nimbyism', a strongly adhered preference for one's local place that results in limited interest in broader shared objectives. Imposed regional structures have been strongly contested in some local government cases in Australia (Taylor 2012), and were resented and in some cases strongly contested in the landcare community in Australia when regional NRM organisations were introduced. While regional NRM arrangements are increasingly embedded in the Australian NRM governance system, their existence is not ultimately above challenge as other organisations have partial charters and capacities in the same area. Amongst potential problems at the regional scale is the 'democracy gap' i.e. there are few mechanisms for accountability to constituents at that scale through formal representation. On the other hand, the community involvement and ownership involved in regional NRM planning represents an alternative in terms of participatory democracy.

Increase in government leadership, of an appropriate kind

Over the fifteen years since the regional NRM organisations were formed and given a charter to develop regional NRM plans there has been a discernible growth in the clarity of expectations from governments about what NRM plans should achieve, both in terms of goals and as a process (see Purpose and scope of plans). Moreover, the expectations are mostly couched in high level output/outcome terms, leaving states/regional NRM organisations scope for selecting planning details best suited to their particular situation, hence it is of an 'appropriate kind'. It is also consistent with the principle of subsidiarity in NRM (see Appendix 3). Not all states have done this yet, or done it succinctly, so while trending well, further work could be done in this area. The Commonwealth's new draft standards for regional NRM organisations (that includes a standard for regional NRM planning) also need to be applied and tested for their workability and effectiveness.

We also note there are other areas where there is potential for much stronger government leadership in the NRM planning arena. For example, the Commonwealth Government requires both regional NRM plans and Regional Development Plans (including an environment plan) to be developed but there's no requirement for the environmental priorities of one to be consistent with the priorities of the other.

Opportunities for innovation

The mix of different arrangements for regional NRM organisations (see Legal status of regional NRM organisations and their plans) has resulted in a richer mix of approaches to NRM planning than might have occurred with more national prescription. In particular, the NSW Natural Resources Commission, through its charter to independently "promote improvements in performance, governance and accountability through the development of standards and targets and oversee their implementation in regional planning", supported a trial and then a roll-out of applying a resilience approach to regional NRM planning. In most cases, the resultant plans are in transition – hybrids of a resilience and assets based approach – but the innovation is clear and will develop further as the experience and skills grow. Many other smaller innovations are shared biennially in the NRM Knowledge Conferences. The potential for innovation, created by varying degrees of state prescription in regional NRM planning, does need some accompanying mechanisms for it to deliver real improvements. These include the employment of skilled staff, mechanisms for acquiring knowledge (including working with research organisations as well as peer-learning) and resources for staff development.

An active national network of the regional NRM organisations

The regional NRM organisations have developed several effective ways of sharing learnings and developing collective views across the nation. All states have mechanisms for regular meetings of the chairs and CEOs of their organisations. A National NRM Working Group, consisting of representative chairs from every state and territory and supported in part by the Commonwealth Government, meets monthly by phone and face to face bi-annually. One of those meetings is the annual Chairs Forum to which all 54 chairs of the governing boards of NRM organisations are invited. The CEOs of the same organisations also meet regularly, and both forums have become valuable mechanisms for interaction with each other and with senior bureaucrats from the Commonwealth Government. The National Working Group also sponsors subsidiary working groups to carry out specific tasks, like the development of this report or the trial into regional environmental accounting; a biennial national NRM Knowledge Conference (organised by the CEOs); a Roundtable that meets with NFF, ACF, WWF and ALGA to explore issues of common concern; a Memorandum of Understanding with the National Landcare Network; and the national rollout of an evaluation of the performance of NRM organisations against international benchmarks. Since inception of the National Working Group some 15 years ago, its growing capacity to develop shared views, to pro-actively pursue activities that benefit all its members, and to effectively represent its members at national level have opened new opportunities for consultation and involvement in Commonwealth policy and program development.

... AND WHAT REMAINS A CHALLENGE?

Developing frameworks for achieving integration of NRM components in plans (with ‘informed simplicity’)

Moving from an assets based approach that segregates the components of natural resources, to a more integrated ecosystem dynamics based approach has begun but is in its early days. A framework based on better understandings of ecosystem dynamics will also likely deliver more assured outcomes as ecosystems respond to climate change. Conceptually this requires planners and stakeholders to have a broader understanding of ecosystem processes, so it is challenging. But paradoxically the reward is increased simplicity because it enables focus on just a small number of the most critical priorities (with more assurance). Considerably more learning and critical testing of its efficacy is required.

Incorporating carbon mitigation actions and adaptation to climate change into plans

This challenge is a relatively new one, and it is a focal output for the Commonwealth Regional NRM Planning for Climate Change Fund over the next four years. Recognising that this is a new task that requires new frameworks and additional knowledge and tools beyond the previous scope of regional NRM plans, funds are being allocated to research partners as well as to regional NRM bodies. The research partners will work with clusters of regional NRM organisations to explore frameworks and synthesise appropriate data and information to assist with this planning task. As with any new and complex task where there are few models or prescriptions to follow, much will be learnt in the first round of this planning that will need to be shared and built on for subsequent planning rounds. We know that substantial knowledge gaps will remain after this first round of ‘climate ready’ plans is complete and a set of directions for future research would be a useful output at the end of the round.

A risk in this work is that too much ‘business as usual’ thinking is carried forward in scenarios of climate change impacts. A recent report highlights that our current view of conservation planning, a static one that is strongly based on conserving individual species in specific locations, may need

to be recast as one that minimises biodiversity loss in the face of significant ecological change (Dunlop *et al* 2013).

Growing the capacity to deliver a high standard of planning

The capacity of NRM organisations varies considerably around Australia. Variability in annual budgets (from all sources of funding) from under \$5m to over \$50m, differing levels of state technical support, differing levels of economic capacity within the region, and in some cases remoteness, makes it a challenge for some regional NRM organisations to attract and retain skilled staff, especially when highly dependent on grant funding that is renewed in short cycles. In contrast to planners in local councils and governments, NRM ‘planners’ do not have a dedicated planning qualification or the support of a strong professional body like the Planning Institute of Australia (PIA). For this reason, mechanisms like the biennial ‘Knowledge Conference’ where staff from regional organisations across Australia share their experiences and learn from and inspire each other are crucial. However the collective body of knowledge about NRM planning could be shared better: *“It is strongly believed among practitioners that best practice examples and lessons are available in NRM planning and implementation, but that these are not easily accessible and that facilities to enable learning across regions and jurisdictions could be enhanced. This best practice dissemination need indicates a role for government.”* (Clayton, Dovers *et al.* 2011).

Access to new (and existing) knowledge, and a role in shaping research to the needs of a region or groups of similar regions remain a challenge.

Interactions with other natural resource and land planning activities

At state and national scale

Regional NRM plans are generally well aligned with state and national biodiversity conservation plans and goals. But several other state and national planning processes influence natural resources in regions in independent fashion. Here the challenge for regional NRM planning is not one of overlap but of omission. The first of these processes is the approval of major developments by state planning or Federal Ministers. Although assessed against state and Commonwealth statutory environmental requirements, such developments are not generally assessed against regional NRM plans. Of particular concern is the growing estate of development offsets approved and managed by planning departments in isolation of regional NRM plans. At the Commonwealth level, independent policy development and program administration across departments complicates regional NRM planning and risks perverse outcomes or lost opportunities for co-benefits. The Carbon Farming Initiative is a recent example of good practice, but the separation of Caring for our Country into two portfolios (Agriculture and Environment) is not.

A second process that largely sits outside the scope of regional NRM plans is the use of water recovered for the environment, particularly in the cross-jurisdictional Murray-Darling Basin. In its recent initial assessment of the implementation of the new Murray-Darling Basin Plan the National Water Commission notes *“The Basin Plan alone cannot address all the activities required to achieve a healthy working Murray–Darling Basin. Other important actions are underway in the region to give effect to the Basin Plan’s objectives, or have influenced the context in which the plan is being implemented. They include... broadbased natural resource management activity undertaken by the Australian Government and state governments under programs such as Caring for our Country, which supports efforts by regional groups and communities to improve biodiversity and sustainable farm practices”* (National Water Commission 2013).

At regional scale

At the regional scale, there are at least three sets of plans that include aspects of land and environmental planning that potentially overlap but where the overlap is not codified or formally managed. There is the set of 54 regional NRM plans described here; there is a set of 55 regional plans made by Regional Development Australia (RDA) committees that bring local people together to develop investment plans for their regions; and there are 59 State Government regions with regional sustainable development plans either in place or designated for development (see Appendix 4 for links to state websites describing their regional plans).

The purpose of the RDA regional plans is to guide investment in regional development; although the scope given is social, economic and environmental, the environmental aspects are lightly done. The state regional plans are focused on managing social and economic change and development but not at the cost of environmental sustainability.

The latter set, which consists entirely of individual State Government initiatives, covers much but not the whole area of Australia while the regional NRM and the RDA plans each achieve full national coverage. The boundaries of all three sets of plans have been drawn up by different processes and do not necessarily coincide although there is reasonable commonality amongst them. Most of the state regional plans are not statutory (although Queensland's are intended to be) and act more as a guide to investment and actions rather than as prescriptions. A recent evaluation of the linkages between NRM planning and other regional planning activities concluded that it varies substantially across the nation (Vogel 2013).

The challenge of having up to three regional plans applying in every place lies mainly in duplicated effort, community confusion and consultation burn out, and the re-work that has to be done where boundaries don't coincide. At higher scale, the downsides are missed opportunities for more efficient use of public resources, and the risk of independent partial solutions to complex problems leading to perverse (counterproductive) outcomes.

At local scale

The statutory land use plans of Australia's 564 local councils have substantial influence on natural resources as they are the prime vehicle for determining the allocation of land to its broad use. Councils also own and manage considerable areas of land (roadsides, remnant patches and local reserves) that contribute to the natural assets and ecosystem functioning of the region. Council plans are not always required to reference regional NRM plans and their statutory base gives them formal precedence. Nevertheless, regional NRM plans and local council plans rarely collide in practice (partly due to different scales and purposes) and it's more likely that there are challenges in the gaps between them. For example, the growth in peri-urban development and rural lifestyle living, that are enabled by Council planning, impacts substantially on the natural resource base and hence achievement of regional NRM plans (as do urban populations more generally in their demands for products and services from rural areas).

The practical challenge for regional NRM planning is building relationships with, on average, 10 local councils per region; encouraging collaboration between councils who have traditionally being competitors for funding; and interacting with a planning culture in councils that comes from a long background of planning for community and economic purposes and in which the environment has been a recent grafted-on entrant. This collaboration works much better where voluntary Regional Organisations of Councils (ROCs) have maintained a working momentum. The gap in purpose is an opportunity as much as a challenge.

Community engagement

Three aspects of community and stakeholder engagement require more development. Firstly, skills in strategic planning for community engagement need building. Engagement needs to have clearer objectives and actions need to be more targetted to those objectives. Government investors are indicating a reluctance to continue funding community engagement and skill building

for its own sake and it's timely to invest some effort in better understanding what it is and how it can be better done.

Secondly, engagement with Indigenous people is sufficiently different that it needs its own targetted attention and strategies.

Thirdly, and of a longer term nature, ways of dealing with community conflict will need to be dealt with in regional planning. Contemporary public debates about land use in rapidly developing coast regions, or about coals seam gas developments in a number of regions across Australia exemplify a likely future in which decision making about land use become more fraught as global demands for ecosystem services grow. To date, regional NRM planning has largely worked around conflicts in land use because the plans are not statutory, they align with higher level determinations about land use, and their integrated and participative nature set the scene for community understanding about the need for mixed land uses to supply a range of desired ecosystem services. To support more intense community debates about landscape values and preferred outcomes, planning will have to become more spatially explicit about tradeoffs.

Completing the adaptive management loop

The planning step in the adaptive management loop is often much better done than the monitoring and evaluation steps, and it has to be challenged whether this is the most effective balance of effort.. The national SoE report in 2011 recognised the challenge and it applies equally at regional and national level : *Assessing the state of Australia's environment is inherently difficult. Australia is a big country, with a wide variety of ecosystems and heritage. There are many unconnected means by which we gather and store information on our environment, and accessing this information at a national scale is tremendously complicated and not always possible. These are the challenges faced by every SoE report, and why many of the assessments made in this report are indicated as uncertain and in some cases not possible. We look forward to continuing progress towards improved environmental information systems across jurisdictions, industries and communities. Although there will always be a call for more measurement and new understanding of our environment and heritage, there is also great value latent in the information we have already collected if we can access it more efficiently and effectively* (State of the Environment Committee 2011).

The National NRM Working Group and the Wentworth Group have been trialling the development of a set of national environment accounts, built by aggregation of environmental accounts at regional scale.

FUTURE DIRECTIONS

Our forward planning for regional NRM plans needs to deal not only with the challenges identified above, but also with being prepared for other pressures (and opportunities) that shape our planning role from the wider world.

Signals of change

Established trends

- The regional scale is perceived as a gap that needs to be filled, judged by the recent growth in the number of regional planning mechanisms.
- The evidence base for planning decisions is growing as research, augmented with local practical knowledge, continues to add to our knowledge of how Australian ecosystems work. Combined with mapping technologies and more spatially explicit modelling, this allows more sophisticated analyses at the right scale.
- Community expectations about their involvement in decisions that affect them locally are growing; but they are cynical about false consultation promises.
- Population growth in coastal regions, and widespread coal seam gas development are continuing to alter land use and increase the pressure on natural resources.
- Changing demographics in rural communities and the trend to larger farms is reducing the potential for community involvement in NRM.
- Productive partnerships between industries and communities, and between industries and NRM organisations that cut across the divide of conservation and development.

Emerging trends

- In national policy, release of the first ever National Food Plan, one that includes consideration of the sustainability of food production.
- Realisation that climate change and its impacts are already influencing the environment; and small beginnings have been made to think through how to manage adaptation and sensibly build it into NRM decision-making.
- Development offsets becoming a growing proportion of the conservation estate.
- Technological capacity that enables more citizen science, particularly for monitoring.
- Opportunities in the social media for new ways of connecting issues and people, especially the young.
- Using complex system and resilience concepts to underpin development of NRM goals and priority management actions.
- Less formal review periods for plans and more flexible, but equally accountable updating along the way.
- Less focus on a single plan, and more focus on a 'planning framework' that includes a strategic 'master' plan and the subsidiary plans required to make it happen.

On the horizon

- Governments are talking about the need to raise productivity in the Australian economy and there will be pressures in all spheres of government funded activity to contribute. The overlapping existence of regional NRM organisations, state regional plans, regional development committees and local government planning might be questioned.
- Re-thinking biodiversity conservation strategies as climate change unfolds. Conservation planning based on in situ conservation of individual species might not be

the best strategy when ecosystems are changing rapidly ('novel' ecosystems) and cannot be expected to return to their current state (Dunlop *et al* 2013).

- The democracy gap at the regional level (regional accountability) is likely to become an issue if regional scale planning and implementation begin to carry more weight and as planning frameworks that focus on delivery of ecosystem services result in more focus on determining tradeoffs in landscapes.

Planning forward

To address the challenges raised in this report, these are the actions we suggest need focused attention and action in the next few years:

- Encourage the governments that have not made explicit statements about the roles and objectives of regional NRM organisations and regional NRM plans to do so; and encourage performance excellence in all regional NRM organisations through a mix of clear expectations from governments and communities, independent assessment, incentives and support. In terms of independent assessment, we believe that an independent national NRM Council could play a valuable role. It is clear that in states like NSW and Victoria where independent government-appointed bodies provide advice on NRM matters to state governments, that roles and expectations are clearer, and cycles of improvement in regional NRM plans are nurtured. One option would be to invest this role at a national level with the National Water Commission.
[ACTION: National and state groups of regional NRM organisations promote the recommendation and governments consider these goals and these or other options for fulfilling them]
- Develop a national plan for building the planning capacity of regional NRM organisations. This would pick up a number of areas flagged in the report as needing improvement, including leadership, planning community and Indigenous engagement, access to technical knowledge and research relationships, better peer-to-peer sharing of planning lessons learnt and planning for novel ecosystems induced by climate and further land use change.
[ACTION: Regional NRM organisations collectively, supported by governments]
- Develop relationships at the state and national level with peak local government bodies, RDA bodies and with the PIA, and work towards jointly sponsoring a national forum on regional planning encompassing all regional planning perspectives.
[ACTION: National NRM Regions Working Group]
- Assess the outcomes of the regional environmental accounting trial for its linkages to the improvement of regional NRM planning, and continue to lobby governments for better coordination of resource condition monitoring.
[ACTION: National NRM Regions Working Group]

REFERENCES

- Caring for Our Country Review Team (2012) 'Report on the Review of the Caring for Our Country Initiative'. Commonwealth of Australia: Canberra.
- Clayton H, Dovers S, Harris P (2011) 'HC Coombs Policy Forum NRM Initiative. Document 1. Synthesis of broad issues and opportunities'. Fenner School of Environment and Society, The Australian National University, Canberra.
- Collits P (2007) Planning for Regions in Australia. In 'Planning Australia. An Overview of Urban and Regional Planning'. (Ed S Thomson) Cambridge University Press, Cambridge.
- Dunlop M, Parris H, Ryan P, Kroon F (2013) 'Climate-ready conservation objectives: a scoping study'. National Climate Change Adaptation Research Facility, Gold Coast.
- GHD (2012) 'Review of Regional Natural Resource Management Plans.' National NRM Working Group.
- Griffith R (2009) 'NRM Models and Frameworks: Advantages and Pitfalls. Report to the NSW Natural Resources Commission.' Rod Griffiths & Associates.
- National Water Commission (2013) 'Murray–Darling Basin Plan implementation: initial report'. National Water Commission, Canberra.
- NSW Natural Resources Commission (2011) 'Framework for assessing and recommending upgraded catchment action plans.' Natural Resources Commission, NSW.
- NSW Natural Resources Commission (2012) 'Framework for Assessing and Recommending Upgraded Catchment Action Plans. Version 2.' NSW Natural Resources Commission, Sydney.
- Pannell DJ, Roberts AM, Park G, Alexander J (2013) Designing a practical and rigorous framework for comprehensive evaluation and prioritisation of environmental projects. *Wildlife Research* 40(2), 126-133.
- Queensland Department of Environment and Resource Management (2009) South East Queensland Natural Resource Management Plan 2009–2031. http://www.derm.qld.gov.au/be-involved/pdf/seq_nrm_plan.pdf
- Queensland Department of Environment and Resource Management (2011) 'Queensland Regional Natural Resource Management Framework'. Queensland Government.
- Queensland Regional NRM Groups Collective (2012) 'Queensland Regional NRM Planning Guidelines'. Queensland Regional NRM Groups Collective:
- Roughley A (2009) 'Developing and Using Program Logic in Natural Resource Management'. Commonwealth of Australia, Canberra.
- Ryan S, Broderick K, Sneddon Y, Andrews K (2010) 'Australia's NRM Governance System. Foundations and Principles for Meeting Future Challenges'. Australian Regional NRM Chairs: Canberra.
- SA Natural Resources Management Council (2012) 'Our Place. Our Future. State Natural Resources Management Plan South Australia 2012 – 2017'. Government of South Australia: Adelaide.
- State of the Environment Committee (2011) 'Australia State of the Environment 2011. Key Findings'. Department of Sustainability, Environment, Water, Population and Communities, Canberra.

Tasmania Department of Primary Industries, Water and Environment (2002) 'Tasmanian Natural Resource Management Framework'. Government of Tasmania.

Taylor BM (2012) Regionalism as resistance: Governance and identity in Western Australia's Wheatbelt. *Geoforum* 43, 507-517.

Victorian Catchment Management Council (2011) 'Regional Catchment Strategy Guidelines 2011'. Victorian Catchment Management Council.

Victorian Catchment Management Council (2012) 'Catchment Condition and Management Report 2012'. Victorian Catchment Management Council.

Victoria Department of Planning and Community Development (2013) Clause 14 (Natural Resource Management) of the State Planning Policy Framework.
http://planningschemes.dpcd.vic.gov.au/aavpp/14_sppf.pdf

Vogel N (2013) 'Analysis of Performance Excellence Reviews of Regional NRM Organisations'. Australian Knowledge Management Group.

Walker B, Salt D (2012) 'Resilience practice. Engaging the sources of our sustainability'. Island Press, USA.

APPENDICES

Appendix 1. Weblinks to current regional NRM Plans.

Weblinks to the most current set of regional NRM plans across Australia. In some cases, new plans are still being drafted and not yet publically available.

State	Region	Link to Plan
ACT	ACT	http://www.actnrmcouncil.org.au/nrmplan/download
New South Wales ⁴	Border Rivers	http://brg.cma.nsw.gov.au/index.php?page=draft-cap
	Central West	http://cw.cma.nsw.gov.au/AboutUs/2011capconsultation.html
	Hawkesbury Nepean	http://www.hn.cma.nsw.gov.au/multiversions/6613/FileName/DRAFT_HN%20CAP_2013_2023.pdf
	Hunter Central Rivers	http://www.hcr.cma.nsw.gov.au/uploads/res/hrcma_cap.pdf
	Lachlan	http://www.lachlan.cma.nsw.gov.au/downloads/Catchment_Action_Plan/Lachlan_CAP2013_2023_web.pdf
	Lower Murray Darling	http://www.murray.cma.nsw.gov.au/draft-cap/download.html
	Murray	http://murray.cma.nsw.gov.au/draft-cap/download.html
	Murrumbidgee	http://www.murrumbidgee.cma.nsw.gov.au/next-gen-cap/draftcap2013.aspx
	Namoi	http://www.namoi.cma.nsw.gov.au/931351.html?5
	Northern Rivers	http://www.northern.cma.nsw.gov.au/downloads/publications/new-pubs/nrcma-draft-cap-2013-23-web.pdf
	Southern Rivers	http://www.southern.cma.nsw.gov.au/documents/Catchment%20Action%20Plan%20-%20Section%201%20(Overview).pdf
	Sydney Metropolitan	http://www.sydney.cma.nsw.gov.au/images/documents/cap-2010/smca-catchment-action-plan-2010.pdf
Northern Territory	Northern Territory	http://www.territorynrm.org.au/inrm-plan/2010-2015-inrm-plan
Queensland	Burnett Mary	http://www.bmrg.org.au/downloads/Strategic_Plan.pdf
	Cape York	new
	Condamine Alliance	?

⁴ Region names and boundaries are under review

REGIONAL NRM PLANNING IN AUSTRALIA

	Desert Channels	http://www.dccq.org.au/sites/default/files/DCQ%20Regional%20NRM%20Plan%202010.pdf
	Fitzroy Basin	http://www.fba.org.au/investments/regionalplan.html
	Reef Catchments	?
	Northern Gulf	http://www.northerngulf.com.au/LiteratureRetrieve.aspx?ID=32864
	North Queensland Dry Tropics	http://www.nqdrytropics.com.au/sites/default/files/NRM%20Plan%202005-2010%20for%20web.pdf
	Queensland Murray Darling	http://www.qmdc.org.au/publications/download/539/plans-1/qmdc-strategic-plan.pdf
	South East Queensland Catchments	http://www.seqcatchments.com.au/LiteratureRetrieve.aspx?ID=95283
	Southern Gulf Catchments	?
	South West	?
	Terrain	http://www.terrain.org.au/images/stories/publications/nrm-plans/V4-Region-Plan-for-NRM.pdf
	Torres Strait	
South Australia	Adelaide & Mt Lofty	http://www.amlnrm.sa.gov.au/Plans/RegionalNRMPan/ThePlan.aspx
	Alinytjara Wilurara	http://www.awnrm.sa.gov.au/Portals/3/AWN1302%20NRM%20Plan%202011-10-18.pdf
	Eyre Peninsula	http://www.epnrm.sa.gov.au/Portals/4/NRM%20Plans/Plans/Managing%20our%20Resources%20Final%2001.05.09.pdf
	Kangaroo Island	http://www.kinrm.sa.gov.au/Publications/KIRegionalNRMPan.aspx
	Northern & Yorke	http://www.nynrm.sa.gov.au/Portals/7/pdf/INRM/B%20-%20Northern%20&%20Yorke%20NRM%20Strategic%20Plan%20-%20May%202009.pdf
	SA Arid Lands	http://www.saalnm.sa.gov.au/Portals/8/Policy Planning/Regiona NRM Plan/SAAL -Volume 1 Ten Year Strategic Plan-082010.pdf
	SA Murray Darling Basin	http://www.naturalresources.sa.gov.au/files/8b5da72e-cfc1-4d20-be57-a1b300f76278/guide-to-the-regional-nrm-plan-gen.pdf
	South East	http://www.senrm.sa.gov.au/Portals/10/PDF/policy%20and%20planning/NRM%20Plan/SE%20NRM%20Plan-%20Part%202%20Strategic%20Plan.pdf
Tasmania	North	http://www.nrmnorth.org.au/northern-tasmania-nrm-strategy-2010-2015
	Cradle Coast	http://www.cradlecoastnrm.com/literature_86603/Cradle Coast Regional NRM Strategy 2010-2015
	South	http://www.nrmsouth.org.au/uploaded/287/15131081_48nrm_strategy_sth_tas_20.pdf

REGIONAL NRM PLANNING IN AUSTRALIA

Victoria	Corangamite	?
	East Gippsland	?
	Glenelg Hopkins	http://www.ghcma.vic.gov.au/media/uploads/10812GHCMRCS0505FinalR.pdf
	Goulburn Broken	http://www.gbcma.vic.gov.au/downloads/RegionalCatchmentStrategy/Goulburn Broken Regional Catchment Strategy 2012.pdf
	Mallee	?
	North Central	http://www.nccma.vic.gov.au/library/scripts/objectifyMedia.aspx?file=KMSMedia/pdf/102/00.pdf&fileName=nccma-69254%202012-18%20North%20Central%20Regional%20Catchment%20Strategy.pdf
	North East	?
	West Gippsland	http://www.wgcma.vic.gov.au/images/stories/PDF/Publications/west_gippsland_regional_catchment_strategy_final_vdec2012_low_res.pdf
	Port Phillip Westernport	?
	Wimmera	http://www.wcma.vic.gov.au/index.php?option=com_docman&task=doc_download&gid=668&Itemid=50
Western Australia	Avon	http://www.wheatbeltnrm.org.au/resources/Wheatbelt-NRM-Inc_Strategic-Plan-2012-2015-FINAL.docx
	Northern Agricultural	http://www.nacc.globalagencies.com.au/files/101/files/NACC%20NRM%20Strategy%202005.pdf
	Rangelands	http://webadmin.communitycreative.com.au/uploads/rangelands/publications/Rangelands%20Strategic%20Plan%202010_V2.0.pdf
	Swan	http://www.perthregionnrm.com/media/54837/swan_region_strategy_for_nrm_-_december_2004_-_compressed.pdf
	South Coast	http://www.southcoastnrm.com.au/pages/3803/southern-prospects-2011-2016
	South West	http://swccnrm.org.au/wp-content/uploads/2011/03/SWCC-NRM-Strategy-Consultation-Draft1.pdf

Appendix 2. Principles guiding the development of regional NRM plans under the Regional NRM Planning for Climate Change Fund

<http://www.environment.gov.au/cleanenergyfuture/regional-fund/publications/pubs/regional-fund-principles.pdf>

Principle	Attributes
1. Plans identify priority landscapes for carbon plantings and strategies to build landscape integrity and guide adaptation and mitigation actions to address climate change impacts on natural ecosystems	<ul style="list-style-type: none"> • Planning processes identify opportunities and management strategies to maximise environmental benefits and landscape resilience, including biodiverse plantings, wildlife corridors, landscape connectivity and protection of remnant vegetation • Planning processes recognise, provide guidance to avoid and mitigate potential risks and adverse impacts associated with carbon sequestration in the landscape, including impacts to biodiversity, water resources and production systems • Planning processes identify priority landscapes for potential carbon sequestration opportunities, mitigation and adaptation in the context of improving landscape connectivity, resilience and wildlife corridors
2. Planning process is logical, comprehensive, and transparent	<ul style="list-style-type: none"> • Planning processes consider previous planning and are consistent with relevant jurisdiction specific planning requirements • Planning processes are informed by a clear understanding of the regional stakeholder and community aspirations and objectives • Planning processes demonstrate a clear understanding of the regional NRM organisation's business, roles and responsibilities • Planning processes show evidence of cooperation for cross-regional climate change impacts and land use planning • Adaptive planning responds to new information and guide improvements as knowledge improves • Planning processes use information at an appropriate scale to spatially identify priority areas in the landscape for carbon sequestration projects and environmental co-benefits • Planning processes demonstrate adaptive planning that responds to current and anticipated climate change research and additional information
3. Plans use best available information to develop actions and are based on collaboration with government, community and other stakeholders	<ul style="list-style-type: none"> • Plans demonstrate strategic alignment with relevant state and Commonwealth NRM policies (such as urban and regional planning, matters of National Environmental Significance, National Water Initiative and the National Wildlife Corridors Plan) • Plans meaningfully engage community and stakeholders • Where relevant, plans identify roles and responsibilities for partners in the region • Plans integrate biophysical, socio-economic and climate change information to fine tune strategies for improving landscape connectivity, function and resilience

Appendix 3. Principles for a healthy NRM governance system in Australia

From Ryan, Broderick *et al.* (2010).

1. Continuity: for Australia to be sustainable, it needs an enduring, countrywide NRM delivery infrastructure

Maintaining healthy ecosystems needs an enduring NRM delivery infrastructure, one that can respond as NRM challenges change over time, but is based on skills and social capital maintained locally. The governance system needs structures and processes – from local to national, private to public – that are linked and stable in the medium term, but are also able to change and adapt in the longer term (see Principle 10).

2. Subsidiarity: devolve decision making to the lowest capable level

For best engagement of people's skills and effort, decision making needs to be devolved to the lowest capable level. However, because there is public benefit in looking after every piece of land well, governance design needs to recognise that governments have a legitimate interest in influencing local decisions. Their influence is better exerted through providing direction, standards, guidelines, incentives and sanctions, than through direct decision making at local level. All devolved decision makers need to be accountable for their decisions.

3. Integrated goal setting: base investments and governance mechanisms on coherent, nested and integrated goals

Clear and shared direction is crucial for good governance of any system. Goals must be linked across scales; and take account of the interactions in ecosystem processes, and tradeoffs between ecosystem services. Integrated goals will result in better targeted actions.

4. Holism: plan to address whole systems

All organisations and activities that impact on natural resources need to be considered. Within government, planning departments and planning decisions should be more included in NRM governance; water plans and agencies need to be better integrated with land management plans and agencies. At the local scale, landscapes must be better managed across tenures. Amongst investors, more inclusion of the community and private sector in governance design could result in mechanisms that would increase their investment.

5. Systems approach: match governance mechanisms to the nature of the linked social-ecological system

In 'complex' ecosystems, system behaviour emerges from interactions within the system and outcomes from interventions are not easily predictable. Experiments can probe for the interventions that work best and then be scaled up. Mixes of policy and delivery instruments can be used. A single 'institution' should only be used when the evidence is clear that this will address the issue and not produce perverse outcomes. Arrangements in remote areas need to be tailored to suit remote communities. Complex, contested and connected issues need to be dealt with thoughtfully and slowly so that rates of change are matched to the time scale of social capacity building.

6. Relationship orientation: recognise that relationships are as important as organisations

Connectivity across the governance system is crucial for integration across sectoral interests and between organisations at different levels. Responsibility and accountability for effective

relationships need to be built into organisational objectives. Investment in relationships is crucial for the system to work as a whole and best captures the synergies within it.

7. Resilience: manage for resilience of ecosystems and communities

We need to draw on the developing knowledge and practice of ecosystem resilience for better targeting investments. A resilience approach aims to keep the slow controlling variables of ecosystems away from undesirable thresholds, or to take them over thresholds to a more desirable state. This approach needs ecosystem function to be relatively well understood (Principle 8) or an active adaptive management approach (Principle 10) to be taken.

8. Knowledge and innovation: equip the governance system with skills, capacity and knowledge, and encourage innovation

A strategic approach needs to be taken for developing the skills, capacity and knowledge that supports the governance system. Encouraging innovation – both in NRM governance and in ecosystem intervention – is crucial to development of healthier ecosystems. More connections need to be made within and between monitoring data, information and knowledge.

9. Accountability: base the case for investment and accountability on sound systems data and knowledge

Cases for government NRM investment and the choice of mechanisms need to be transparent and better quantified in order to compete with other demands on the public purse. They need to draw on good data and ecosystem understanding (from Principle 8) and where possible, be targeted using a resilience approach (Principle 7).

10. Responsiveness and adaptability: regularly review and adapt the whole Australian NRM governance system

Good corporate governance requires regular, strategic assessments of performance and achievements. Accordingly Australia's NRM governance system should be periodically and collaboratively reviewed. The review should recognise the effects of past decisions and investments, and apply an adaptive management approach, searching for innovation in governance mechanisms and testing and experimenting using case studies. It should recognise where the system is in the adaptive governance cycle (rapid growth, conservation, release or reorganisation) and formulate appropriate responses. Changes in governance mechanisms need to be collaborative and take account of the whole NRM governance system (Principles 4 and 6) in order to avoid perverse impacts and to retain productive relationships.

Appendix 4. Links to descriptions of state based regions for planning purposes

ACT Territory Government – Environment and Sustainable Development

http://www.actpla.act.gov.au/tools_resources/legislation_plans_registers/plans/territory_plan

New South Wales – Department of Planning and Infrastructure

<http://www.planning.nsw.gov.au/regional-strategies>

Northern Territory - http://www.localgovernment.nt.gov.au/home/regional_management_plans

Queensland – Department of State Development, Regional Planning and Infrastructure

<http://www.dsdiq.qld.gov.au/regional-planning/>

South Australia – Department of Planning, Transport and Infrastructure

<http://www.sa.gov.au/subject/Housing%2C+property+and+land/Building+and+development/South+Australia%27s+land+supply+and+planning+system/The+planning+strategy+for+South+Australia/Plans+for+regional+South+Australia>

Tasmania – Tasmanian Planning Commission

http://www.planning.tas.gov.au/the_planning_system/regional_planning

Victoria - Department of Planning and Community Development

<http://www.dpcd.vic.gov.au/planning/plansandpolicies/ruralandregionalplanning/regionalgrowthplans>

Western Australia - Department of Planning/Planning Commission

<http://www.planning.wa.gov.au/648.asp>